Tri-Valley CAREs
Page 1 of 63

-

May 27, 2004

Public Comment and Analysis

From

Marylia Kelley Executive Director	Loulena Miles Staff Attorney	Inga Olson Program Director
Tara Dorabji Outreach Director	Peter Strauss Technical Consultant	Matthew Liebman Legal Intern

Tri-Valley CAREs (Communities Against a Radioactive Environment), Livermore, CA

To

U.S. Department of Energy, National Nuclear Security Administration

For

Draft Site-Wide Environmental Impact Statement for Continued Operation of Lawrence Livermore National Laboratory and Supplemental Stockpile Stewardship and Management Programmatic Environmental Impact Statement, February 2004 (SWEIS)

Tri-Valley CAREs' comments on the Draft SWEIS are structured as follows:

I. PURPOSE AND NEED

a. Inconsistency
b. Wastefulness
c. Proposed Actions
d. Precaution

II. ALTERNATIVES ANALYSIS

a. No Plutonium Mission
b. Enhanced Civilian Science

III. CUMULATIVE IMPACTS

Tri-Valley CAREs
Page 2 of 63

IV. TREATIES

a. Non-Proliferation Treaty
b. Biological and Toxin Weapons Convention

V. SPECIFIC PROGRAMS AND ACTIVITIES

a. National Ignition Facility and New Experiments
b. Biological and Biotechnology Research Program and the BSL-3
c. Increase in Plutonium Storage Limit
d. Tritium Increases, Manufacture of NIF Targets
e. Enhanced Test Readiness
f. Plutonium Bomb Cores
g. New and Modified Weapons Development
h. Energetic Materials Processing Center
i. Plutonium Atomic Vapor Laser Isotope Separation
j. Advanced Simulation and Computing Initiative and Terascale

VI. OVERALL CONCERNS

a. Seismicity
b. Environmental Justice
c. Categorical Exclusion
d. Accident Analysis
e. Emergency Response
f. Transportation
g. Containers for Waste Transport
h. Risks to Workers and Community
i. Biological Assessment
j. Superfund
k. Site 300
l. Waste Management
m. Decontamination and Decommissioning
n. Probabilistic Risk Assessment
o. California Environmental Quality Act
p. Freedom of Information Act

VII. DOCUMENT STRUCTURE

a. Integration
b. Cross-referencing and Indexing
c. Plain English

VIII. CONCLUSION

Tri-Valley CAREs
Page 3 of 63

Mr. Tom Grim
Document Manager, SWEIS
Department of Energy /
National Nuclear Security Administration, L-293
7000 East Avenue
Livermore, CA 94550

Also transmitted by email without attachments to: tom.grim@oak.doe.gov

RE: The Department of Energy (DOE) / National Nuclear Security Administration (NNSA) Draft Site-Wide Environmental Impact Statement for Continued Operation of Lawrence Livermore National Laboratory (LLNL) and Supplemental Stockpile Stewardship and Management Programmatic Environmental Impact Statement, February 2004 (generally referred to as SWEIS)

Dear Mr. Grim:

In submitting our organization's comment letter, we reiterate and incorporate our request for an extension to the public comment period. Tri-Valley CAREs' initially submitted its request for a 30-day extension to the public comment period on April 28, 2004. We submitted a follow-up letter on May 11, 2004, and nearly two dozen local, regional and national organizations joined us in that request. Since that time, we have heard from many other public interest organizations and government agencies that they have likewise requested that DOE extend the public comment period for 30 days.

We have followed up with phone calls and emails to DOE emphasizing the reasons necessitating our request, which include the length of the draft document (around 2,500 pages), the technical complexity of the document and the number of new programs and activities proposed. Further, we had requested that DOE provide Tri-Valley CAREs with the unclassified reference materials for the SWEIS. We received some (though not all) of them from DOE -- but not until the public comment period was nearly over. We cannot review these documents thoroughly without an extension of the comment period. 1/31.02, 31.06

Moreover, we filed requests under the Freedom of Information Act on two programs in the Draft SWEIS -- but have not received any substantive response to date. One request is for an unclassified (or declassified) copy of the National Environmental Policy Act document cited by DOE in the SWEIS as having been prepared for the use of plutonium in the Advanced Materials Program. The other involves transuranic waste at Livermore Lab. Therefore, the comments that follow are necessarily limited to the documents we were able to review without the requested extension of the public comment period.

Tri-Valley CAREs is a non-profit organization located in Livermore, California. We have undertaken this analysis of the Department of Energy / National Nuclear Security Administration Draft Site-Wide Environmental Impact Statement for Continued Operation of the Lawrence Livermore National Laboratory and Supplemental Stockpile Stewardship and Management Programmatic

3

Tri-Valley CAREs
Page 4 of 63

Environmental Impact Statement on behalf of our approximately 4,800 members. In cases where we have felt the document left out necessary source material, we have provided supplementary material attached to this comment (but not included in the email version). We request that these materials, along with our comment letter, be reviewed, responded to and included in the record.

2/01.01 Tri-Valley CAREs has been monitoring LLNL activities for more than twenty years. During these past two decades, Tri-Valley CAREs has participated in numerous NEPA review activities involving LLNL and other sites in the DOE nuclear weapons complex. Many of the activities and programs considered in this Draft SWEIS are unnecessary, environmentally hazardous and proliferation provocative. In short, they propel the Livermore Lab in a dangerous and wrong direction.

3/31.04 Further, Tri-Valley CAREs believes that this document is so deficient in information and analysis in key areas that the public and decision-makers cannot evaluate it as-is on its merits. We therefore request that this document be re-circulated in draft form so that the community, legislators and regulatory authorities alike will have an opportunity to evaluate the new information that is requested in our and other public comments.

I. DOE MUST REVISE THE PURPOSE AND NEED STATEMENT IN THE SWEIS

The Purpose and Need statement should be clear and focused; it bounds the "reasonable" range of alternatives that must be evaluated in a SWEIS. DOE's National Environmental Policy Act (NEPA) Recommendations for the Preparation of Environmental Impact Statements directs that:

> The statement of the agency's underlying purpose and need is critical to identifying the range of reasonable alternatives. If the purpose and need are defined too broadly, the number of alternatives that might require analysis would be virtually limitless. It is inappropriate in most situations, however, to define purpose and need so narrowly that only the proposed action would meet the need. The proposed action is generally only one means of meeting the agency's purpose and need for action.

4/02.01

In this case, DOE's purpose and need statement is internally inconsistent. It is written so as to result in a too-narrowly-defined range of alternatives. It is wastefully overbroad, in part because it fails to analyze or consider instances where the current or proposed LLNL activity is duplicative of work performed at another DOE facility and/or may be unnecessary. Finally, the Purpose and Need statement in the Draft SWEIS does not provide evidence of any specific need or a clear justification for the proposed action.

5/31.10 Because the document's Purpose and Need is directly related to the range of alternatives to be considered, Tri-Valley CAREs also recommends that DOE adopt the precautionary principle as a decision-making tool, and incorporate it into the Draft SWEIS.

4

Tri-Valley CAREs
Page 5 of 63

a. The Purpose and Need is Internally Inconsistent

6/02.01 The Draft SWEIS states: "The continued operation of LLNL is critical to NNSA's Stockpile Stewardship Program and to preventing the spread and use of nuclear weapons world wide." This first sentence of the Purpose and Need section defines the two major purposes of LLNL as: support the Stockpile Stewardship and Management program (SSM) and prevent nuclear proliferation. The SSM program is an aggressive nuclear weapons program that is currently developing new and modified nuclear weapons. Curtailing this nuclear weapons development aspect of the SSM program and limiting it to a passive "curatorship" of the existing arsenal would likely prove to be the most direct and effective means by which DOE could pursue its goal of "preventing the spread and use of nuclear weapons worldwide."

7/01.01, 02.01 SSM, as currently carried out, creates vertical proliferation and promotes horizontal proliferation. In the SWEIS, DOE says the goal is to stem proliferation. It also says its goal is "critical" to achieving the SSM program outcomes. How can an activity that by design will provide for the vertical proliferation (or "improvement") of U.S. nuclear weapons and is controversial internationally for its proliferation impacts be said to prevent proliferation?

As part of its Purpose and Need, DOE explains a portion of the Nuclear Posture Review, which is of particular interest, "the third element of the new triad, which reflects a broad recognition of the importance of a robust and responsive nuclear weapons infrastructure in sustaining deterrence. In this respect, the nuclear posture review notes that the flexibility to sustain the US nuclear weapons stockpile depends on a robust program for stockpile stewardship" (S-2).

According to the Draft SWEIS, the strategic purposes that support SSM and the Nuclear Posture Review at LLNL are:

- "warhead evaluation, maintenance, refurbishment and production planned in partnership with DoD", and
- "develop[ing] the scientific, design, engineering, testing and manufacturing capabilities needed for long term stewardship of the stockpile" (P 1-3)

Thus, DOE asserts that a "robust" stockpile stewardship program is needed for "flexibility." This in turn is used as justification for the development of new and modified nuclear weapons -- such as the Robust Nuclear Earth Penetrator on which LLNL is presently conducting development activities.

How do the above listed strategic purposes fulfill the legal obligation to Article VI of the Non-Proliferation Treaty (NPT), to which the U.S. is a signatory? How do they serve DOE's own stated mission of preventing the use and spread of nuclear weapons worldwide? DOE's Stockpile Stewardship goal stands in contrast to U.S. disarmament obligations under Article VI of the NPT, which states:

> "Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nu-

5

Tri-Valley CAREs
Page 6 of 63

> clear disarmament, and on a Treaty on general and complete disarmament under strict and effective international control."

7/01.01, 02.01 cont. At the Non-Proliferation Treaty conference, the U.S. contended that plans for modernization of the U.S. arsenal were purely "conceptual." However, the SWEIS provides for empirical modernization. According to Members of the U.S. Congress (including California Senator Dianne Feinstein) and numerous international diplomats, this "modernization" of the arsenal, which includes the development of a Robust Nuclear Earth Penetrator, is likely to ignite a new arms race. Moreover, experts, including Ray Kidder (senior scientist, LLNL retired), Dick Garwin, Robert Civiak and many others have pointed out that "modernization" is not necessary for maintaining the current stockpile and may, in fact, erode its safety and reliability. See, for example, Managing the U.S. Nuclear Weapons Stockpile: A comparison of Five Strategies. (Attachment 1, Executive Summary -- full report is at www.trivalleycares.org).

A thorough analysis of U.S. obligation under Article VI of the NPT is missing from the Draft SWEIS. Inclusion of a thorough analysis is needed to properly reconcile the contradiction because while the current configuration of the Stockpile Stewardship program (which is only one of numerous ways it COULD be configured) and the Nuclear Posture Review are U.S. policy, the NPT along with the U.S. Constitution itself is the supreme law of the land. The NPT and the posture review are simply not of equal legal "weight" and gravity, though the Draft SWEIS pretends otherwise. Please incorporate the NPT for consideration in the SWEIS, along with the needed analysis and an internally consistent Purpose and Need statement. (Attachment 2)

8/07.01 The Purpose and Need statement should also reflect the important role that civilian research plays at LLNL, a role that could reasonably increase in the coming decade. In this regard, we note that even the LLNL Institutional Plan 2003-2008 devotes a higher percentage of its space to the Lab's civilian programs in basic science, energy, and the environment than does the Draft SWEIS. (Attachment 3)

9/07.01 01.01 The use of an internally inconsistent Purpose and Need statement, taken together with the omission of a full discussion of U.S. obligations under Article VI of the NPT, has fatally prejudiced the alternatives analysis in the Draft SWEIS by allowing it to artificially neglect due consideration of the expanded role that civilian science programs at the Livermore Lab could play in the next decade. Thus, connected to revising the Purpose and Need, the alternatives analysis section should likewise be revised. The alternatives analysis should include a scenario wherein civilian sciences and cleanup activities at Livermore Lab are expanded and the development of new and modified nuclear weapons is curtailed.

10/08.02 Moreover, as we will describe, the Draft SWEIS has improperly written the Purpose and Need so as to also omit needed analysis of a feasible alternative involving the dramatically reduction or termination of plutonium activities at LLNL.

These alternatives would better serve DOE's stated goal of "preventing the spread and use of nuclear weapons worldwide."

6

Tri-Valley CAREs
Page 7 of 63

11/08.01

b. The Purpose and Need is Wastefully Overbroad

The Draft SWEIS does not analyze programs and activities at LLNL in the context of what is already occurring or planned at other sites within the DOE nuclear weapons complex.

Additionally the SWEIS does not look at LLNL's competencies that may be complementary to, rather than independent of, other DOE sites. This failure prejudices the Purpose and Need and the subsequent alternatives analysis because it incorrectly assumes that if the U.S. has an identified "need," Livermore Lab is necessarily the site to "fill" it. For example, the aforementioned LLNL goal of carrying out SSM and the Nuclear Posture Review's activities in

- "warhead evaluation, maintenance, refurbishment and production planned in partnership with DoD", and
- "develop[ing] the scientific, design, engineering, testing and manufacturing capabilities needed for long term stewardship of the stockpile" (P 1-3)

is not only contradictory to U.S. disarmament obligations, it is also a wasteful duplication of activities and capabilities at other DOE facilities, most notably at the Los Alamos and Sandia National Labs.

Programs and activities at other DOE sites that are related to the proposed action and the no action alternative should be evaluated as "connected actions". Many of the programs that are considered essential to fulfill DOE's mandate are only arguably so when Livermore Lab is considered within a vacuum. Connected or related actions on or off-site should be mentioned and a description as to why the proposed (or current) action is needed in addition to the related actions should be provided.

Multiple examples of duplicative programs exist – in fact the DOE in other documents calls many of the programs at Livermore, Los Alamos and Sandia "complementary," which our dictionary defines as meaning "duplicative."

One example is that similarly-capable supercomputing facilities – each very big, very expensive, and with a voracious appetite for energy and water – are being built at Livermore, Los Alamos and Sandia Labs. Each is called "needed" by DOE for the SSM mission. The Draft SWEIS echoes this rationale for LLNL's. But, are three such supercomputing complexes really equally "needed" – or is there wasteful duplication? The SWEIS must analyze this question, not only with respect to LLNL's proposed Advanced Simulation and Computing Initiative facilities, but for all major programs on site at various locations.

The Purpose and Need should be revised to take every precaution that scarce taxpayer dollars are not wastefully being expended on duplicative and unnecessary projects. Moreover, the environmental footprint for an activity can be made smaller by not carrying it out at multiple, duplicative facilities.

7

Tri-Valley CAREs
Page 8 of 63

11/08.01 cont.

Again, a range of reasonable alternatives should include alternatives that ramp down nuclear weapons activities at LLNL and at least one that curtails nuclear weapons development, a.k.a. "modernization," at Livermore Lab altogether.

c. The Purpose and Need Provides No Specific or Clear Justification for the Proposed Actions

NEPA requires that the proposed action be adequately defined and all relevant information presented accurately. We believe that several of the "Major Decision" outlined in the SWEIS do not provide legislators, regulators or community members with adequate information to evaluate the justification or the burdens associated with the proposed new projects. Specifically:

12/34.01, 26.04

Tritium Facility Material At-Risk Limit: The proposed action in the SWEIS will increase the "at risk" limit for tritium (radioactive hydrogen) from the current 3.5 grams per single room/process to 30 grams per room/process. This section in the SWEIS fails to describe that the proposal not only represents a dramatic increase, but also a major departure from prior plans contained in the National Ignition Facility (NIF) project-specific Environmental Impact Statement (EIS) portion of the 1996 Stockpile Stewardship and Management Programmatic EIS. In the prior document the tritium-filled targets for the National Ignition Facility were to be fabricated off-site. This decision to NOT manufacture the NIF targets on site at Livermore was reiterated publicly by LLNL management officials, who stated that the tritium fills would not be done on site because the operation would be too polluting to be conducted in such a highly populated area. The population density hasn't changed -- except to increase. Yet, in the Draft SWEIS, suddenly it is proposed that the tritium targets WILL be manufactured at LLNL.

Tritium target fabrication presents many unstudied risks and should be given a more substantial treatment in this SWEIS. The lack of an adequate description of the proposal in the Draft SWEIS leaves us no way to comment on mitigation measures. The lack of an adequate description also inhibits our ability to fully comment on the risks. However, we can extrapolate from LLNL's historical record for use of tritium in program activities for a glimpse into likely airborne releases. That record shows numerous accidental airborne releases at LLNL, totaling between 750,000 and one million curies since 1960 (no data is available for LLNL's early years from 1952-1960). That record also shows that when LLNL analyzed Livermore Valley wines the tritium concentrations were routinely elevated, and, in 1989, for example, were at 4 times the tritium content of other California wines. Moreover, other area agricultural products were also found to contain elevated levels of tritium. Local rainfall was also found to have high levels of tritium. (Attachment 4)

The levels of tritium contamination in the environment have become lower in recent years due to a decline in program activities at LLNL using tritium – particularly a decline in those program activities involved in packing tritium under high pressures (such as would occur in fabricating tritium targets for the NIF). The proposed action here represents a radical departure from the original NIF proposal – yet no clear justi-

8

Tri-Valley CAREs
Page 9 of 63

12/34.01, 26.04 cont. fication for the change is offered. Please detail in the SWEIS a clear statement of the purpose and need for manufacturing tritium targets on-site at LLNL.

Enhanced Test Readiness: To enhance U.S. readiness to conduct a full-scale, underground nuclear test in Nevada is one of the reasons for the proposed action to increase the tritium at risk level at LLNL nearly ten-fold (the other being the aforementioned on site fabrication of NIF targets). Yet, the Draft SWEIS does not describe the enhanced readiness project in any meaningful detail. Therefore, the Draft SWEIS falls far short of its role under NEPA to provide decision makers and the public with sufficient information to comment on the impacts, alternatives and potential mitigation measures associated with this project. Moreover, this project may substantially undermine U.S. commitments made in 2000 at the NPT conference to work toward ratification of the Comprehensive Test Ban Treaty, a treaty to which the U.S. is currently a signatory though it has not been ratified. The "need "for enhanced test readiness activity at LLNL and its relationship to a potential U.S. return to full-scale nuclear testing should be examined in detail, yet the Draft SWEIS contains no clear justification for the project. Additionally, the Nevada Test Site sits on Western Shoshone ancestral land. Did DOE conduct outreach to the public and First Nations around the Nevada Test Site to solicit their comment on this Draft SWEIS, since the outcome of this project could have huge implications for their communities? What kind of specific outreach was done to community groups or tribal leaders in Nevada and Utah? 13/39.01

Prototype Plutonium Bomb Cores: The Draft SWEIS contains plans to develop new technologies at LLNL that would be used in DOE's proposed Modern Pit Facility (MPF). Yet, the Draft SWEIS doesn't offer any justification for its program of going forward with the start-up or design work for a Modern Pit Facility. The Draft SWEIS does not justify the "need" to develop new technologies for producing plutonium pits. It fails to adequately account for the fact that the Los Alamos Lab is currently manufacturing replacement plutonium pits for the arsenal using technologies that are (a) similar to those LLNL will be developing (e.g., both will employ net casting techniques) and (b) more certain as to outcome as those techniques are less experimental because they are presently in use. We understand that DOE may WANT to develop new technologies in addition to those already in use – but desire is not justification. The Draft SWEIS further fails to explain why LLNL must be the site chosen for the development of new technologies for plutonium pit manufacture. 14/37.01

The SWEIS should discuss the fact that the MPF is extremely controversial – Congress cut its funding more than 50% last year, and the DOE recently announced a pause in the NEPA review for the MPF and in selecting a site to house it. DOE's pause in that process is indefinite. (Attachment 5) In the face of such large uncertainties, it is premature and wasteful to propose spending taxpayer dollars for design work on a potentially unnecessary and expensive facility. Further, we note that the proposed action to develop new manufacturing techniques for the MPF would involve LLNL making prototype plutonium bomb cores on site – and this is one of the reasons behind the proposal in the Draft SWEIS to increase the administrative limit for plutonium at LLNL from the current 1,540 pounds to 3,300 pounds. This is a dra-

9

Tri-Valley CAREs
Page 10 of 63

14/37.01 cont. matic increase, one fraught with risks, and should not be even be proposed without the most careful consideration and clear justification – both of which are lacking.

Integrated Technology Project / Advanced Materials Program (also known as Plutonium Atomic Vapor Laser Isotope Separation or P-AVLIS): The purpose and need for revival of P-AVLIS technology is not detailed in the Draft SWEIS, and its mission is merely mentioned in passing as "Stockpile Stewardship." The Draft SWEIS leaves open the door for DOE to separate any and all plutonium isotopes at LLNL. While DOE may be desirous of having a new separation technology for plutonium, that does not mean the activity is "needed." For example, among other options, DOE could limit "hydroshots" using plutonium-242 as an environmental and non-proliferation alternative to developing P-AVLIS technology at LLNL, assuming that stockpiling Plutonium-242 is a driver for the proposed action. As the Draft SWEIS does not even specify what plutonium isotopes will be harvested and for what specific purposes, we are robbed of our ability to fully comment on Purpose and Need or alternatives. Literally, we would have to offer our guess as to the use(s) proposed for P-AVLIS and then comment on and offer alternatives to our own guess. Such a situation falls far short of what is required under NEPA. 15/27.01

We note too that one use of this technology, if perfected at LLNL, could be to separate out the Plutonium-239 from reactor or fuel grade plutonium, enriching it to weapons grade for use in nuclear bombs. This technology could be used by other countries, or a technically adept sub-national group, for covert production of weapons grade plutonium. The P-AVLIS technology is unique because it is modular by design and therefore could be implemented on a small scale by a potential proliferant in a university lab or other similar location, making it particularly difficult to detect.

With these facts in mind, the National Academy of Sciences National Research Council criticized the original P-AVLIS proposal, stating in December 1989 that "any decision to proceed should explicitly consider the implications of the technology for nuclear proliferation." (Attachment 6)

Here again, such a potentially risky action should not be proposed without the most careful consideration and a nonproliferation analysis – both of which are entirely lacking in the Draft SWEIS.

d. The Purpose and Need Should Incorporate the Precautionary Principle

The 1998 Wingspread Statement on the Precautionary Principle summarizes it this way:

> "When an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically."

The Precautionary Principle in essence says that in the face of scientific uncertainty, the decision-maker should err on the side of caution. For example, the precautionary principle was used

10

Tri-Valley CAREs
Page 11 of 63

in the California Department of Health Services, Environmental Health Investigation Branch (CDHS-EHIB) report called the: "*Proposed Process to Address the Historic Distribution of Sewage Sludge Containing Plutonium Released from the Lawrence Livermore National Laboratory (LLNL)*" (November 2002). (Attachment 7)

In the discussion section of the CDHS-EHIB report addressing the proposed process for addressing historic distribution of plutonium contaminated sludge, the report concluded that "[s]ince the nature and extent of the potential health hazards remains uncertain, members [of the Sludge Working Group] supported a process that approaches these issues in a proactive manner and would be based on the "precautionary principle". A key component of the precautionary principle is to take precaution in the face of scientific uncertainty." The report outlined a process for further investigation and community involvement and: "CDHS and the SWG recommend that LLNL/DOE provide funding to Alameda County Department of Health Services to implement a process to address the historic distribution of sludge from LWRP (Livermore Water Reclamation Plant)".

16/31.10 The National Environmental Policy Act is precautionary in two ways: 1) it emphasizes foresight and attention to consequences by requiring an environmental impact assessment for any federally funded project, and 2) it mandates consideration of alternative plans. The SWEIS for LLNL should incorporate all aspects of the Precautionary Principle into its analysis and decision making process by:

- analyzing and choosing alternatives that eliminate possibly harmful actions and offer "clean" technologies that eliminate waste and toxic substances;
- placing the burden of proof on proponents of an activity rather than on victims or potential victims of the activity;
- setting and working toward goals that protect health and the environment; and
- bringing democracy and transparency in decisions affecting health and the environment.

The draft SWEIS should be redrafted to fully incorporate the precautionary principle.

17/02.01 In summary, the Purpose and Need must be redrafted to provide a more consistent statement; one in better keeping with all tenets of U.S. law. The alternatives that flow from the Purpose and Need statement should likewise be redrafted to display a more reasonable range of alternatives -- to minimize environmental impacts and waste of taxpayer dollars as well as avoid duplicative and unnecessary projects within the DOE complex. "Major Decisions", as described in Section 1.5 should be broken into their components and described in detail so that these proposals can be meaningfully evaluated. Finally, DOE should incorporate the precautionary principle throughout.

II. DOE SHOULD REVISE ITS ALTERNATIVES ANALYSIS TO INCLUDE OTHER, REASONABLE ALTERNATIVES

18/31.01, 02.01 The alternatives analysis in the Draft SWEIS is deficient and is not reflective of the full range of options that must reasonably be considered for LLNL operations now and in the coming decade.

Tri-Valley CAREs
Page 12 of 63

The alternatives analysis is the "heart" of the EIS (Council on Environmental Quality NEPA Regulations, 1502.14). NEPA requires DOE to "rigorously explore and objectively evaluate all reasonable alternatives" (CEQ NEPA Regulations, 1502.14(a)). DOE must "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decisionmaker and the public" (CEQ NEPA Regulations, 1502.14).

The Draft SWEIS states that:

> "in order to ensure the safety, reliability, and performance of the nuclear weapons stockpile, DOE has determined that it should: construct the NIF and the Terascale Simulation Facility; operate existing facilities such as Building 332 Plutonium Facility…"

18/31.01 02.01 cont. This is a series of merely conclusory phrases that assert a Livermore Lab laser (the NIF), plutonium facility (Building 332) and Terascale supercomputing facility are all necessary to maintain the U.S. nuclear weapons stockpile. The SWEIS should provide some justifications for such a broad, sweeping claim. The claim is arguable at best, and, in the view of Tri-Valley CAREs and many independent experts -- and also many LLNL and DOE scientists -- absolutely untrue. To be specific, the DOE National Nuclear Security Administration folks have "determined" that it shall do those listed activities; however, they are in no way necessary to ensure the safety, reliability and performance of the nuclear stockpile (setting aside the question of whether that is the appropriate mission). This assertion appears to further and inappropriately constrain the analysis of reasonable, feasible alternatives in the Draft SWEIS.

a. Need for Analysis of a "No Plutonium Mission" Alternative

10/08.02 cont. The Secretary of Energy has committed to study the removal of all Category 1 special nuclear material (generally defined as bomb-usable quantities of plutonium and highly enriched uranium) from the Livermore Lab main site due to the vulnerability of these materials to "terror attack" while stored there. The removal of most or all of LLNL's plutonium and the loss of any major plutonium mission for the site must, therefore, be considered as a "reasonable" alternative under NEPA. In fact, it is unreasonable to fail to include it. (Attachment 8)

The Draft SWEIS contains only three "alternatives": the proposed action with 3,300 pounds of plutonium as its storage limit; the no action alternative with the current storage limit of 1,540 pounds of plutonium; and, the reduced operation alternative, which posits the same plutonium storage limit as the no action alternative – 1,540 pounds. The SWEIS must acknowledge that there is clearly uncertainty (to say the least) as to the "need" for significant quantities of this material at Livermore Lab, and it should restructure the alternatives analysis to provide decision-makers and the public with an opportunity to comment on several alternatives for plutonium at Livermore Lab, including a "no plutonium mission" alternative.

11/08.01 cont. The negative environmental impacts that may be associated with the "no plutonium mission" alternative (e.g., removal of plutonium from the LLNL main site) should be compared to the reductions that will occur in waste generation, waste storage, security vulnerabilities, worker exposure, public exposure, and accidents. Moreover, the analysis should include a careful review of activities at the LLNL plutonium facility that are unnecessary and/or duplicative of activities

Tri-Valley CAREs
Page 13 of 63

11/08.01 cont. at other DOE sites. We believe that it is unnecessary to maintain two "full service" plutonium facilities in the nuclear weapons complex and that the plutonium facility at LLNL can and should be closed without increasing the overall plutonium work being conducted at Los Alamos or any other site in the DOE complex. In fact, it is reasonable to reduce the Los Alamos plutonium mission even while LLNL's is eliminated. That this is true is a measure of the bloat and duplication in the nuclear materials activities of the two design labs. Additionally, the new alternatives analysis should outline a credible, open public process for making decisions regarding any proposed removal of the LLNL plutonium to another location.

b. Need for Analysis of an Enhanced Civilian Science Program Alternative

8/07.01 cont. The DOE inappropriately rejected conducting any analysis of the very reasonable alternative of transitioning Livermore Lab in whole or in large part to civilian science purposes. This omission must be remedied. In the past, Secretaries of Energy and federal commissions have entertained this option. It is a feasible alternative for the coming decade. Ten years ago, Tri-Valley CAREs undertook a study of how LLNL could be converted to an unclassified civilian science lab using DOE's existing budget lines – and resulting in a vast reduction in environmental impact and a vast increase in community and worker involvement and the democratic conduct of science generally. While some details have changed, due in part to specific programmatic changes at LLNL over the past decade, our study provides a framework and some very relevant criteria for framing the new civilian science alternative in the SWEIS. (Attachment 9)

III. DOE SHOULD PROVIDE A MORE THOROUGH CUMULATIVE IMPACTS ANALYSIS

DOE's NEPA Implementing Procedures require SWEIS to include "cumulative impacts of ongoing and reasonable foreseeable future actions at a DOE site" (10 CFR 1021.104). The Council on Environmental Quality stresses, "cumulative effects analysis is essential to effectively managing the consequences of human activities on the environment" ("CEQ Guidance Regarding Cumulative Effects").

Cumulative effects result from the proposed action's incremental impacts when these impacts are added to the impacts of other past, present, and reasonably foreseeable future actions regardless of the agency or person undertaking them. Cumulative effects can result from individually minor, but collectively significant actions, that take place over time. These types of impacts involve things such as increased traffic on local roads and air releases to the air basin. If a community is already at maximum carrying capacity for traffic or air pollution, for example, any incremental addition can be cumulatively significant.

Tri-Valley CAREs is concerned with the cumulative impacts of LLNL's tritium releases, "takes" of endangered species, beryllium releases, electrical usage, water usage and other known or potential releases of nuclear, chemical and biological materials to the community. The proposed action signifies a major expansion of programs at LLNL and therefore the SWEIS should make a substantial effort to analyze the cumulative impacts of all programs at LLNL in relation to the burdens that the workers and the community already bear.

13

Tri-Valley CAREs
Page 14 of 63

19/23.01 Increased Tritium / Plutonium Releases: The draft SWEIS omits evaluation of the cumulative effects of a number of its proposed actions. For example, the SWEIS should carefully evaluate the releases of plutonium and tritium from the Livermore Lab and how that may affect the health of the community in light of the current proposals to substantially increase the work with plutonium and tritium at LLNL. It is expected that radioactive materials will be released from projects such as the National Ignition Facility and the Integrated Technology Project; how will these increased releases affect the already contaminated community cumulatively.

20/23.02 Malignant Melanoma: The draft SWEIS dismisses the elevated rates of Malignant Melanoma in the Livermore community as being unworthy of any analysis because DOE claims that there has been no link between LLNL operations and the illnesses. However, the SWEIS does acknowledge that LLNL operations will result in cancers in the local community. Regardless of whether the Malignant Melanoma increases can be proven to have resulted from operation of the Livermore Lab, the SWEIS should consider the cumulative impacts of the additional cancer rates and other illnesses on an already vulnerable population. We are attaching a Malignant Melanoma study conducted by the California Department of Health Services, and we ask that you incorporate this as a reference document and analyze it under a revised cumulative impacts analysis in the SWEIS. (Attachment 10)

21/17.04 Air Quality: The Air Quality in the San Joaquin Valley (where LLNL Site 300 is located) and in Alameda County (where the LLNL main site and part of Site 300 are located) is some of the worst in the nation. (Attachment 11).

The SWEIS should acknowledge this and explain the incremental, cumulative and synergistic impacts of the radioactive, hazardous chemical and other releases from LLNL activities, both current and planned over the coming decade.

22/16.03, 16.02 Integration: The draft SWEIS discusses endangered and threatened species in the biological assessment (BA). However that appendix does not discuss how the increased programs at the LLNL main site and at Site 300 will affect these species in detail. It vaguely discusses decommissioning of buildings but does not describe the contents of those buildings and how inevitable leaks will affect species. The BA does not discuss the impacts on different species from radiological and chemical releases. This should be included in the biological assessment. The BA should be discussed in the alternatives analysis and in the cumulative impacts sections to properly integrate the SWEIS.

23/14.01, 25.01 Similarly, the SWEIS does not discuss the seismic concerns throughout the SWEIS nor does it integrate the seismic concerns into the alternatives analysis. This should be included to ensure that all new proposed projects will take into account the hazards that seismic weaknesses will pose toward going forward with the proposed action.

24/09.03 Land Use Conflicts: The areas surrounding the LLLNL main site and Site 300 are becoming increasingly residential. Industrial areas are being rezoned to residential. The SWEIS

14

Tri-Valley CAREs
Page 15 of 63

24/09.03 cont.

should analyze the appropriateness of continued weapons research, development and manufacturing activities in close proximity to growing suburban communities.

IV. DOE SHOULD REVIEW HOW ITS WORK WILL IMPACT INTERNATIONAL TREATIES

The SWEIS does not discuss or outline how LLNL will make good faith efforts to ensure that its work does not overstep the bounds of or otherwise weaken international agreements such as the nuclear Non-Proliferation Treaty (NPT) and the Biological Weapons and Toxin Convention (BWC). The DOE has some history of studying the potential proliferation impacts of its programs, including in NEPA documents. And, it is reasonable and necessary to do so here in the SWEIS. If we want other countries to believe that the U.S. plans to comply with its treaty obligations, then DOE needs to conduct a full and thorough analysis of potential impacts to those obligations in the SWEIS.

a. Potential Impacts on the Non-Proliferation Treaty Must be Analyzed

The nuclear Non-Proliferation Treaty, which the U.S. ratified and which entered into force in 1970, states that nuclear weapons states must "pursue negotiations in good faith on effective measures relating to the cessation of the nuclear arms race at an early date and to nuclear disarmament…"

It is unacceptable to brush aside a discussion of how DOE will ensure compliance with the NPT in its analysis in the SWEIS, especially with new weapons projects at Livermore Lab planned for the coming decade, including work on: the Robust Nuclear Earth Penetrator; the Advanced Concepts Initiative, including work on very low-yield, more "usable" nuclear weapons; the Plutonium Pit development for the Modern Pit Facility; and Enhanced Test Readiness. These and other programs currently planned / underway at Livermore Lab may very well contradict the NPT and/or weaken or complicate its underlying non-proliferation regime.

2/01.01 cont.

The New Agenda Coalition, an influential group of signatory states to the Non-Proliferation Treaty, have called upon the nuclear weapons states to stop modernizing their arsenals:

> "Any plans or intentions to develop new types of nuclear weapons or rationalization for their use stand in marked contradiction to the NPT, and undermine the international community's efforts towards improving the security of all states." (Attachment 12)

Please consider the statement, also attached, "Special Time Statement on Nuclear Disarmament" by Ambassador Luis Alfonso De Alba on behalf of the New Agenda Coalition, New York, 3 May 2004.

The SWEIS should consider the totality of current and proposed activities at LLNL, and examine specific projects in detail, with regard to their impacts on the NPT specifically and non-proliferation objectives in general. The Draft SWEIS with the addition its draft non-proliferation review should be re-circulated to the public for comment.

15

Tri-Valley CAREs
Page 16 of 63

b. Potential Impacts on the Biological and Toxin Weapons Convention Must be Analyzed

The BWC was ratified by the U.S. in 1975. This treaty requires that all signatories refrain from developing, producing or stockpiling, or otherwise acquiring or attaining biological weapons that have no justification for prophylactic, protective or other peaceful purposes.

Scott Ritter, a former United Nations chief weapons inspector in Iraq, cautioned that placement of advanced bio-agent research facilities inside a secret nuclear weapons lab such as LLNL will raise serious suspicions in the minds of officials of other governments -- because this research is by its nature "dual use." International suspicions may be compounded by other countries' inability to conduct full inspections of LLNL's bio-work due to its collocation within a top-secret nuclear weapons laboratory.

25/01.02

Moreover, developing bio-defense facilities at LLNL may create a precedent that could prompt other nations to model their biological weapons development facilities after the fast growing U.S. complex. A world in which a leading nation is perceived to be secretly exploring the military application of biotechnology (due to the dual-use nature of LLNL's planned research, which would involve aerosolizing and genetically modifying deadly pathogens) would create a situation ripe for proliferation. In fact, housing dangerous bio-warfare agent research within a secret nuclear lab that holds the infrastructure to produce agents for a theater scale war (e.g., a large capacity fermenter), presents a dangerous posture to the international community and could complicate the negotiation of verification and enforcement protocols to the BWC as well as potentially catalyze a new biological arms race.

The SWEIS must include a nonproliferation review that analyzes the potential impact that conducting advanced bio-warfare agent research at LLNL may have on U.S. and international efforts to stem biological warfare research and weaponry in general and on the BWC in particular.

V. COMMENTS ON SPECIFIC PROGRAMS

a. DOE's National Ignition Facility SWEIS / SPEIS Analysis Fails to Comply with NEPA; DOE Should Not Move Forward With the Project

Appendix M of the Draft SWEIS outlines plans to add plutonium, highly-enriched uranium, lithium hydride and other new materials to experiments in the National Ignition Facility (NIF) mega-laser. Appendix M makes clear that some of the planned plutonium experiments, for example, will involve fissioning the material in the NIF. This appendix purports to serve as a SPEIS but fails to adequately describe the programmatic impacts of these proposed experiments.

26/26.01

Under this proposed action, the NIF will no longer be limited to fusion research and the fusion component of a nuclear weapon explosion, but, instead, will be used to conduct a broad suite of both fusion and fission experiments. Adding fissile and fissionable material to NIF experiments provides a new utility to its use for nuclear weapons design and may contribute to the vertical and horizontal proliferation of nuclear weapons. The proposed action, in essence, creates a

16

Tri-Valley CAREs
Page 17 of 63

26/26.01 cont. wholly new and vastly different mission for the NIF. This was pointed out at the public hearing in Livermore by Dr. Ray Kidder, a retired senior scientist at LLNL and founder of its laser division.

27/26.03 Environmental Concerns: Plutonium and other fissile material would be used in NIF. Fission products would be created during experiments in the NIF. Workers would be exposed, for example, during the process of inserting and removing a special target chamber for each plutonium fission experiment in the NIF. Inadequate attention is paid in the document to worker exposures. Appendix M discloses, too, that DOE is unsure of how it will get the special target chamber into and out of the main NIF target chamber each time.

28/26.07 Similarly, potential waste management issues are too summarily dismissed. For example, the entire special target chamber would need to be disposed of after a single plutonium fission shot, according to Appendix M. Plans are to dispose of the special target chambers at the Nevada Test Site. However, the document does not analyze whether there may be problems that would prevent the chambers from being accepted at the test site for burial (e.g., if a chamber is contaminated also with a state or RCRA-listed hazardous constituent and becomes a "mixed waste").

29/26.03 Lithium hydride presents hazards to workers and the environment as well, and these are not fully analyzed in the Draft SWEIS. The Environmental Protection Agency rates it as "extremely hazardous." Lithium hydride can ignite on contact with air. Human sweat can set it off.

Finally, according to the Draft SWEIS, the proposed new experiments in NIF will mean that gas and semi-volatile fission products would be released to the environment. The document should describe these gases and semi-volatile fission products.

30/26.02 SPEIS fails to analyze program-wide impacts: The SPEIS or Supplemental Programmatic Environmental Impact Statement for Experiments with new materials in the National Ignition Facility does not meet the criteria for an adequate programmatic NEPA analysis.

The Department of Energy published the Record of Decision (ROD) (61 FR 68014) for the Stockpile Stewardship and Management (SSM), Programmatic Environmental Impact Statement (PEIS) and indicated that the Department would construct and operate the National Ignition Facility at the Lawrence Livermore National Laboratory as a key component of the nation's nuclear weapons stockpile.

A lawsuit, brought by a coalition of environmental groups including Tri-Valley CAREs, challenging the adequacy of the SSM PEIS, alleged that there were DOE proposals to conduct experiments at the NIF using hazardous and radioactive materials not studied in the SSM PEIS. The court acknowledged that the document would have to be amended if these experiments became foreseeable. In a Memorandum Opinion and Order issued by the U.S. District Court for the District of Columbia on August 19, 1998, in NRDC v. Richardson, Civ. No. 97-936 (SS) (D.D.C.), the Court ordered the DOE to, no later than

17

Tri-Valley CAREs
Page 18 of 63

January 1, 2004, either (1) determine that experiments using plutonium, fissile materials, and fissionable materials will not be conducted in the NIF, or (2) prepare a Supplemental SSM PEIS analyzing the reasonably foreseeable environmental impact of such experiments.

30/26.02 cont. We note that DOE is out of compliance with the timeframe imposed by the Court Order. Further, it is inappropriate to simply incorporate the SPEIS into the SWEIS because it defeats the purpose of a programmatic review and it undermines the intent of the court's 1998 order. A programmatic review, unlike a project-specific EIS, "presents an opportunity for a federal agency to evaluate the potential cumulative impacts of the reasonably foreseeable actions under the program..." 40 C.F.R. 1502.4(c). The program in this case is the Stockpile Stewardship and Management Program, and the court order requires that DOE evaluate the new experiments on NIF in the context of that entire DOE SSM complex rather than in the context of LLNL alone.

The new experiments in NIF will pose new programmatic challenges and questions in respect to obtaining feed materials, transportation of nuclear materials, purpose and need, and disposal of waste within the DOE complex. Further the new experiments in the NIF should be analyzed for reasonable alternatives – not just LLNL wide – but within the DOE complex-wide SSM program.

31/26.01 We also note the complete lack of any cost estimate for the proposed suite of new NIF experiments. Nor is there any cost estimate included for the required equipment or for the needed modifications to NIF's existing equipment and design. Appendix M mentions but does not analyze the extent of modification that would be required in order to conduct the experiments outlined in the proposed action. For example, Appendix M briefly mentions that a special target chamber will be needed for each time certain of the plutonium shots (the fission shots) occurs in NIF. Appendix M reveals that DOE is not yet certain how these special target chambers will be placed inside the main target chamber. Appendix M further mentions (but does not analyze) that to accommodate this series of new, special target chambers, modifications will need to be made to NIF's design. What are the total costs of all of the changes and modifications that would be necessitated by the proposed action alternative? What are the uncertainties? The document should include that information and be re-circulated for comment.

Moreover, the programmatic priority -- and trade-offs due to cost and other factors -- within the SSM complex for these experiments should be analyzed. Finally, the SPEIS should analyze how the cumulative impacts of this proposal will impact all sites within the SSM program.

The Purpose and Need For the New Experiments is Inadequate: Although the SWEIS does provide a basic description of some of the proposed new experiments in the NIF, it does not discuss the purpose and need for these experiments and whether these experiments may, intentionally or by default, change the fundamental mission of the National Ignition Facility. We echo the comments of Ray Kidder, former senior scientist at Livermore Lab and founder of its laser directorate, who commented that these new materials

18

Tri-Valley CAREs
Page 19 of 63

will provide NIF with substantially more usefulness for weapons design activities. We are concerned that the impact of NIF's "mission change" or "mission creep" has yet to be evaluated within the purpose and need for the NIF.

31/26.01 cont.

Past Proliferation Study is now Moot and New Study is Needed: In a December 19, 1995 report titled, The National Ignition Facility (NIF) and the Issue of Nonproliferation, the DOE stated that: "Efforts to achieve ICF [inertial confinement fusion] capsule ignition and burn at the NIF will not make use of any fissile material [i.e., plutonium or highly enriched uranium]. And, it also stated that "only a few individual weapon – relevant processes can be studied at NIF in each experiment [thus limiting its weapons development utility]". To underscore that plutonium and other new materials would not be used in NIF experiments, the DOE report goes on to say that "a proliferator's intention to attempt to use NIF data for nuclear weapons purposes might be evidenced by:

- the use of certain materials such as fissile material or certain fusion fuels at special conditions of temperature and density" (Attachment 13)

However, the SWEIS proposes to use fissile materials like plutonium in the NIF. Moreover, in this context, we ask whether the term "certain fusion fuels" as used in the DOE nonproliferation review includes certain experiments with lithium deuteride, which is now also proposed for use in the NIF?

Ray Kidder has stated that not only are these newly proposed experiments "not necessary to maintain the current stockpile" but that "fusion-explosion experiments with these fissile materials could be important to the design of new nuclear weapons of a type different from any in the current stockpile."

32/01.01

Key assumptions of the past proliferation review are invalid and a new review is warranted and necessary. DOE must conduct a new nonproliferation analysis covering the proposed use of plutonium, highly enriched uranium, lithium hydride and other new materials in NIF experiments before moving forward with the proposed action. That analysis must be made part of the NEPA document and re-circulated in draft for comment by decision-makers and the public.

33/26.06

Neutron Spectrometer: In Appendix M, the NIF suddenly acquires a neutron spectrometer. The Draft SWEIS describes the neutron spectrometer only briefly and by stating that it will be installed in a concrete shaft excavated to a point 52 feet below the surface. The neutron spectrometer appears to be a major undertaking, yet it is not fully described. The SWEIS must include a complete description. Further, the neutron spectrometer's purpose and need seems (once again) to be simply that DOE desires it. Finally, the Draft SWEIS says that that its construction will begin in 2008 and "when completed," the neutron spectrometer "would become part of the NIF operational facility." Does this mean that DOE is planning to add a neutron spectrometer but is NOT including its projected costs as part of the NIF budget? Please explain. The SWEIS should include the full cost of the neutron spectrometer as well as a description of potential environmental impacts.

19

Tri-Valley CAREs
Page 20 of 63

Additional Questions Posed By NIF: The NIF is plagued by technical problems and is not likely to achieve ignition at all. This was further evidenced by the DOE's FY05 budget request to Congress that proposed an additional delay in NIF ignition experiments -- to 2014. Also the cost has skyrocketed – NIF went to Congress with an estimated $1 billion dollar price tag. In 2000 the estimate had risen to $4.2 billion, according to the General Accounting Office. And, now?

34/26.01

Finally, explanations are lacking in the Draft SWEIS as to (1) the likelihood (or lack thereof) that NIF will meet its scientific goal of inertial confinement fusion (ICF) ignition in laboratory experiments, (2) how NIF with (or without) ICF ignition is directly required for maintenance of the existing nuclear arsenal, and (3) whether NIF is fully compliant with Article 1 of the Comprehensive Test Ban Treaty.

The SWEIS process must take a fresh look at the entire National Ignition Facility program. A thorough review of NIF's mission, environmental risks, proliferation impacts, life-cycle costs and ability to achieve its stated scientific goal of ignition is called for -- not the new and fundamentally different set of experiments proposed in the Draft SWEIS.

b. DOE Should Provide More Thorough Review of the Biology and Biotechnology Research Program in the SWEIS, Including the Bio-Safety Level-3 Facility

35/02.02

The Purpose and Need statement in the SWEIS does not even acknowledge the very recent and significant growth of the Livermore Lab's Biology and Biotechnology Research Program (BBRP) and the controversy regarding whether LLNL is the best suited entity for going forward with a higher risk set of programs, such as operating a Bio-Safety Level-3 (BSL-3) facility, in the BBRP. The prior NEPA review for the BSL-3 facility is currently stalled in litigation and therefore it is inappropriate to consider the BSL-3 part of the "no action" alternative when final approval has not been received on the BSL-3. The Draft SWEIS also does not make an effort to describe how these experiments will comply with the Biological and Toxic Weapons Convention, or whether they may weaken that treaty regime and/or complicate the enforcement and verification protocols.

36/01.02

35/02.02 cont.

The Draft SWEIS fails to give an in-depth explanation of proposed actions with regard to biological weapons related research. NEPA requires DOE to discuss major Federal actions that may significantly affect the environment (CEQ NEPA Regulations, 1502.3). This includes both "new and continuing activities" (CEQ NEPA Regulations, 1508.18). Under DOE's NEPA Implementing Procedures, "action" refers a "project, plan, or policy" (CEQ NEPA Regulations, 10 CFR 1021.104). Tri- Valley CAREs asserts that the BBRP, including the BSL-3 are connected actions. So while it is true that the NEPA review done for the BSL-3 is woefully inadequate on its face, it is also true that the SWEIS must include a review of the entire BBRP as well as the BSL-3 facility – the BSL-3 cannot be merely considered in isolation.

"Connected actions" are those that cannot proceed unless other actions are taken previously or simultaneously, or are interdependent parts of a larger action and depend on the larger action for justification. "Cumulative actions" are those that when

20

Tri-Valley CAREs
Page 21 of 63

viewed with other actions proposed by the agency have cumulatively significant impacts and therefore should be discussed in the same EIS. "Similar actions" are those that when viewed with other reasonably foreseeable or proposed agency actions have similarities that provide a basis for evaluating their environmental impacts together, such as common timing or geography. (See 40 CFR 1508.25(a).)

DOE must therefore perform a detailed explanation of all current and proposed BBRP activities beyond that which is in the Draft SWEIS. As it stands, the SWEIS only dedicates two paragraphs to its chemical and biological plans for the next decade, and has almost no discussion of the particular effects of those projects. In order to comply with NEPA, DOE must discuss the specific environmental impacts and increased hazards posed by the Biology and Biotechnology Research Program.

Tri-Valley CAREs maintains the position that BSL-3 level advanced bio-warfare agent research should not be conducted inside LLNL for several reasons. First off, it poses yet another catastrophic hazard to the community, where homes and apartments extend right up to the fence line of the Livermore Lab main site where the BBRP activities are housed. Second, the Secretary of Energy has publicly spoken out about the security deficiencies at Livermore Lab. The bio-warfare agent storage poses the same kinds of security (e.g., "terror attack" or sabotage) concerns. Moreover, we note that the BSL-3 is planned as a portable building in an area with less security than the Superblock (where the plutonium is stored). Therefore, the security risks may be greater. This should be fully analyzed in the SWEIS. Please consider the information provided by former LLNL security police officer Mathew Zipoli in this regard as well as with respect to security issues more broadly. (Attachment 14)

35/02.02 cont.

Purpose and Need of the BBRP Must be Analyzed Programmatically in the SWEIS: A clearer explanation should be included in the SWEIS of what current biological programs are taking place at the lab, how they may grow in the future, what these programs will entail and what types of environmental impacts may result from normal operations and accidental releases. The Lab's Institutional Bio-safety Committee has acknowledged that:

> "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." (Meeting minutes of April 11, 2001, Attachment 15)

Because of the growth of these programs, a dedicated portion of the SWEIS should focus on the BBRP, including a detailed description of current and proposed activities, and its hazards and impacts. All of the BSL labs that compose the BBRP share some environmental consequences and resource commitments such as work space, employees, waste streams, transportation hazards and related concerns. With shared personnel and shared infrastructure come shared challenges regarding training, equipment, transportation, disposal, best practices, emergency planning and safeguards. These challenges should be analyzed in an integrated way as a separate, identifiable section of the SWEIS.

21

Tri-Valley CAREs
Page 22 of 63

A Nonproliferation Analysis Must be Included in the SWEIS: Following the Bush Administration's discontinuation of the negotiations on verification and enforcement measures needed to detect and prevent violations of the Biological and Toxin Weapons Convention, it is an internationally sensitive climate regarding biological weapons research.

By expanding U.S. biological weapon agent research into secret, highly-classified nuclear weapons labs, the DOE could both set a precedent for other countries to do the same and instill in other countries a suspicion that the U.S. is developing biological weapons, novel (e.g., genetically modified) bio-war agents and/or new biological weapon capabilities. We note as well that the LLNL main site also houses an Environmental Microbial Biotechnology Facility, a fermenter that could be made capable of growing enough bio-weapon agent for a theater scale war. (Attachment 16)

If this same work were taking place inside military installations in other countries, say Iran or Iraq, for example, the U.S. would proclaim it as a "smoking gun" and proof positive for bio-weapons possession. That U.S. perception would remain true even if the level of funding, the size of the facilities and the sophistication of the research were all demonstrably lower what is planned in the U.S. at LLNL. Moreover, a country may act on its perceptions -- as the U.S. invasion of Iraq dramatically shows. Therefore, the SWEIS must consider that a U.S. biowarfare agent research program at Livermore Lab may look no less provocative to much of the rest of the world. And, that numerous countries may act based on those perceptions. A boost in their own nations' bio-warfare agent research may well be one result.

36/01.02 cont.

We are concerned that the increased U.S. BBRP program at LLNL and its BSL-3 could encourage others to "do as we do, not as we say" -- and therefore a non-proliferation review is warranted must be completed as part of the SWEIS process.

Former UN weapons inspector Scott Ritter and University of California at Davis professor and microbiologist Mark Wheelis have described some of the hazards associated with advanced bio-warfare research inside the Livermore Lab. Both Ritter and Wheelis are experts in their field and should provide new ideas about what concerns should be included in the nonproliferation review in the SWEIS. (Attachment 17)

The Problem of Dual-Use and LLNL's Advanced Bio-Warfare Agent Research: The research with biological weapon agents at Livermore Lab could, by definition, be used for defensive goals (e.g., to develop a biodetector) and for offensive goals (e.g., to weaponize an agent). That is one reason why it is so critical to have safeguards and verification measures in place to ensure that the work does not violate or weaken the BWC.

The National Academy of Sciences report "Biotechnology Research in an Age of Terrorism: Confronting the 'Dual Use' Dilemma" - 2003, states that there are currently no guidelines to address "the potential for misuse of the tools, technology, or knowledge

22

Tri-Valley CAREs
Page 23 of 63

base of this research enterprise for offensive military or terrorist purposes." (Attachment 18)

36/01.02 cont.

Please consider this report and include it (as with our other attachments) as one of the reference documents for the SWEIS. With poor oversight, the DOE could be paving the way for the next generation of super-strains of deadly bio-agents. Please consider the information provided by Edward Hammond and Professor and author Susan Wright, as well as the aforementioned Ritter and Wheelis, when you evaluate the risks associated with this program. (Attachment 19)

The SWEIS should also evaluate the purpose and goals of the Institutional Biosafety Committee (IBC), an important committee that serves as the "safety net" to ensure that LLNL does not conduct unsafe or inappropriate research, It is further supposed to serve as the community's "bridge" to bio-experiments at LLNL. Tri-Valley CAREs has been very disappointed in the lack of information available to the public on these programs in general and the IBC in particular. The IBC is intended to ensure that the biological research is transparent and that Livermore Lab is held accountable for its work. It cannot carry out that mission while meeting in secret -- in a classified area of the LLNL main site -- and without any prior public notice.

37/25.04

Accidents and Other Issues: Among the key issues that must be analyzed in the SWEIS are -- past accidents in the bio-programs including but not limited to the anthrax that may have gone out with the trash, needlestick received by an employee in the hazardous waste area when a bio-program waste container was improperly marked, and the mislabeling of transportation containers. These and other incidents should be evaluated in the SWEIS. (Attachment 20)

The SWEIS must also consider the potential impact of earthquakes on the BSL-3 and other facilities that are part of the BBRP, the vulnerability of HEPA filters and their translucency in the tenth-micron range, and the proximity of large numbers of workers and community members. (Marion Fulk, staff scientist, LLNL, retired and Matthew McKinzie, physicist, NRDC -- Attachment 21)

c. DOE Should Phase Out LLNL Plutonium Activities, Not Increase the Storage Limit

38/33.01

The proposed action would increase the administrative limit for plutonium at LLNL from 1,540 to 3,300 pounds. Tri-Valley CAREs believes that increasing the storage limit for plutonium at LLNL is irresponsible, dangerous and headed in the wrong direction. LLNL's main site and its plutonium facility are located in the midst of the densely populated San Francisco Bay Area, and 7 million people reside within 50 miles of LLNL. Moreover, the LLNL main site is a very compact and crowded 1.3 square mile facility with buildings "cheek to jowl" and nearly 10,000 employees and subcontractors on site. Residential neighborhoods are built right up to the LLNL main site fence line. The City of Livermore has grown substantially since LLNL was founded in 1952, thereby increasing the risks from a release to a larger and more diverse population.

23

Tri-Valley CAREs
Page 24 of 63

Fires, spills, filter failures, leaks and criticality accidents with radioactive materials have all occurred at LLNL. There have been more than 30 serious, publicly reported accidents involving radioactive materials at LLNL, including plutonium.

Plutonium-laced liquids have been poured on the ground. Plutonium accidents in Building 332 have contaminated workers and at least one accident blew out a HEPA filter plenum. Plutonium has been routinely and accidentally released to the sewer system, and plutonium has been found at greater than background levels in public parks and near a school. Plutonium has also been found in an off-site air monitor. Plutonium is one of the most dangerous substances known, and weapons-grade plutonium (Pu-239) has a radioactive half-life of about 24,000 years.

38/33.01 cont.

We assert that the physical and chemical properties of plutonium make it difficult to store safely. If plutonium is packed too closely together, or if plutonium parts of a sufficient size come together accidentally, a criticality, or runaway nuclear chain reaction, will occur. We note in this context that the LLNL plutonium facility has been shut down at least twice in the past ten years due to multiple criticality safety violations. And, we note that a criticality accident with highly enriched uranium has occurred at the LLNL main site.

Further, plutonium chips and shavings from manufacturing processes at LLNL can spontaneously ignite upon contact with air. And, storage containers can burst from heat and pressure over time. This can be exacerbated by unsafe canning procedures. In this regard, we note that the LLNL plutonium facility was cited for bulging cans of plutonium as well as other problems during a DOE inspection. The LLNL operational record and safety problems involving plutonium have been given too little attention in the Draft SWEIS.

In addition, we offer the following specific comments and questions on the proposed action to raise the plutonium storage limit at LLNL:

Purpose and Need: the Draft SWEIS vaguely asserts that "Stockpile Stewardship" necessitates proposed increase in the administrative limit for plutonium at LLNL. In 1999, DOE did a supplement analysis on the prior LLNL SWEIS/EIR and decided that the existing 1,540 pound administrative limit for plutonium would continue. The Stockpile Stewardship program was well underway at that time. Therefore, we find it difficult to understand that only 5 years since that decision, DOE proposes to more than double the administrative limit. Please cite the specific changes in the purpose and need for the program that were not anticipated in 1999, and how much plutonium would be required for each. Please, further, cite specific alternatives for each of the changes.

10/08.02 cont.

Alternatives Analysis: The Draft SWEIS fails to include within the Reduced Operation Alternative, an alternative that reduces the administrative limit for plutonium below the current 1,540 pounds. On April 27, 2004, approximately 450 people attended public hearings in Livermore on the Draft SWEIS. An overwhelming majority of the speakers expressed concern about the handling and storage of special nuclear materials in general and, specifically, plutonium at LLNL. That same day, the Congressional Subcommittee on National Security, Emerging Threats, and International Relations held a hearing on the

24

Tri-Valley CAREs
Page 25 of 63

security of plutonium and highly enriched uranium at DOE sites, with a focus on the vulnerability of nuclear material storage at LLNL.

10/08.02 cont. Though the Draft SWEIS argues that it is not reasonably foreseeable to de-inventory plutonium and other special nuclear materials at LLNL, in light of the recent General Accounting Office report on the Design Basis Threat, the Project on Government oversight report (Attachment 22) and the testimony at congressional hearings urging removal of these materials, we believe the Draft SWEIS should provide a full evaluation of this alternative and be re-circulated for comment.

NEPA holds that the analysis of reasonably foreseeable alternatives is the heart of the law. The Draft SWEIS should have included an alternative that studied a reduction of this deadly material at LLNL and, as outlined above in the alternatives section of our comment, we feel that the document is legally insufficient for failing to do so.

39/30.01, 30.02 Security / Terrorism / Sabotage Concerns: As noted, the General Accounting Office just released a report that describes serious concerns they have about the ability of Livermore (and some other DOE sites) to adequately protect stored plutonium from the threats poses by terrorism or sabotage. The Secretary of Energy Spencer Abraham echoed those concerns on May 7, 2004, when he delivered a speech that included the vulnerabilities in securing nuclear materials at LLNL. Secretary Abraham made a commitment to "consider whether certain essential work performed at Livermore could be moved so as to remove the special nuclear materials that are there." Tri-Valley CAREs believes that the Livermore Lab main site is not an appropriate place to house large quantities of plutonium, in part, because the site is uniquely vulnerable and cannot be properly defended in the case of a determined terror attack or sabotage. The Draft SWEIS should include and respond to these concerns. Further, as we noted in our comment on alternatives analysis, the SWEIS should undertake a careful consideration of LLNL plutonium activities and programs that may be unnecessary or are duplicative of activities performed elsewhere in the complex.

Another serious deficiency is that the Draft SWEIS does not contain an unclassified security analysis. This omission robs the public and most decision makers of the opportunity to comment on, question or point out needed improvements in the analysis, if warranted. Nor can the public and most decision makers comment on whether we think the outcomes are acceptable to us. Further, we are unable to look at the differences that may exist in consequence between alternatives. Security studies should be accompanied by declassified or unclassified versions for the SWEIS that release as much information to the public as possible. Tri-Valley CAREs agrees that it may be appropriate to retain classification of certain, specific details (e.g., an in-depth analysis of how to best overcome security at LLNL), but it is absolutely inappropriate and untenable for DOE to omit all security information from the SWEIS.

40/23.01, 37.01 Environmental Hazards: The SWEIS should include an analysis of past plutonium releases at DOE facilities including Livermore Lab and Rocky Flats - especially in light of DOE's proposed action to manufacture prototype plutonium pits at LLNL in support of

25

Tri-Valley CAREs
Page 26 of 63

40/23.01, 37.01 cont. technology development for a Modern Pit Facility. And, in light of Livermore's long history of plutonium storage problems, including but not limited to the bulging cans and criticality violations.

41/23.02 LLNL has been cited for HEPA filter problems in Building 332, including for having old HEPAs in ill-fitting housings on gloveboxes. Please discuss whether the HEPA filters on the gloveboxes in Building 332 remain in the ill-fitting housings -- or have they all been changed? If so, when? LLNL has been cited for keeping HEPA filters in place long beyond the recommended 6-year time frame (in some cases for a quarter-century or more in Building 332). In 1999, at the urging of Tri-Valley CAREs and the Defense Nuclear Facilities Safety Board, LLNL changed the main filter banks on Building 332, but it is unclear if filters that were internal to the building (e.g., on gloveboxes) were changed. How old is the oldest HEPA filter currently in use?

42/33.01 LLNL has been cited for a range of plutonium storage problems, including but not limited to criticality safety violations (Attachment 23). Please indicate the forms in which the plutonium will be stored, the amounts for the various forms (under the proposed action and baseline scenarios) and the types of containers in which it will be stored. Please indicate how long these containers will be stored and please provide a summary of the final disposition strategy for the plutonium.

40/23.01, 37.01 cont. The primary plutonium building was first built in 1961, and the latest major addition was built in 1977. Hence the facility will be 50 years old during the term of SWEIS. Because of its age and the safety infrastructure built into the building, vulnerabilities such as the ventilation system and electrical system must be considered carefully. Although the plutonium facility is not a nuclear reactor, in the nuclear power industry reactors undergo a rigorous review after they have been operating for forty years and design upgrades must be considered. Similarly, the DOE should conduct a rigorous review of the LLNL plutonium facility and recommend significant design upgrades, if warranted. This information should be included in the SWEIS.

43/25.07 Safety Features / Accident Response Capability: According to a report issued by the Defense Nuclear Facilities Safety Board (DNFSB), the accident analysis and bases for calculating consequences used in the Draft SWEIS may be deficient. In a March 17, 2004 report, the DNFSB wrote that staff had reviewed LLNL's accident modeling and found its key assumptions highly questionable. (Attachment 24)

The DNFSB determined that more radiation was likely to escape from the LLNL plutonium facility in an accident than was calculated by the model. Page 3 of the DNFSB report states that the LLNL calculation of only 5% leakage (Leak Path Factor) of the radiation from a plutonium fire is "unrealistic and probably underestimates the extent of a release of unfiltered radioactive material from the facility." The same 5% Leak Path Factor is utilized in the Draft SWEIS. Moreover, the inappropriate Leak Path Factor was just one of three criticisms DNFSB had of the model used to calculate accident consequences. Based on the DNFSB criticism, the modeling in the Draft SWEIS must be redone and the document re-circulated for comment.

26

Tri-Valley CAREs
Page 27 of 63

We would further note that the head of the DOE National Nuclear Security Administration, Linton Brooks wrote in a May 14, 2004 letter to DNFSB that DOE would undertake a review of the model and the 5% Leak Path Factor, an admission that DOE may agree with the DNFSB that the model as currently used may substantially underestimate the consequence of an accident.

43/25.07 cont.

The modeling deficiencies are part of a larger problem identified by the DNFSB. The LLNL's proposed safety basis for Building 332 (the plutonium facility) contains "serious deficiencies," according to the Board. The DNFSB chairman, John Conway, sent the March 17, 2004 report and a follow up letter to the DOE National Nuclear Security Administration head, Linton Brooks on April 12, 2004. In his letter, Conway summarizes the DNFSB findings and states: "Of particular concern to the Board is a new approach adopted by LLNL to allow the unfiltered releases of radioactive materials from the facility during certain accident scenarios... there do not appear to be any safety or operational benefits to be gained from this approach."

The letter goes on to say that, "Portions of this ventilation system [for the plutonium facility], along with several other safety-class systems, have been downgraded from their high reliability and existing operational safety functions in the proposed safety basis."

Therefore, we ask that DOE recalculate the accident scenarios and consequences used in the SWEIS in a manner that addresses the concerns and comments expressed by the DNFSB in its March 17, 2004 report and Chairman Conway's April 12, 2004 letter. The Draft SWEIS should then be reissued and re-circulated to permit outside, independent analysis by decision makers and the public of any new or changed modeling assumptions, calculations and/or outcomes.

We would also like the SWEIS to describe how integral Livermore Lab reliance on air monitors / emergency generators and negative airflow is? In this context, LLNL should include in the SWEIS information about the October 2003 plutonium accident that resulted in a dozen lab employees potentially being exposed to airborne plutonium because glovebox seals, an emergency generator, an alarm system and negative airflow system all failed simultaneously. A case study should be included in the SWEIS describing how all of these things could have failed at once and describing how these types of failures will not happen again. (Attachment 25).

42/33.01 cont.

No Disposition Path: The Draft SWEIS states that a part of the reason for proposing to increase the administrative limit for plutonium at LLNL is that "no disposition path" currently exists. It is Tri-Valley CAREs contention that LLNL should not procure more plutonium when there is no way to dispose of it. Also, please describe any initiatives that DOE is undertaking to locate a repository for plutonium. Does DOE, for example, plan to seek to further amend the permit for WIPP to allow more types of wastes from LLNL? What are the potential risks associated with different disposition pathways? What are the differences, if any, between the Plutonium Disposition PEIS and the DOE's current

27

Tri-Valley CAREs
Page 28 of 63

42/33.01 cont.

plans? Please describe the disposition pathways under consideration at present for plutonium wastes at LLNL.

d. DOE Should Decrease the Storage and "At Risk' Limits for Tritium, Not Increase Them

The proposed action would raise the administrative limit for tritium storage at LLNL from 30 grams to 35 grams. Further, it would increase the "at risk" limit (i.e., the amount that could be used in a single room/process at any given time) nearly 10-fold, from 3.5 grams to 30 grams. Tritium is a radioactive form of hydrogen. The amount of tritium released into the environment from LLNL has always been proportional to the level of tritium activity at the site. Increasing LLNL's tritium activity will mean increased exposures for workers and the public. The Draft SWEIS admits that radiation exposures will go up due to the proposed action; however, the predictions in the Draft SWEIS are too optimistic and the contamination and exposure levels that would result from the proposed action are likely to be much more severe.

Tri-Valley CAREs has cataloged many discharges of tritium in the past from LLNL. Cumulatively, LLNL has released between 750,000 and 1,000,000 curies of tritium into the surrounding environment since 1960. The levels of tritium have been found to be elevated in rainwater on site at LLNL and in the directly surrounding community, in the wine grapes grown in the valley and in the biomass of other plants locally.

44/34.01, 17.02, 18.01, 16.01

A sampling of annual tritium releases to the environment as reported by LLNL shows the following:

1986	1,128 curies
1987	2,634 curies
1988	3,978 curies
1989	2,949 curies
1990	1,283 curies
1991	>1,000 curies
1992	177 curies
1993	137 curies
1994	137 curies

In 1989, when LLNL sampled Livermore Valley wines it found that the tritium concentration in our valley wines was four times greater than the tritium in other California wines. In 1990, in part due to concerns voiced by Tri-Valley CAREs regarding LLNL's tritium contamination, Livermore Lab realigned and substantially reduced its tritium use and inventory. In 1991, LLNL stopped filling the test bomb components with tritium on site. In 1992, the Nuclear Testing Moratorium Act terminated full-scale nuclear testing altogether. Tritium activities at LLNL declined -- and so did the releases. There is a direct correlation between the decreases in tritium activity and the amounts released to the environment. The downward trend of tritium releases represents a move in the right direction for LLNL. The proposed action to increase the administrative limit and, most especially, to raise the at risk limit to nearly ten times the current limit would be a substantial move in the wrong direction.

28

Tri-Valley CAREs
Page 29 of 63

The SWEIS should catalog this history of releases, information about how much tritium is in the local environment, and provide an analysis of how LLNL proposes to ensure that releases do not occur in the future. Tritium is a gas, is not captured by HEPA filters, is only partially captured by other mechanisms, diffuses through almost anything, and will, operating histories show, invariably escape when used under high pressures. Again, it is our analysis, based on our study of tritium use at LLNL and other sites, that increased activity will lead to increased levels of tritium in the environment.

The accidental releases documented at LLNL have been the result of not one but many factors, ranging from equipment failure to employee error. There is nothing to suggest that increases in tritium use at LLNL will not result in similar future accidents.

In 1965 and 1973, about 650,000 curies of tritium were releases through the stacks of the tritium facility (Building 331) at the LLNL main site. In 1991, a DOE Report of the Task Group on Operation of DOE Tritium Facilities listed the following accidents occurring between 1986 and 1991:

44/34.01, 17.02, 18.01, 16.01

125 curies, released 12/15/86 due to a failed pump and cryogenic vessel breach
198 curies, released 4/14/87 due to an equipment failure and operator error
145 curies, released 1/19/88 unknown cause or stack monitor malfunction
138 curies, released 1/25/88 unknown cause or stack monitor 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 a palladium bed contained only deuterium and (non-radioactive) hydrogen
144 curies, released 4/2/91 due to improper preparation of a reservoir

The DOE task force further states that management failures at LLNL were the direct cause of the accidental release of tritium on 4/2/91 and the resultant radiological exposure of facility personnel. (Attachment 26)

In addition to airborne releases, the SWEIS should also discuss the tritium in waste at LLNL and in releases to the sewage, soil, surface and (eventually) ground water. The SWEIS should also look at alternatives that would reduce the amount of tritium on site, rather than increasing it. Further, the SWEIS should consider the case of the neighboring Sandia National Laboratory, Livermore Site. Sandia Livermore has terminated all of its tritium activities and de-inventoried the tritium at the site. This is an alternative that LLNL should analyze in the SWEIS.

On site manufacture of tritium targets for NIF: The proposed action in the Draft SWEIS includes the manufacture and filling of tritium targets for the NIF on site at the LLNL main site. The plan to produce fusion targets on site is one of two activities that will necessitate an increase in the "at risk" limit for tritium at LLNL from 3.5 grams to 30 grams, according to the Draft SWEIS.

29

Tri-Valley CAREs
Page 30 of 63

45/23.02, 34.01

Tri-Valley CAREs strongly objects to this proposed action. As mentioned, tritium is a radioactive form of hydrogen and can easily escape both during routine operations and during accident scenarios. Tritium targets should NOT be manufactured in such a heavily populated area. When released into the environment, tritium combines to make water -- called tritiated water or HTO – significantly increasing its biological toxicity by 25,000 times according to the National Academy of Sciences BEIR V report.

44/34.01, 17.02, 18.01, 16.01

Tritiated water has been shown to induce significant decreases in relative weights of brain, testes, and ovaries, (estimated at 3 rads per day), when exposure began at the time of the mother's conception. Even lower exposures (0.003 rads per day and 0.03 rads per day) have been implicated in the induction of behavioral damage, according to the National Academy of Sciences BEIR III report. Further, tritium can become bound to organic matter when released to the environment. Research conducted by Lowry Dobson at LLNL on the biological effects of tritium revealed that there was no level studied below which biological damage could not be found. (Attachment 27)

Tri-Valley CAREs believes that the limits for tritium should be reduced, rather than increased, at LLNL due to its biological toxicity and the fact the on site and off site environments around LLNL have already been contaminated.

46/26.04

When the DOE originally conducted an Environmental Impact Statement for NIF as part of its Programmatic EIS for Stockpile Stewardship and Management, that analysis neither anticipated nor studied the manufacture of tritium targets on-site at LLNL. Conversely, it did include an analysis covering the receipt and inspection of targets fabricated at other sites (SSM PEIS, September 1996). Moreover, at the time, LLNL said publicly that it would not consider fabrication of tritium targets on site because of the associated emissions and the proximity of a large, nearby population. Why does DOE now believe that LLNL is the appropriate location to manufacture the targets? The Draft SWEIS is silent on this question. We request that it be fully analyzed and the document re-circulated for comment.

e. DOE Should Not Undertake Proposed, New Support Activities to Enhanced U.S. Readiness to Resume Full-Scale Nuclear Testing

47/39.01

Description of Proposed Action: This activity should be described with some detail in the SWEIS. The SWEIS does state that the increased tritium limits will, in part, be due to this activity. The SWEIS should describe this program so that the public can evaluate the hazards and risks inherent in this activity, suggest alternatives when available and evaluate the need for this activity at all. It is impossible to evaluate the Purpose and Need for this activity when it is not clearly described in the SWEIS.

48/01.01

Proliferation Risks: The document explains that LLNL is likely to develop diagnostics to enhance the U.S.' nuclear test readiness level. Last year $24.89 million was requested so that DOE could decrease the amount of time it needed to prepare and conduct a full-scale nuclear test. Congress, after much debate, approved the amount, but instructed DOE to

30

Tri-Valley CAREs
Page 31 of 63

48/01.01 cont.

keep the U.S. nuclear test readiness at its current level of 24 months. Again, this year DOE has requested $30 million to create an 18-month readiness level. This 21.4 percent increase over last year comes after repeated testimony by DOE officials as to the safety and reliability of the U.S. nuclear arsenal. The only "need" for resuming full-scale nuclear testing would be to try out (proof test) a new weapons design. This "enhanced readiness" work is unnecessary and it sends the wrong message to the international community; that the U.S. is expending money and resources in order to return to full-scale underground nuclear testing.

The U.S. is a signatory to the Comprehensive Test Ban Treaty (CTBT) and in 2000, the U.S. recommitted itself to ratifying the CTBT at the nuclear Non-Proliferation Treaty Review Conference. Conducting this activity at Livermore Lab undermines these obligations. This proposed activity should be analyzed in detail and a nonproliferation review included in the SWEIS.

f. DOE Should Not Build a Prototype Plutonium Pit and Pit Manufacturing Technology for the Modern Pit Facility

49/37.01

DOE/NNSA, according to the Draft SWEIS, continues to rely on LLNL in isolation to meet stated Stockpile Stewardship Program mission objectives: "These objectives include campaigns relating to pit manufacturing and certification." An explanation is needed to explain the relationship between stockpile stewardship and the pit manufacturing and technology development activities to be undertaken by LLNL. This explanation should include but not be limited to the fact that the Modern Pit Facility is intended for the production of new-design pits, that is bomb cores for weapon types not currently in the nuclear weapons stockpile -- an activity that Tri-Valley CAREs believes is far, far outside of any legitimate boundary for actual stewardship of the existing arsenal.

The SWEIS also needs to describe this project in more detail. Without a clear description of this program, it is very difficult for the public to comment on the hazards posed by this fabrication / technology development and propose less environmental hazardous alternatives. The SWEIS should include a review of what went wrong with pit development at Rocky Flats that resulted in such drastic contamination and how LLNL plans to avoid those "pitfalls".

Moreover, Los Alamos is planning to certify its first plutonium replacement pits for the arsenal this year. Again, the SWEIS should provide a full justification for why it is "necessary" for LLNL to expend resources on a plutonium pit manufacturing process when one to provide replacement pits for the arsenal is already underway at Los Alamos.

g. DOE Should Not Continue New Nuclear Weapons Development at LLNL

50/02.01

The SWEIS does not describe the new nuclear weapons that are being developed at Livermore Lab. A clearer explanation should be included in the SWEIS of what this process will entail and what types of environmental impacts will result from this activity. We know from other sources that LLNL is re-designing the B83 to become a Robust Nuclear Earth Penetrator. We know that LLNL has taken over modification activities for a Los Alamos designed nuclear weapon, the

31

Tri-Valley CAREs
Page 32 of 63

50/02.01 cont.

W80, and that a series of "modifications" is planned (up through modification 3 and option 3A, according to DOE documents). We know that LLNL is involved in "advanced concepts" work on so-called "mini-nukes" and other novel weapons. This is a small sample of the weapons research, design, development and testing activities planned over the next ten years. These activities have enormous environmental and policy implications and should be detailed in a full and unclassified manner in the SWEIS. Again, these new and modified designs are controversial in the public arena and in Congress -- DOE must justify their purpose and need in the Draft SWEIS. The desire of DOE and some weaponeers inside LLNL to engage in this activity does not constitute a "need" under NEPA.

h. Energetic Materials Processing Center is Insufficiently Analyzed in the Draft SWEIS

51/04.02

The proposed Energetic Materials Processing Center (EMPC) to be located at LLNL Site 300, would include the construction of a new 40,000 square-foot processing facility and four magazines: two capable of storing 1,000 pounds of high explosives and two capable of storing 500 pounds of explosives (Section 3.3.8). Please indicate what type of explosive material is anticipated. Additionally, groundwater emanating from the current high explosives processing area (Building 812) is contaminated with RDX, perchlorate, nitrate, and TCE. Please explain how LLNL plans to manage waste disposal so that this will not occur again. The purpose and need for this action is also not discussed in any detail. This is a major new undertaking, and these deficiencies in the discussion and analysis of the EMPC must be remedied in the SWEIS.

i. DOE Should Cancel Plans to Resurrect Plutonium Atomic Vapor Laser Isotope Separation (i.e., the Advanced Materials Program / Integrated Technology Project)

52/06.01, 27.01

Tri-Valley CAREs believes that LLNL should, at a minimum, adopt the reduced operations alternative and stop all activities with the AMP / ITP because it is expensive, unnecessary, hazardous to workers and the community and poses very significant proliferation risks.

53/27.01, 33.01

The Draft SWEIS, in Appendix N, reveals plans to heat plutonium and shoot multiple laser beams through the vapor to separate out desired isotopes. This project is environmentally hazardous. It will involve a feedstock of 220 pounds of plutonium per year, using a powdered oxide form that can easily escape to the environment. Moreover, the process to turn the oxides into a metal feedstock poses additional risks not disclosed or analyzed in the Draft SWEIS. Public radiation doses will likely occur from airborne radiation emanating from all aspects of this process. Some of this radiation will vent through the Building 332 (the Plutonium Facility) stacks. (page N-22).

This project was originally pursued by DOE in the 1980's, and called Plutonium Atomic Vapor Laser Isotope Separation (P-AVLIS). The original P-AVLIS proposal involved an engineering demonstration system, built at LLNL and a Special Isotope Separation plant to be constructed at the DOE's Idaho site. The P-AVLIS program's funding was cut by Congress and it was canceled by DOE more than a decade ago -- before any plutonium was used in the demonstration system at LLNL. Moreover, the public was promised a full environmental Impact Statement would be conducted before any plutonium was run in the engineering demonstration system at LLNL.

32

Tri-Valley CAREs
Page 33 of 63

53/27.01, 33.01 cont.

The outcome of the original P-AVLIS proposal was that the entire program was cut amid serious proliferation concerns, outcry over the lack of need, and questions about its potential environmental consequences.

The equipment that was to have been used in the P-AVLIS program at LLNL is now proposed for use as the newly-revived plutonium "Integrated Technology Project." The Integrated Technology Project will involve a 3-fold increase in the "at risk" limit for plutonium at LLNL, from 44 pounds in one room to 132 pounds. We note that the original P-AVLIS project did not propose increasing the "at risk" limit for plutonium at LLNL.

54/33.01

The Draft SWEIS neither adequately considers the risks of raising the at risk limit for plutonium nor explains the "need" to do so. This represents a very serious change at LLNL and the paucity of the review in the Draft SWEIS must be remedied.

53/27.01, 33.01, cont.

Need for legitimate NEPA review of AMP : One of the National Environmental Policy Act's six fundamental objectives is to enhance public participation in government planning and decision-making. NEPA creates new and innovative ways for the public to be involved in government activities and requires the federal government to respond to concerns about environmental problems. (Council on Environmental Quality 1997).

Tri-Valley CAREs was shocked to discover by reading the Draft SWEIS that plutonium had already been vaporized and isotopes separated in the AMP program -- years after the program was supposedly cancelled and without benefit of the EIS promised by DOE. In fact, plutonium was run in the project without any publicly circulated NEPA review whatsoever. The Draft SWEIS disingenuously refers to a past NEPA review for which no part was circulated to the public. Its existence was not even disclosed at the time. Even now, the Draft SWEIS does not indicate the level of NEPA review this decision received. Was it a categorical exclusion? A memo to file? Public involvement is one of NEPA's fundamental principles and DOE's failure to circulate this NEPA document violates both the spirit and letter of NEPA.

Tri-Valley CAREs attempted to obtain the NEPA review for the AMP after-the-fact since the Draft SWEIS includes the AMP in the no action alternative and proposes to eliminate the AMP in the reduced operations alternative. We felt it would be valuable for us to include the review so that we could adequately comment on the alternatives in the SWEIS.

55/31.06

We informally requested the AMP NEPA review from DOE/NNSA SWEIS document manager Tom Grim in February/March of 2004. Mr. Grim took two weeks to determine that the review should not be released to us, citing potential proprietary interests. Tri-Valley CAREs filed a formal *Freedom Of Information Act* (5 U.S.C. 552) request on March 17th, 2004, seeking the "National Environmental Policy Act Review of the Advanced Materials Program, Buildings 161, 332, 335: June 20, 2002." and other related documents. On April 5, 2004, we were granted a fee waiver relating to this request. That is the last correspondence that we have received in relation to this request.

33

Tri-Valley CAREs
Page 34 of 63

55/31.06 cont.

NEPA specifically includes provisions that encourage reviewers to utilize FOIA to enable them to comment intelligently on NEPA documents: Agencies shall "make environmental impact statements, the comments received, and any underlying documents available to the public pursuant to the provisions of [FOIA]." 40 CFR 1506.6(f). FOIA is designed to provide documents in an expedited fashion. We attempted to use FOIA, but no documents have been provided to us in response to our request in the past 2.5 months. This has made it nearly impossible to evaluate the alternatives analysis. DOE should release this document publicly so that the alternatives can be meaningfully evaluated. Moreover, the public has the right to comment on whether the scope of the project reviewed and the attendant level and depth of the NEPA review undertaken by DOE in making this decision was sufficient to protect workers, the public and the environment.

56/01.01, 31.04

Need for Nonproliferation Review: Our President has told us that he/we must invade Iraq because of the threat of developing nuclear weapons – yet this technology, when fully developed, will make it easier for any would-be proliferant nation to separate weapons grade plutonium from spent nuclear fuel rods or other reactor grade plutonium forms. This poses a significant worldwide proliferation threat. It is inconceivable to Tri-Valley CAREs that this genuine proliferation threat has not resulted in even a nonproliferation review in the Draft SWEIS, while an undocumented, disputed and largely-conjured threat has led us into war.

Construction of a facility like this in the U.S. sets a dangerous precedent for non-nuclear weapons states to construct an AVLIS process of their own. According to a report from the National Academy of Sciences -- and a letter signed by 31 U.S. disarmament experts in 1989 -- designing and implementing this technology could lead to the spread of AVLIS technology to other countries and groups serving as a bridge between civilian nuclear power byproducts and weapons grade materials. This would in turn pose new verification problems for ensuring that the nuclear power programs of emerging and advanced industrial countries are utilized for exclusively peaceful purposes. The SWEIS must address this very serious proliferation concern and be re-circulated for comment.

57/27.02

Moreover, we note that this program will have negative impacts on workers and the community that go far beyond what DOE analyzed in the Draft SWEIS. This analysis, including the accident analysis, must be redone.

Finally, we wonder if the DOE has an alternative site for the plutonium Atomic Vapor Laser isotope Separation (a.k.a. ITP) program if it is decided that it will not be located at LLNL? If so, where? And, have those environmental risks been assessed and the communities surrounding the alternate site informed and brought into the decision making process? If so, please describe both the risks and outreach that DOE has undertaken to encourage public participation.

i. Advanced Simulation and Computing Initiative and its Terascale Project Require an Expanded Review in the SWEIS

The Terascale facility's purpose is to provide computing and simulation support to DOE's Advanced Simulation and computing Initiative (ASCI), a key element of SSM, according to DOE.

34

Tri-Valley CAREs
Page 35 of 63

The SSM program maintains the readiness, safety and reliability of the U.S. nuclear weapons stockpile.

Terascale is a 268,000 sq. ft facility. It will consume electricity and water in amounts that "are substantial relative to the total LLNL site consumption."

58/21.01 Electrical energy consumption will be substantial; it will increase by 30% above anticipated electrical energy consumption by all other users at the LLNL main site in 2005. Terascale will have electrical needs equal to 1.3% of all consumption in Alameda County. The SWEIS should discuss how these electrical needs will cumulatively impact the environment in the Livermore Area and Alameda County in general. Further, if this facility will primarily be used at night (when the electrical grid is least burdened) then how will it impact the endangered species that forage and travel at night?

59/18.03 Water consumption will also be substantial. Water Consumption will increase by 30 million gal/year. This represents an overall increase in LLNL consumption by 12%. We live in an area where water is a scarce and precious resource.

The cumulative impacts of this water use and electrical use should be analyzed and an alternative that proposes to discontinue operations of the Terascale Facility should be evaluated. This is especially true because similar computing operations are already in progress at other DOE sites. As we noted LLNL, Los Alamos Lab and Sandia Lab all have massive supercomputing initiatives underway in support of Stockpile Stewardship. We note that water and electricity are major issues in both California and New Mexico. Some choices between facilities need to be made.

VI. OVERALL CONCERNS

a. DOE's Seismicity Analysis is Flawed

60/14.01 Livermore and the San Francisco Bay Area are very seismically active areas, as are Tracy and the Central Valley region.

The Draft SWEIS acknowledges that there are two faults within a kilometer of the Livermore Lab main site. Both of these faults, the Greenville and Los Positas faults are shrouded in uncertainty. The Las Positas Fault Zone is situated less than 200 feet from the LLNL main site boundary. It is not clear the level of hazard these faults pose or when they will strike.

61/14.03 LLNL main site has numerous buildings that pose significant earthquake hazards. The earthquake analysis was out-of-date as of the time that the Draft SWEIS was published. Two buildings were undergoing renovations that should have already been completed at the time the Draft SWEIS was published, but no update on the status of these buildings was included.

The Draft SWEIS states that 108 buildings are being evaluated – but it doesn't specify which 108 buildings. The public needs that information in order to evaluate whether it believes certain projects should be conducted in those buildings.

Tri-Valley CAREs
Page 36 of 63

Does the Draft SWEIS require that the buildings are still operational after an earthquake? What standard does it use?

61/14.03 cont. After the 1980 earthquake on the Greenville Fault (which had been listed as geologically inactive until that quake), a 120-meter discontinuous crack opened up on site at LLNL. Tri-Valley CAREs believes that earthquake scenarios must include the potential for substantial ground cracks as well as shaking. The information provided by Robert Curry should be considered in the SWEIS both with reference to the bio-warfare agent research facility and more broadly. (Attachment 28)

b. DOE's Environmental Justice Analysis is Incomplete and Understates the Problems

President Clinton's Executive Order 12898 (59 FR 7629) mandated that federal agencies consider the potentially disproportionate effect of their activities on minority and low-income communities.

Although Livermore is generally of a higher socioeconomic status, the SWEIS should contain a more detailed demographic analysis of the communities surrounding the LLNL main site instead of a cursory evaluation of the number of jobs that will be created. For example, the two major apartment complexes on East Avenue that are closest to the LLNL main site (Stony Creek and Livermore Gardens, located about one-quarter mile from LLNL) are heavily populated by low-income and minority individuals. Livermore has approximately 20,000 racial minorities, and nearly 4,000 people live in poverty (www.bayareacensus.ca.gov/cities/Livermore.htm.).

62/15.02 Any releases or accidents at the LLNL main site would have a greater impact on those communities directly surrounding LLNL, particularly the lower income and minority populations that are clustered in the apartments near LLNL. The SWEIS should identify who those communities are to determine whether the DOE is in compliance with environmental justice mandates.

The Draft SWEIS should also consider whether community perceptions about hazards posed by the LLNL main site could affect the property values of land surrounding LLNL. If this is the case, then lower-income individuals may be disproportionately affected by hazardous and radioactive releases from LLNL. There have been prior incidents, such as the plutonium found in Big Trees Park in 1995 and 1998, that have unsettled public confidence in the value of land near the Livermore Lab main site. (www.wslfweb.org/docs/newsins99.pdf). Future events like this one could have a larger impact on those living nearby.

California law requires mandatory disclosure of any substances, materials, or products that may be an environmental hazard such as, but not limited to, asbestos, formaldehyde, radon gas, lead-based paint, mold, fuel, or chemical storage tanks, and contaminated soil or water on the subject property (California Statutory form 110.22). Property owners are required to report any contamination that is known or could have been discovered by reasonable inquiry. Detecting radioactive substances on a property is an expensive and involved process. Tri-Valley CAREs has become aware of property owners disclosure of potential contamination from Livermore Lab

Tri-Valley CAREs
Page 37 of 63

during the transfer of real property in the City of Livermore. In the cases of real or simply perceived contamination, we believe this should be discussed in the Draft SWEIS, as it could impact property values and the economic health of the community – extending as far out as the 50-mile radius affected environment.

62/15.02 cont. With regard to Site 300, about 30,000 racial minorities live in Tracy, over 40% of its population. 26% are Latino, 8% are Asian, 5% are African-American, 1% are Pacific Islander, and 1% are Native American (http://www.ci.tracy.ca.us/about/demographics/). The same concerns discussed above are even more relevant to Site 300, given Tracy's substantially higher minority population. The Draft SWEIS should offer a more detailed consideration of how property values, safety perceptions, and actual health and safety risks impact poor and minority communities in the vicinity of Site 300.

c. DOE's Categorical Exclusions are Unsubstantiated in the Draft SWEIS, and May Be Inappropriately Applied

63/31.09 The Draft SWEIS offers no explanations for why DOE's categorical exclusions apply. DOE NEPA regulations state that categorical exclusions "do not individually or cumulatively have a significant effect on the human environment" (10 CFR 1021.410). Please provide a reason why each exclusion should be immune from NEPA review, and why each does not have a significant effect on the environment.

64/38.01 Regarding Section 3.2.5 (Container Security Testing Facility), DOE determined that this facility was categorically excluded from further NEPA review. We believe this facility should be described more thoroughly in the SWEIS. This facility would use "actual or simulated threat materials that could be illicitly introduced to the U.S. for the purposes of terrorism." (Section 3.2.5). The CSTF will be a Category 3 Material Balance Area, a Radiological Facility, and a Low-Hazard Chemical Facility. The use of such materials could have a substantial impact on the environment, which we believe requires NEPA review. Please address this issue.

65/22.01 Regarding Section 3.2.9 (Waste Isolation Pilot Plant Mobile Vendor), DOE determined that this activity was categorically excluded from further NEPA review. What document or decision process was involved in making the determination that a categorical exclusion should apply? Conceivably, the Mobile Vendor could engage in a range of activities related to the task of characterizing TRU and mixed TRU wastes that may have a significant impact on worker and public health and the environment. The decision regarding how to ship TRU waste is very important to environmental considerations, and may require NEPA review. (See SWEIS Section 4.13.5, and our comment section on TRUPACT-II and TRUPACT-III casks.)

63/31.09 cont. Regarding Section 3.2.7 (Central Cafeteria Replacement), DOE determined that this facility was categorically excluded from further NEPA review. What document or decision process was involved in making the determination that a categorical exclusion should apply? This facility would be located near the DRB, which is an area with a substantial population of red-legged tree frogs, a Federally listed threatened species (61 FR 25813 et seq.). (Section 3.2.7; see also Appendix E.2.1.5.3, and E-52.). This could have a significant impact on the environment and might be subject to NEPA review. The cafeteria should also be tested for TCE vapor intrusion.

37

Tri-Valley CAREs
Page 38 of 63

Regarding Section 3.2.8 (International Security Research Facility), DOE determined that this facility was categorically excluded from further NEPA review. What document or decision process was involved in making the determination that a categorical exclusion should apply? The construction of this facility could impact the environment, and may require NEPA review.

Further, the Tritium Facility Modernization Project, which is barely mentioned in the Draft SWEIS, is a major undertaking that will have a significant impact on the environment, yet it is being carried out under a categorical exclusion to NEPA. Tri-Valley CAREs only learned of this project because the categorical exclusion is a referenced document in the Draft SWEIS. We were shocked to learn that a categorical exclusion was given to a line-item, $12 million project that will take 6 years to complete (2003 - 2009) and will, at a minimum, cause a projected 7-fold increase in the tritium emissions from Building 331 (from 30 curies in 2001 to 210 curies/yr in 2009 when the project is complete).

These 210 curies/yr emissions appear to be program related, and do not seem to include additional tritium emissions that may be associated with other activities that are also part of the categorical exclusion. Is this a correct reading?

63/31.09 cont. The categorical exclusion covers multiple activities, any one of which could require a higher level NEPA review, let alone all of them taken together. For example, the Tritium Facility Modernization Project's categorical exclusion involves "structural, functional and operational changes." These include but are not limited to: removal and relocation of tritium operations in 7 different labs in Building 331; removal of contaminated equipment including gloveboxes, hoods, piping, pumps and cable trays; construction of "large user devices" and possibly a whole new 6,000 square foot building; and, installation and use of a plethora of new equipment including cryotransporters and user stations capable of pressurizing tritium gas up to 25 ksi. The categorical exclusion also includes a short note stating that tritium handling would increase from 3.5 grams/yr in 2002 to 25 grams/year in 2009.

Tri-Valley CAREs notes a past incident where LLNL staff placed a piece of equipment out into the open area next to Building 331. LLNL staff thought the piece of equipment was only a little contaminated with tritium. It off-gassed tritium to such an extent that when LLNL staff went out and conducted routine monitoring of the rainfall for their annual environmental monitoring report, they found that the concentration of tritium in rain water was 147,000 picocuries per liter. The state and federal maximum contaminant level for drinking water is 20,000 picocuries per liter. 147,000 picocuries/liter is 7 times the maximum contaminant level, and is essentially radioactive waste falling out of the sky. This, from one single piece of equipment. The categorical exclusion covers a smorgasbord of contaminated equipment as well as the piping and ductwork in Building 331, which is known to be very heavily contaminated and could off-gas an unknown but potentially large amount of tritium.

Some of the changes outlined in the categorical exclusion for the Tritium Facility Modernization project appear to be related to proposed actions in the Draft SWEIS. Examples include: the manufacture of tritium targets on site for NIF; development of a diagnostic to enhance readiness to conduct a full-scale nuclear test (involving tritium); and, new experiments proposed for the

38

Tri-Valley CAREs
Page 39 of 63

NIF. The latter would include the construction of special target chambers in Building 331 that would then be transported to NIF and, following the shot, returned to Building 331 for further diagnostic analysis and preparation for final transport to the Nevada Test Site for burial.

Please discuss the relationship between the activities that are part of this categorical exclusion and the proposed actions in the Draft SWEIS.

63/31.09 cont. The categorical exclusion for the Tritium Facility Modernization project is date stamped March 20, 2003. The approval is date stamped March 25, 2003. Has any funding been obtained to begin carrying out its listed activities?

Please explain the term line-item in reference to the statement that the "line-item-funded" budget is $12 million. Is $12 million the total budget for all activities listed in the categorical exclusion? If not, please provide the total estimated budget to carry out all activities listed in the categorical exclusion from its inception in 2003 to its completion.

Have any of the activities listed in the categorical exclusion begun? Please describe which activities, if any, have begun and whether any of the activities are complete. Please provide an itemized list and timeline for carrying out all of the activities that are part of the Tritium Facility Modernization project.

d. DOE Must Revise the Accident Analysis Used in the Draft SWEIS

Tri-Valley CAREs has concluded that the accident analysis in the Draft SWEIS is deficient, and considerably underestimates the consequences of a major accident to the public and the workers. In fact, it does not provide the community or the agencies that are going to make a decision There are several reasons for this:

66/25.08 Airplane Analysis: The airplane crash scenario assumes that only a small single engine aircraft would be involved in an accident. The analysis only included airfields within 22 miles, thereby excluding commercial jet liners originating from San Jose, Oakland, San Francisco International Airport, Sacramento, and military aircraft originating from Moffett Airfield. These airports are all within 50 miles of LLNL. The airplane accident scenario needs to be recalculated, assuming that a commercial airliner crashes into one of the buildings. Assuming a large plane crash may dominate bounding accident scenarios for all populations. Under unfavorable meteorological conditions, the probability of an air crash would increase. This is not reflected in the accident scenarios.

67/25.05 Non-Cancer Effects: Only latent cancer fatalities are reported. In fact, if any of the accidents were to occur, there would be other severe effects that would result, including non-lethal cancers and a number of diseases. Because of the long-lived isotopes involved in some scenarios, (e.g., highly enriched uranium and plutonium) the residual risks of disease from an accident would last centuries. The accident analysis does not appear to consider this. This is also discussed in our comments on health and safety.

68/25.06 Economic Costs Need to be Included: There is no analysis of the cost of an accident that spreads radiation outside of the Lab. This is vital in weighing the alternatives. The Liv-

Tri-Valley CAREs
Page 40 of 63

ermore Lab is situated in a residential area, and Site 300 in an area that is rapidly becoming more residential. Both sites are bounded by rich agricultural regions. A major accident could have enormous economic consequences, not only for rebuilding the parts of LLNL that were involved, but cleaning up areas outside the Lab, relocating residents, lost agricultural capability, and monitoring health of affected residents. For comparison sake (there really is no good comparison) the accident at Three Mile Island has cost over $1 billion for cleanup. In addition, the reactor (costing hundreds of million dollars), which had only been used for approximately one month, was entirely written off.

68/25.06 cont. Accident Frequencies: Derivation of accident frequencies, except for the small airplane crashes, is not provided. Often these frequencies are given as a range with no explanation. Because accident frequency is so important in measuring the potential consequences of alternatives, we strongly believe that this variable should be explained in detail for all scenarios. We request that a section be added to the Appendix detailing how accident frequencies are derived.

Earthquake Scenario: While we note that the earthquake scenario assumes a 1 g ground surface acceleration (as opposed to 0.6 g used in the Environmental Assessment for the BSL-3 facility), we also note that a 1991 study by Geomatrix Consultants concluded that spectral acceleration of up to 2.5 g is expected in structures experiencing only 2 percent damping over Type Two Soil during a ground acceleration of 0.9 g. Therefore we are concerned that even the g-force number in the SWEIS may still underestimate the destruction that may occur at the Livermore Lab. In addition, 108 Buildings at LLNL have potential seismic difficulties. 12% of buildings at LLNL do not comply with federal seismic standards. 22 have unacceptable seismic risks. 41 need "detailed evaluation" to determine the seismic risk level, including buildings where they conduct genetic modification of bio-agents.

69/25.07 DNFSB's Critique of LLNL Accident Modeling: Historically, the Defense Nuclear Facilities Safety Board (DNFSB) has criticized LLNL's nuclear operations, particularly (but not exclusively) regarding the plutonium facility (Building 332). As mentioned, most recently the DNFSB (April 2004) strongly criticized LLNL's accident analysis. In part, the report states "LLNL is pursuing a new approach to accident analysis in that potentially harmful consequences to the public are mitigated by the structural boundaries of Building 332, which is assumed to reduce the unmitigated release of radioactive materials. In the past, Building 332 relied on a safety-class active ventilation system to ensure that the radioactive materials released during an accident, such as a fire, would be forced through a series of high-efficiency particulate air (HEPA) filters before being released to the outside environment. Under LLNL's new approach, it is assumed that the building's leak paths would physically reduce the release of unfiltered contaminated air from the facility."

Furthermore, a previous letter on March 25, 2003 stated that the "inadequacies included postulated accident scenarios for which unmitigated consequences had been evaluated to exceed the off-site evaluation guidelines, but for which no safety-class controls had been identified."

Tri-Valley CAREs
Page 41 of 63

69/25.07 cont. In the bounding accident for Building 332, (unfiltered room fire), certain assumptions are made -- such as an airborne release fraction (i.e., the amount that would disperse into the air as a result of this accident scenario) (ARF) of only 0.00005 and the Leak Path Factor (LPF) of only 0.05. We believe that a more conservative approach is to assume the leak path factor is between 0.5 and 1. (In its 2004 letter to NNSA, the DNFSB also criticized the LPF calculation, noting that the "calculated LPF of 5 percent is unrealistic and probably underestimates the extent of a release from unfiltered radioactive material from this facility.") We also question how the ARF was derived. These variables are fundamental in deriving health effects, and each should be clearly stated for each accident, and all assumptions should be clearly stated. Moreover, the accident scenarios, when redone with less optimistic assumptions, should be re-circulated in draft form for public comment.

70/25.01 Emergency Generator Failures: Buildings 331 (tritium facility) and 332 (plutonium facility) have emergency diesel generators (EDGs) to provide power in the event of an interruption in power supply. These systems would supply pressure for water, ventilation, and actuate other emergency equipment. During the 1990's, the EDGs at B-332 failed routine tests five times. The accident scenarios should not presume that the EDGs will be working, both to run the ventilation system and other emergency equipment. Therefore, all accident scenarios should assume a loss of total power. This affects the fire suppression system, alarms, and security doors. A credible scenario of an unfiltered fire with no power should be analyzed. (Note that the DNFSB criticized LLNL for downgrading the safety status of the emergency power supply (EPS) at Building 332 in its April 11, 2002 letter, stating that i.e., "The staff observed at LLNL a fundamental lack of understanding of system vulnerabilities in the Building 332 EPS").

71/30.01, 30.02 Terrorist Threats / Sabotage: None of the intentional acts that could cause a release (e.g., terrorist attack, theft, sabotage, disgruntled employee) are analyzed in this document. Instead, DOE states that this is a separate analysis and is classified. While we understand that there is some need to classify some information regarding terrorist attacks and security, we are very concerned that all scenarios were not covered and that inadequate assumptions were made. The Draft SWEIS also should discuss the range of scenarios that it analyzed, and provide at least a qualitative consequence analysis. This method is recommended by the DOE Office of NEPA and Policy Compliance, Recommendations for Analyzing Accidents Under NEPA, Final Guidance, July 2002.

72/25.01 Need for New Bounding Accident: The unfiltered room fire is the bounding accident for Building 332. Yet, a hydrogen deflagration accident has nearly five times the source term, and a greater estimated probability. Please conduct a detailed analysis of this scenario.

Moreover, the current bounding accident scenario for Building 332 is the unfiltered fire in one room, with a material at risk of 60 kg of plutonium. However, the administrative levels allow 60 kg in each of two rooms. The detailed analysis of a plane crash does not provide the material at risk number, but we would think that it would be 120 kg of pluto-

41

Tri-Valley CAREs
Page 42 of 63

72/25.01 cont. nium. If this is correct, would the plane crash become the bounding scenario? Please evaluate.

HEPA Filter Failure: HEPA filters are assumed to mitigate most accident scenario releases. However, during a fire, both the filter and the seal are prone to failure, as the filter is made of fiberglass paper and would lose its filtering capability when wet (fire suppression) and would be severely damaged by high temperatures. (See also the attached declaration of Marion Fulk, staff scientist, LLNL, retired).

Fire with Highly Enriched Uranium: A fire in Building 334 involving highly enriched uranium is not analyzed in detail. Because 100 grams are the source term, we recommend performing a detailed analysis of this accident scenario.

73/25.06 Environmental Effects: The Draft SWEIS fails to document and take account of environmental effects in its accident analysis. This is recommended by U.S. DOE Office of NEPA Policy and Compliance, Recommendations for Analyzing Accidents Under NEPA, July 2002, p. 3. This omission must be remedied.

Incorporate Project Lifetime into Probability Calculations: The U.S. DOE Office of NEPA Policy and Compliance, Recommendations for Analyzing Accidents Under NEPA (p.9) recommends that the analysis should consider probability of an accident occurring over the lifetime of the project. Project duration does not appear to be part of the description of projects evaluated. We recommend that project duration be identified and factored into the accident analysis.

74/25.05 Effects of Increased Radioactive / Biological Materials in Accident Scenario: Would the increases in the amount of plutonium storage and plutonium and tritium material at risk limits pose any additional concern regarding the BSL-3 proposal? For example, if the worst-case accident occurred at Building 332 or Building 625, please detail how hazardous materials or biological agents would be secured while personnel in other buildings were being evacuated.

75/17.07 Serious Wildfire at Site 300: For Site 300, it does not appear that a massive wildfire has been analyzed. This would be a fire that could not be controlled by the fire fighting force. This scenario has been brought up in public comments on the Site 300 Site Wide Record of Decision. Please include an analysis of this possibility in the SWEIS.

e. The Emergency Response and Security Section Needs Additional Information

76/30.01 There is little information on how the Superblock (Buildings 332 and 331)will be guarded in case of internal fire, biological release from bio-terrorism facility and/or other security-related scenarios. We are very concerned that security systems and personnel are not adequate to prevent intentional releases. The SWEIS needs more detail about the security force, its training, and what types of equipment are available to it. Moreover, the SWEIS must discuss the pattern of security deficiencies at LLNL that have been investigated and reported over the last several years by the

42

Tri-Valley CAREs
Page 43 of 63

76/30.01 cont. DOE Office of the Inspector General, the General Accounting Office and other agencies. (Attachment 29)

Please explain how radioactive materials, especially plutonium and highly enriched uranium, will be secure when transported and used outside of the Superblock. Several buildings (e.g., NIF, Building 239) will have sufficient quantities of these materials to require a discussion of security outside the Superblock.

77/29.01 Regarding Table 4.4.1.1-1 Summary of Emergency response 1999 -2002, there are between 60 and 70 calls regarding hazardous materials each year. This indicates potential problems. Please categorize the types of incidents involved and how they were addressed.

f. Transportation Analysis Must be Expanded

78/20.01 LLNL ships approximately 4000 containers per year of hazardous and radiological waste to approximately 50 different treatment, storage or disposal facilities across the U.S. in about 500 shipments of waste per year. The Draft SWEIS does not provide detailed information on these shipments and we believe these significant shipments of waste should be reviewed in more detail.

79/36.01 The Draft SWEIS should disclose what roads are used for the radioactive material shipment and outline how proposed transuranic waste shipments will travel from Berkeley to Livermore. How often will shipments occur and will local residents be notified when they will occur? Will shipments occur during peak traffic hours or during night time off-peak hours? Are the shipments secured from a terrorist attack? How will these shipments be protected as they travel through densely populated urban areas?

g. The DOE Must Address the Risks of Shifting from Double-Walled Trupact-II Containers to Single-Walled Trupact-III Containers.

80/20.05 On April 30, 2002, NRC issued a proposed rule that would eliminate 10 CFR 71.63(b)'s double containment requirement for transuranic (TRU) waste shipments. A March 15, 2004 Department of Energy news release indicates that DOE is considering using a new single-walled waste transportation package for shipments to the Waste Isolation Pilot Plant. PacTech Corporation has sought approval of the new single-walled Transuranic Package Transporter Model III (TRUPACT-III). DOE submitted a Class 3 Permit Modification Request (WIPP HWFP #NM4890139088-TSDF) seeking "container management improvements" at WIPP. TRUPACT-III containers are mentioned several times in this request.

NEPA regulations require agencies to address and evaluate reasonably foreseeable adverse effects on the environment, even when there is incomplete or unavailable information (40 CFR 1502.22). DOE's NEPA Implementing Procedures require that the DOE "identif[y] and assess the individual and cumulative impacts of …reasonably foreseeable future actions at a DOE site" (10 CFR 1021.104). DOE and NRC's attempts to change federal regulations on TRU containers constitutes a reasonable indicator that future actions deserve discussion in the SWEIS.

According to a report issued by the Environmental Evaluation Group (EEG), TRUPACT-III containers present substantial dangers compared to the current TRUPACT-II containers. TRU-

43

Tri-Valley CAREs
Page 44 of 63

PACT-II containers have 1/4 to 3/8 inch steel barriers, as well as a second internal wall, which provides additional shielding. The new TRUPACT-III containers feature only a single wall, which, if punctured, would create a substantial risk to the environment and to human health. Public confidence in the safety of TRU shipment would be eroded if the double-walled containers were no longer required. (Attachment 30)

The EEG report details both the dangers of accident-free doses resulting from normal shipments and the dangers of transportation accidents. EEG is an independent technical oversight group assigned to the New Mexico Institute of Mining and Technology and funded by DOE. EEG's work is directly relevant to the hazards associated with the proposal to ship more than 1000 drums of waste from LLNL to WIPP and should therefore be considered in the Draft SWEIS.

80/20.05 cont. With regard to accident-free shipments, the report predicts that single-walled containers would increase on-site doses by 6.8% (EEG, p. 14). Doses to truck drivers would more than double with single-walled containers (EEG, p. 15). The dose to the public en route would increase by 37 to 52 person-rem (EEG, p. 15). All in all, double containment reduces the collective doses at WIPP by 45 to 62 person-rem (EEG, p. 16).

With regard to transportation accidents during shipment to WIPP, the EEG report predicts substantial danger to human health, as well as economic costs in the millions (EEG, p. 34). Shifting to the single-walled TRUPACT-III would make shipments more susceptible to both accidents and terrorist attacks (EEG, p. 39).

Eight governors of Western states also expressed concern about the potential change. In a March letter to the NRC, the governors of California, Arizona, Nevada, Oregon, Utah, Washington, Wyoming, and New Mexico asked for a rejection of the proposed shipping rule change. (Attachment 31)

The Draft SWEIS makes no mention whatsoever of the foreseeable use of TRUPACT-III containers for packing LLNL waste. LLNL plans to transport 1,000 drums of TRU to WIPP in 24 shipments, plus smaller annual shipments after 2004 (4.13.5: "Hazardous and Radiological Shipments"). Lawrence Berkeley National Laboratory (LBNL) plans to ship fourteen 55-gallon drums of TRU to LLNL, and then from LLNL to WIPP (3.3.16: "Berkeley Waste Drums").

The Draft SWEIS says that TRUPACT-II is typically used for such shipments, but the SWEIS does not disclose that this is likely to change if NRC approves TRUPACT-III for TRU shipments. It is inappropriate for the Draft SWEIS to omit discussion of this controversial change.

Assuming the use of TRUPACT-II for TRU shipments, the Draft SWEIS calculates the risks associated with the shipment of TRU waste. Under the Proposed Action, TRU shipments would add a collective does of .69 person-rem per year (Table 5.3.11.2-1.); under the No Action Alternative, TRU shipments would add 1.0 person-rem per year (Table 5.2.11.2-1.); under the Reduced Operation Alternative, TRU shipments would add .54 person-rem per year (Table 5.4.11.2-1.). Based on the EEG report, these numbers would substantially increase if TRUPACT-III were used instead of the safer TRUPACT-II. These statistics must be recalculated in the

44

Tri-Valley CAREs
Page 45 of 63

SWEIS with regard to the possibility of using TRUPACT-III for transportation, and then resubmitted for public comment.

80/20.05 cont. The DOE promises to "conduct transportation operations in accordance with Federal and state regulations and will maintain procedures to ensure operations are safe" (5.6.12: "Traffic and Transportation"). It is disingenuous for DOE to assert compliance with federal regulations while simultaneously trying to change those same regulations by seeking NRC approval of TRUPACT-III containers.

Therefore, we ask that DOE address the likelihood of a shift from the TRUPACT-II containers to TRUPACT-III containers. DOE should also address the increased risks resulting from TRUPACT-III, as well as any other concerns raised by the EEG report.

The EEG report, which was funded by the DOE, should betaken into consideration when determining what is a safe packaging requirement. Please analyze and incorporate this report into the final document.

h. DOE Should Provide a More Complete Analysis of Releases and Risks to the Workers and Surrounding Community Populations

81/23.02 There are nearly 10,000 employees at LLNL. Many of the major proposals in the Draft SWEIS will result in significant worker and community exposures to radioactive and hazardous releases. Exposure under normal operations for the proposed action, as shown in Table 5.3.14.1-1, increases the lifetime risk of a latent cancer fatality (LCF) to an involved worker from approximately 5 in 100 to 8 in 100, while the reduced action decreases it to 2 in 100. Tri-Valley CAREs believes that these risk levels are unacceptable. Also, the SWEIS must set forth specific mitigation measures to be used to reduce these risks.

Regarding Table 5.3.14.1-1 and similar Tables, are the latent cancer fatalities (LCFs) given by year, 10 years or by the life of the project? If the life of the project, please state the assumption as to life expectancy of the project. Also, are the data in the table stated as an annual dose at maximum operations levels? Are the doses calculated at maximum dose rates for each operation at the Lab?

Under the No Action Alternative, tritium emissions at the LLNL main site will increase from 30 curies per year to 210 Ci per yr. (p.5.2.-26). Routine maintenance of NIF under No Action could release another 30 Ci. These levels of releases are unacceptable to Tri-Valley CAREs. Also, the SWEIS should state whether those levels (210 plus 30) are additive, or has the 30 been included in the 210? (See also our comments regarding the use of a categorical exclusion for the Tritium Facility Modernization project.)

82/20.01 All transportation under the proposed action will increase to 4 in 100,000 risk of an additional latent cancer fatality. This level is unacceptable. In other places, the document states that this is essentially no additional cancers. The U.S. Environmental Protection Agency (EPA) range of acceptable cancer risk (not fatalities) is one case in 100,000 to one case in one million. Tri-Valley CAREs has consistently supported the more stringent level as is applied to groundwater cleanup. Regulatory agencies agree that the more stringent level is the point of departure, unless

45

Tri-Valley CAREs
Page 46 of 63

there are reasonable measures taken to prevent additional cancers from occurring. In addition, as we will discuss in our comments on Health and Safety, no other health impacts are assessed in this document, thereby making the analysis inadequate.3

82/20.01 cont. Regarding the above discussion, Appendix B (Waste Management) notes that the risk of a latent cancer fatality from transporting waste is 4 in 1,000 for the no action and proposed action, one in one thousand for the reduced option, as opposed to 9 in 10,000 for existing conditions. Please explain the discrepancy with the above comment. Additionally, as stated above, the U.S. Environmental Protection Agency (EPA) range of acceptable cancer risk (not fatalities) is one case in 10,000 to one case in one million.

The SWEIS does not disclose what roads are used for the radioactive material shipment. In addition to the routes transuranic wastes will travel from Berkeley to Livermore, what are the considered routes to Savannah River Site, WIPP and Hanford? How often will shipments occur and will local residents be notified when they will occur? Will shipments occur during peak traffic hours or during nighttime off-peak hours? Are the shipments adequately secured from a terrorist attack?

83/25.05 In the accident section and other sections of this report, latent cancer fatalities are given. However, these are not the only consequences from exposure to radiation and/or toxic materials. If any of the accidents or exposures were to occur, there would be other severe effects that would result, including non-lethal cancers and a number of diseases. Again, because of the isotopes involved, (e.g., highly enriched uranium and plutonium) the residual risks of disease from an accident would last centuries. The Draft SWEIS fails to provide information on these disease responses and therefore, decision makers in turn often fail to consider them. The SWEIS needs to include this crucial information.

84/25.07 DNFSB Reports That Should be Incorporated into the SWEIS: DNFSB monitors the nuclear activities of LLNL. The Board has made a number of critiques and suggestions over the years that should be incorporated in the SWEIS to improve future operational safety at LLNL. We note that as far back as 1995, the DNFSB recommended shutdown of plutonium building after important safety measures were missed (the facility was shut down for 6 months). (Attachment 32)

The Defense Nuclear Facilities Safety Board Chairman, John Conway, wrote that the number of infractions at Building 332 "raise questions as to whether DOE-OAK is staffed with the technical capabilities necessary to provide guidance" and that "neither DOE-OAK nor LLNL management appears to recognize or fully appreciate all of the problems of hazardous work control" (Letter from John T. Conway, Chairman of the DNFSB to Frederico Pena, Secretary of Energy, December 31, 1997).

The DNFSB also criticized vulnerabilities at Building 332 from single-point failures. That is, one system could lead to a failure of the built-in safety systems. In its letter of April 11, 2002, the DNFSB stated "– "The main issue outlined in the Board's letter of December 21, 1999, to DOE was the vulnerability of the Building 332 EPS [emergency power system]to singlepoint failures that would trigger the subsequent loss of one or more of the four separate downstream safety-class systems requiring emergency power. The staff observed that single- point failures still exist in the present EPS, including the

46

Tri-Valley CAREs
Page 47 of 63

84/25.07 cont. example explicitly cited in the Board's previous letter. Furthermore, it appeared that the laboratory has made few tangible attempts to remedy system vulnerabilities associated with single-point failures." The letter concluded that "The staff observed at LLNL a fundamental lack of understanding of system vulnerabilities in the Building 332 EPS."

The SWEIS should incorporate these various letters and address the concerns that they raise.

85/25.06 Incorporate Human Error into Release Calculations: Accident analysis assumes an extreme event occurring. Under normal operations, it appears in the Draft SWEIS that the only releases and consequent exposures are planned events. Unfortunately, this is not how LLNL operates. There is a middle area where consistent human error causes unplanned but foreseeable releases to the environment, the worker population and to the public. Last October provides but one example: 12 workers were potentially exposed when a portion of the power for Building 332 was shut down. Plutonium in the glovebox should have been sealed; yet, workers eight years ago had decided not to replace the seals on the glovebox containing the plutonium. Because the vent system did not maintain negative pressure during the power outage, there was a leak. We note as well that many of the tritium accidents at LLNL have been attributed to human error and/or management or training failures. In fact, we note a longstanding pattern of these accidents involving numerous radioactive and hazardous materials. Taken together, these have caused us to question the training and safety of the Livermore Lab.

It further leads us to believe that taking on additional plutonium and raising the plutonium and tritium material at risk limits are a mistake -- and all the safety implications must be fully evaluated and considered before doing so.

The SWEIS as it is now written, does not reflect the culture that led to a history of human error and safety violations. We have documented at least 30 releases of radioactive materials to the environment (not including the numerous accidents with tritium), and approximately 40 reports, incidents or violations that could have led to releases. Most of these were due to human error. The SWEIS should plan for and incorporate the results of accidental but foreseeable and highly probable human error that will occur in the future and think creatively about mitigating it, rather than turn a blind eye to its inevitability.

86/23.01 Plutonium in Livermore City Park: The SWEIS should discuss the past releases from LLNL into the community. Plutonium has been found in significant amounts at Big Trees Park, in proximity to the LLNL main site. This is of significant concern to the public but it is not described as an environmental impact in the Draft SWEIS. This is especially important because LLNL is planning to more than double its plutonium inventory, the DOE should look at LLNL's history of operations and releases in determining whether LLNL is an appropriate site to house these materials.

87/24.04 The LLNL Environmental Monitoring Program: The SWEIS should consider the possibility that LLNL's environmental monitoring program may be missing radiation from LLNL activities that is escaping into the community. Radiological analysis of twelve ini-

47

Tri-Valley CAREs
Page 48 of 63

87/24.04 cont. tial samples collected outside the LLNL fence line by The RadioActivist Campaign show that the community may be subjected to radiation that is in excess of is officially reported by LLNL. Of the twelve samples, TRAC found elevated levels of radioactivity in seven. The four radionuclides discovered in excess in the samples are: iron-59, strontium-90, cesium-137, and americium-241. The highest concentrations found by TRAC was in grass to the east of LLNL, contaminated with strontium-90 at 270 picocuries/kilogram(wet). The initial report is available on the web at www.trivalleycares.org. the report's implications should be discussed in the SWEIS. A final report, following additional sampling, is due from TRAC in September 2004.

i. The Proposed Expansion Violates the Endangered Species Act and Threatens Federal and State Listed Species.

88/16.02, 16.03 The Endangered Species Act (ESA) protects "any species which is in danger of extinction throughout all or a significant portion of its range." 16 U.S.C. § 1532(6). ESA also gives protection to threatened species: "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." 16 U.S.C. § 1532(20). NEPA also affords consideration to candidate and proposed species. The Draft SWEIS has failed to adequately address and consider the effect on species of the expansions at LLNL main site and Site 300. The area surrounding and including the sites contain numerous endangered and protected species. The Draft SWEIS indicates that there are at least 124 federally and state-listed threatened, endangered, and other special status plant and animal species known to occur at the Livermore Site and Site 300 in 2001 and 2002. The Draft SWEIS claims LLNL operations will only affect a handful of them, but there is no explanation for why it only considers a few of the 124 species listed in table E.2-1. (Appendix E-39).

Relevant Species at the LLNL Main Site: LLNL contains two important species to be considered by the Draft SWEIS. The first is the California red-legged frog (*Rana aurora draytonii*), a federally listed threatened species (61 FR 25813 et seq.) that has been seen in numerous places on the LLNL site. Additionally, several places on LLNL grounds were considered critical habitat prior to a 2002 court order. However, on April 13, 2004 USFWS re-proposed critical habitat for the red-legged frog. (http://sacramento.fws.gov/ea/news_releases/2004%20News%20Releases/California_red-legged_frog_Crit_Hab_Reproposed_NR.htm). It is therefore reasonably foreseeable that re-listing of critical habitat could occur within the period covered by the SWEIS and should therefore be discussed in detail. (Attachment 33)

The second important species listed in the Draft SWEIS is the California tiger salamander (*Ambystoma californiense*), a federally listed proposed threatened species (68 FR 28649) that has been seen in the vicinity of LLNL just 1100 feet away. (Appendix E-46) It is therefore reasonably foreseeable that the tiger salamander could be spotted on the LLNL site within the period covered by this SWEIS, and must therefore be discussed in the biological assessment.

Relevant Species at the LLNL Site 300: Site 300 contains numerous species to be considered by the Draft SWEIS. The red-legged frog and the tiger salamander have been spot-

48

Tri-Valley CAREs
Page 49 of 63

ted throughout Site 300, and 60% of the site is critical habitat for the frog. (Appendix E-18). The Alameda Whipsnake (*Masticophis lateralis euryxanthus*), a federally listed threatened species (62 FR 64306) has been seen at Site 300, which contains the constituent elements of the Alameda Whipsnake's critical habitat (Appendix E-68). USFWS could reinstate the snake's critical habitat at Site 300. There are also 24 species of birds that are Federal species of concern or State species of special concern (Appendix E-26), as well as a population of nesting raptors (Appendix E-25). The large-flowered fiddleneck (*Amsinckia grandiflora*), a Federally and state-listed endangered species (50 FR 19374), can also be found on Site 300 in critical habitat near building 858. (Appendix E-70). The San Joaquin kit fox (*Vulpes macrotis mutica*) a Federally endangered (32 FR 4001), state threatened species, has been seen in the vicinity. (Appendix E-70). The Valley Elderberry longhorn beetle (*Desmocerus californicus dimorphus*) a Federally threatened species (45 FR 52803) has been detected in the vicinity, and there are signs that it has been on the Site. (Appendix E-70). The Swainson's Hawk (*Buteo swainsoni*), a state threatened species, was seen on the Site's southern perimeter in 1994, and it probably forages on Site 300 grounds. (Appendix E-71).

The Draft SWEIS only discusses in detail the first three species listed here, but the ESA requires a more in-depth biological assessment given the range of species found on the grounds. DOE cannot simply brush aside these species by unsubstantiated assertions that the impacts are negligible. As such, the current biological assessment in the Draft SWEIS is methodologically incomplete.

88/16.02, 16.03 cont.

The Draft SWEIS mentions that Peregrine falcons have been detected at Site 300 during season surveys but states in a bare conclusory fashion that "[b]reeding pairs are not anticipated to occur on the property". We assert that the SWEIS should study the impacts of the proposed activities on the Peregrine falcon, a recently de-listed species but one that is being monitored carefully.

The Effect of the Proposed Actions on These Species at the LLNL Main Site: The biological assessment makes no mention of any allowed incidental take at the LLNL main site, so no leeway should be granted for proposals that risk harming protected species. Additionally the biological assessment fails to discuss the impact on the tiger salamander at LLNL. The entirety of the assessment discusses only the red-legged frog. Yet the salamander is in close proximity to the lab (within 1100 feet, Appendix E-46), and it is reasonably foreseeable that the salamander could be found on the grounds. Additionally, the biological assessment does not indicate that any detailed survey was done with regard to the salamander, so the claim that it has not found them may be a case of LLNL simply not looking hard enough.

Moreover, the specific plans detailed in Appendix E risk serious harm to the red-legged frog. We have outlined the harms in the following paragraphs.

First, the ongoing Arroyo Las Positas Maintenance Project occurs in an area that is full of red-legged frogs (Appendix E-51). Yet the project would remove 20% of Typha wetland vegetation, a potential critical habitat area for the frogs (Appendix E-48). Heavy equip-

49

Tri-Valley CAREs
Page 50 of 63

ment will be used to remove some growth in the arroyo, as well as for erosion repair and stabilization measures (Appendix E-51). Cuttings and debris for willow stand removal will also require heavy equipment like front-end loaders, and typha cutting would use riding mowers in the red-legged frog habitat. Weed-whackers and tractors would be used on the upper banks (Appendix-51). In light of the extensive work done with heavy machinery, LLNL's assertions of low take are not biologically substantiated. On-site biologists' ability to monitor these actions would be very limited due to the scope of the proposed maintenance.

Second, the maintenance of other onsite drainage systems (DRB, B571 Wetland) could endanger the frogs, which have been found in the DRB (Appendix E-52). Vegetative growth removal and sediment removal would use heavy machinery like backhoes, as would the installation and removal of culverts (Appendix E-52). LLNL would attempt to mitigate this damage by relocating discovered frogs to the arroyo, but it may be too late after the use of the not-so-delicate backhoe. Additionally, this mitigation strategy puts too much faith in a workers ability and desire to differentiate between the red-legged frog and the other non-protected species in the DRB. Finally, DRB could also be assigned critical habitat status for the red-legged frog in the future (see figure E.2.1.5.2-1., Appendix E-54).

88/16.02, 16.03 cont.

Third, the bullfrog management activities could harm the red-legged frog. Each of the three methods for killing bullfrogs could easily wind up killing the red-legged frog. Gigging and high-powered air rifles are currently used, but the SWEIS does not say that the people doing so are trained in biology, or whether they can tell a red-legged frog from a young bullfrog (Appendix E-55). Dewatering the DRB would also endanger any red-legged frogs in the DRB (Appendix E-55, E-52). Finally, rotenone use would be just as dangerous for the red-legged frogs as for the bullfrogs because "Rotenone works by inhibiting the biochemical process at the cellular level making it impossible for fish, amphibians, and aquatic insects to use the oxygen absorbed in the blood and needed in the release of energy during absorption." (Appendix E-56). This process would endanger red-legged frogs regardless of the time of application of the poison. There is no precision for determining amphibian metamorphosis, and when threatened species are being dealt with - the risk of externalities is too high.

Fourth, construction-related activities for a number of LLNL SWEIS projects would disturb 462,000 square feet of undeveloped area, potentially near frog habitat.

Fifth, maintenance of security buffers components would occur in areas located in critical habitat designated for the red-legged frog. Perimeter fence maintenance would occur in formerly-designated critical habitat, so the SWEIS must address the probability of future re-listing in that area (Appendix E-61). The SWEIS makes no mention of what tools would be used for these maintenance projects. Heavy equipment could destroy critical habitat, or red-legged frogs themselves.

Sixth, the decontamination and demolition of facilities, specifically buildings 171, 292, and 514, could threaten the red-legged frog. Building 171 is currently a hazardous waste

50

Tri-Valley CAREs
Page 51 of 63

accumulation facility (Appendix A-46). Building 292 is contaminated with tritium (Appendix A-116). Building 514 is a liquid waste storage and wastewater treatment facility, with potentially toxic levels of metals, oils, and solvents. Overpressurized containers at Building 514 may also be hazardous (Appendix A-97-98). The dangers these buildings could cause to the frogs if improperly decontaminated demands further discussion in the SWEIS. The SWEIS also concedes that there is a chance of direct mortality from the demolition of the buildings. (Appendix E-61).

Seventh, maintenance of facilities, paved roads, and utilities could also require new NEPA analysis and therefore new ESA analysis. (Appendix E-57). These projects could occur anywhere on the grounds, including areas that are within the "dispersal capability" of the red-legged frog (Appendix E-61). The existing discussion in the SWEIS is too open-ended and unspecific.

Eighth, landscaping and grounds maintenance could endanger critical habitat without substantial biologist oversight (Appendix E-57). Again, these projects could occur anywhere on the grounds, including areas that are within the "dispersal capability" of the red-legged frog (Appendix E-61). The existing discussion in the SWEIS is too open-ended and unspecific.

88/16.02, 16.03 cont.

Ninth, application of herbicides would threaten red-legged frogs and critical habitat (Appendix E-57). The SWEIS does not say exactly where application would occur but it admits it would occur around the security fences and perimeter, an area of red-legged frog habitat. Additionally, there are multiple dangers associated with herbicide use, especially wind, overdose, and habitat contamination via waterflow. These concerns are not adequately addressed in the SWEIS.

Tenth, the invasive species control program would pose the same threats to red-legged frogs as those discussed above on the bullfrog issue.

Eleventh, vehicle traffic would increase with the job growth anticipated under the proposed action. Heavy travel occurs both on and around the lab (SWEIS 4.13.2). The SWEIS concedes the danger of traffic to red-legged frogs (Appendix E-62). It is not much of a mitigation to claim that the traffic will be mostly during the daytime, since juvenile red-legged frogs and some adult red-legged frogs are active during the day. (http://sacramento.fws.gov/es/animal_spp_acct/red_legged_frog.htm) Other sources indicate that the red-legged frog is primarily diurnal. (http://animaldiversity.ummz.umich.edu/site/accounts/information/Rana_aurora.html). There would also be some amount of traffic at night. (Attachment 34)

The Effect of the Proposed Actions on These Species at the LLNL Site 300: Site 300's current incidental take allowance from USFWS is 25 red-legged frogs and 5 Alameda whipsnakes. Yet the SWEIS concedes that extra projects at Site 300 will not meet that limit, and will require additional conferences with USFWS (Appendix E-72-73). NNSA should address how it will proceed if it is denied extra take by USFWS. The absence of such a reasonably foreseeable occurrence makes the draft SWEIS incomplete.

51

Tri-Valley CAREs
Page 52 of 63

Moreover, the specific plans detailed in Appendix E risk serious harm to the California red-legged frog, the California tiger salamander, and the Alameda whipsnake, as outlined below.

First, the SWEIS concedes that grading and maintaining fire trails could result in direct mortality of Alameda whipsnakes (Appendix E-90).

Second, the ongoing program of maintenance of the storm drainage system could kill both red-legged frogs and tiger salamanders (Appendix E-83, E-94). Backhoes will be used for culvert maintenance, and heavy equipment will be used for debris removal (Appendix E-73). This equipment could result in direct mortality to these threatened species.

Third, Site 300's plans for improving and installing culverts could also harm both red-legged frogs and tiger salamanders, which live in ponded areas (Appendix E-84, E-95). Three of the four installation sites for culverts will be in red-legged frogs' critical habitat. Since the reinstatement of critical habitat is a reasonably foreseeable occurrence, the SWEIS should discuss this project more specifically in the context of the potential re-listing of critical habitat.

88/16.02, 16.03 cont.

Fourth, the prescribed annual burning could have huge impacts on all three species. Prescribed burns would occur over 620 acres of red-legged frog critical habitat, and 385 acres of Alameda whipsnake critical habitat (Appendix E-75-76). Whipsnakes are likely to be within 400 feet of the fires (Appendix E-90). Also, Song Pond, a known breeding habitat for the tiger salamander, is in the path of a prescribed burn (Appendix E-94).

Fifth, the termination of surface water releases from Buildings 827, 851, and 865 would significantly destroy red-legged frog breeding grounds. The release at Building 865 is home to three breeding pools for red-legged frogs (Appendix E-79). The pools are a known breeding ground, and biologists have seen frogs there for the last six years (Appendix E-84). The proposed relocation site at the SHARP Facility is inadequate because that site contains unknown levels of tritium (Appendix E-99). The site also does not have the proper characteristics to serve as a red-legged frog breeding ground (Appendix E-100). The SWEIS should provide a detailed mitigation plan for how LLNL intends to ensure that the mitigation measures will be adequate. The SWEIS should explain how will the mitigation pond be designed and protected so that it may serve the functions provided by the original pond.

Sixth, construction related projects like the Energetic Materials Processing Center would endanger red-legged frogs. The processing center would be constructed on 40,000 square feet of red-legged frog critical habitat (Appendix E-86).

Seventh, the demolition of facilities at Site 300 could occur in critical habitat, and the SWEIS concedes that demolitions would kill any red-legged frogs or tiger salamanders in the area (Appendix E-86, E-95).

52

Tri-Valley CAREs
Page 53 of 63

88/16.02, 16.03 cont.

Eighth, maintenance of facilities, paved roads, and utilities would occur in the southwest portion of Site 300, which is suitable habitat for Alameda Whipsnakes (Appendix E-92). This maintenance could directly result in snake mortality. Additionally, the draft SWEIS says that most maintenance work would occur upland and therefore would not disrupt tiger salamanders (Appendix E-95). However, the prior page indicates that salamanders live in "upland refugia" (Appendix E-94). If this is true, it would mean that upland maintenance would threaten the tiger salamander. Please clarify whether California tiger salamanders live primarily upland or not, and what impact this location might have on their mortality under the proposed actions.

Ninth, the landscaping and grounds maintenance at Site 300 would present the same concerns as those mentioned in the prior paragraph.

Tenth, herbicide application would present significant risks. Application of herbicides could threaten red-legged frogs, Alameda whipsnakes, and tiger salamanders, and their critical habitats (Appendix E-87). The SWEIS does not say exactly where application would occur. There are multiple dangers associated with herbicide use, especially wind, overdose, and habitat contamination via waterflow. These concerns are not adequately addressed in the SWEIS.

Eleventh, ground squirrel control at Site 300 presents significant risks to all three species. The SWEIS does not explain what effect fumitoxin fumigant, traps, or zinc phosphide would have on the frogs, snakes, or salamanders (Appendix E-82). Nor is there any discussion of how poisoned squirrels might contaminate the food chain of other species including birds that forage at Site 300. The draft SWEIS is too dismissive of these concerns, and offers no explanation of why the risks are "negligible" (Appendix E-87, E-93, E-96). Common sense dictates that chemicals capable of killing squirrels are likely to also kill frogs, snakes, and salamanders.

Twelfth, vehicle traffic could also pose a danger to protected species. The SWEIS concedes that there is a possibility of red-legged frogs, Alameda whipsnakes, and tiger salamanders being killed by traffic (Appendix E-87, E-93, E-96). Additionally, the Advanced Test Acceleration drainage ditches adjacent to the road have large populations of red-legged frogs (Appendix E-87). The assertion that species are not likely to be affected because traffic occurs during the day may be biologically unfounded, as our preliminary research indicates that these species are at least somewhat active during the day. Alameda whipsnakes are diurnal. (http://sacramento.fws.gov/es/animal_spp_acct/alameda_whipsnake.htm). Other sources indicate that the red-legged frog is primarily diurnal. (http://animaldiversity.ummz.umich.edu/site/accounts/information/Rana_aurora.html). Moreover, the draft SWEIS concedes that power-intensive projects at LLNL will be conducted primarily at night, such as the experiments at the National Ignition Facility and at the Terascale Facility. This will increase the amount of traffic and employee activity at night, impacting species that are active primarily at night.

53

Tri-Valley CAREs
Page 54 of 63

88/16.02, 16.03 cont.

Thirteenth, explosives testing will occur daily to weekly (Appendix E-82). These tests could cause direct mortality of red-legged frogs, Alameda whipsnakes, and tiger salamanders, as well as some birds protected under the Migratory Bird Treaty Act (MBTA). There is little discussion of the impact of the explosions on these species. The SWEIS needs to explain whether explosions or their fallout would cause mortality to any protected species. It is overly dismissive of these concerns claiming that explosives would occur during the day when these species are not active. This seems almost comical. If anything will awaken nocturnal creatures, it's explosives testing. Additionally, these species are at least partly diurnal (see above). The SWEIS also concedes that "Diurnal raptors that forage directly over the facilities are the species most vulnerable to flying debris and shock overpressure; these include the golden eagle, prairie falcon, northern harrier, black-shouldered kite, ferruginous hawk, and red-tailed hawk. Smaller birds may also be affected." (Appendix E-36). Most of these species are protected under the MBTA and are California species of special concern, and the ferruginous hawk is also a Federal species of concern (Table E.2-1.). However, the biological assessment makes no mention of the effect of the explosives testing on them. The SWEIS should discuss the effects of the physical explosions, the effects to air quality, impacts resulting from the sound of the explosions and the hazardous substances subsequently dispersed and how they will specifically affect protected species populations. Regarding Site 300, please describe what is actually occurring in terms of releases of radioactive substances being used in shots, environmental testing of explosives assemblies or in other experiments. Note in this regard that the Draft SWEIS states that most shots would be fired on the outdoor firing tables "for the foreseeable future."

89/16.04

The LLNL Site 300 "could be judged one of the largest native grasslands of this kind currently known in California." Please describe if there are other comparable grasslands and the value of this land, particularly in view of the fact that resources of this type are becoming ever more scarce. Please determine if there are other sites where the explosives tests could occur that would allow this grassland to be preserved. We would like to see a cost-benefit analysis with alternative sites evaluated for the explosives testing.

88/16.02, 16.03 cont.

Fourteenth, the explosive process water surface impoundments and sewage oxidation pond activities could harm red-legged frogs and tiger salamanders, both of which have been seen in the overflow pond, and the salamander has been seen in explosives process water surface impoundments (Appendix E-97).

The Proposed Mitigations Are Inadequate: First, the Draft SWEIS frequently cites mitigation measures that were approved by USFWS. Many of these measures that were approved and coordinated by USFWS for LLNL were done so in 1998, 3 years prior to the listing of critical habitat in March of 2001 (Appendix E-64, E-68). If critical habitat is reinstated then LLNL cannot assume these same measures would pass muster under the stricter requirements for critical habitat. The SWEIS needs to discuss updated measures so that the regulators, legislators and community members can comment on the adequacy of the plans.

54

Tri-Valley CAREs
Page 55 of 63

Second, mitigation measures for the Alameda whipsnake are especially ineffective because they rely on identification, trapping, removal, and relocation, a highly unlikely scenario when workers are confronted with a snake (Appendix E-94). Such measures might work with the red-legged frog, but not with a snake. Please describe how LLNL plans to ensure worker compliance with the mitigation measures.

Third, the proposed breeding habitat at the SHARP Facility is inadequate because that site contains unknown levels of tritium. (Appendix E-99). The site also does not have the proper characteristics for a red-legged frog breeding ground (Appendix E-100).

88/16.02, 16.03 cont.

Fourth, many of the proposed mitigations require on-site observation by qualified wildlife biologists. However, few places mention whether this biologist would be a lab employee or an independent contractor. It is exceedingly important that wildlife training and mitigation be done by unbiased and disinterested parties. The SWEIS should detail the requirements and qualifications for any biologists involved in mitigation measures. Also, identify specifics of the mitigation strategy that will be employed and whether the destroyed ponds will be replaced by mitigations that are larger than the destroyed pond.

Moreover, at Site 300, the Tracy Hills development is planned approximately 2 miles from the site boundary. At the southern boundary there are ranches. With increased shots and tritium releases, DOE should address the issue of encroachment.

Proposed wetland mitigation measures are also inadequate. With regards to wetlands at LLNL Site 300, the proposed action terminates surface releases at Buildings 865, 851, and 827. The SWEIS states that this was coordinated with the USFWS and received approval contingent upon implementation of mitigation measures in a recent Biological Assessment and related Biological Opinion (Jones and Stokes 2001, USFWS 2002b). Please provide document submitted to the USFWS.

j. The SWEIS Should Include a Full Discussion of Superfund Issues

90/24.03

Both LLNL Site 300 and the main site are "Superfund" sites, covered by the rules and regulations regarding the Comprehensive Environmental Responsibility and Liability Act (CERCLA). This document has very little discussion of CERCLA issues, and makes the general statement that remediation (i.e., cleanup) will continue under all three alternatives. The document does recognize that by increasing the use of hazardous material, there is a small possibility of increased releases, but makes no effort to qualify where this might occur.

The overwhelming community sentiment is that before expanding program activities that could increase the spread of hazardous materials in the environment, both sites must be cleaned up. Equally important is the fact that the cleanup budget for both sites has been strained over recent years, and we are extremely concerned that an increase in program activity at LLNL will cause a decrease in budget for cleanup. As recently as this year, LLNL requested the regulatory authorities overseeing cleanup to delay certain milestones under the Federal Facilities Agreement because of budgetary shortfalls. The community and the agencies have so far acquiesced to these requests, but if there is an increase in program activities that takes money from cleanup, Tri-

55

Tri-Valley CAREs
Page 56 of 63

Valley CAREs will not agree delaying milestones in the future – and we will urge the regulatory agencies that have binding agreements not to do so.

90/24.03 cont.

We would also like DOE to carefully consider its existing cleanup agreements when considering expanding program activities and evaluate if new programs will chew into the cleanup budget. This issue should be given high priority in the SWEIS. Potential "trade offs" that may lead to cleanup budget shortfalls must be discussed in the SWEIS.

k. LLNL Site 300 -- Additional Issues and Questions Must be Addressed

Section 3.4.7 states that tritium emissions from hydro shots at Site 300 would result in 150 to 200 Curies per year (reduced action versus no action and proposed action). However, in document 1391, LLNL, Tritium Usage at Site 300, Lawrence Livermore National Laboratory, Livermore, CA, February 2003, it is stated that Tritium usage at Site 300 will be 80 mg in the proposed action (800 curies). Please clarify in the SWEIS the number of curies of tritium that will be used in the proposed action at Site 300.

The community was assured in the 1992 SWEIS/EIR public hearings that no tritium would be used in shots. Tri-Valley CAREs believes that tritium should not be allowed in "shots" at Site 300 nor in environmental testing of explosives assemblies that release radioactive tritium into the environment.

Regarding the test shots at Site 300, it is important that to know what experiments are being undertaken, what their purpose is, their location and what materials are being used. There is no specific information in the Draft SWEIS.

Again, it is important to note that most shots would be fired on outdoor firing tables "for the foreseeable future," not the contained firing facility. Tri-Valley CAREs asks the following questions, which should be answered in the SWEIS:

91/17.01

- How many shots are planned per year?
- Where will these shots be conducted? How much groundwater contamination will result from these shots? The amounts of tritium for proposed shots should be considered in the SWEIS.
- What is the composition of the shots / how much tritium will be used and what pollutants are by-products of the shots? How are the biological and health effects (including diseases other than latent cancer fatalities) of tritium accounted for in workers and the public? In endangered species?
- How much depleted uranium will be used? How are the biological and health effects of aerosolized depleted uranium (including other than latent cancer fatalities) accounted for in workers and the public? In endangered species?
- What disposal method will be used for all of the different types of debris from the shots?
- Have they undergone environmental modeling?
- How are these activities reported, and are they reported to EPA?

56

Tri-Valley CAREs
Page 57 of 63

92/20.02 The shipment of explosive materials can be hazardous. Most of the hazardous shipments to and from Site 300 are explosives shipments (approximately 300).

.

- What is the increased risk of environmental impacts resulting from transport including radiation exposure, accidents, spills or terrorist activity en route?
- What proportion of shipments will be handled by commercial contractors?
- What is the impact of choosing commercial contractors versus lab employees?

l. Waste Management Analysis is Inconsistent and Must Be Revised

93/22.01 In Table B.3–1.—Activity Levels Used to Analyze Decontamination and Waste Treatment Facility and Area 612 Facilities Under the No Action, Proposed Action, and Reduced Operation Alternatives (Routine plus Non-routine), DOE provided quantities of Transuranic (TRU) Waste that are not consistent with the levels of TRU waste that are generated by the Livermore Lab. For example, the Draft SWEIS indicates that 14 cubic meters will be created at these facilities. In other points in the document, the levels of TRU waste generation will be 70 cubic meters under the proposed action. Please explain this discrepancy. If TRU waste will not be processed/stored/packaged at the waste facilities, where are they expected to be treated? Also, assuming that DOE has provided incorrect data on this Table, we note that the SWEIS postulated accident scenarios assume that the risk to certain populations come from these facilities. Therefore it is very important that the correct data is used.

94/22.03 In Appendix B, there are estimates of Class 1, 2 and 3 permit modifications. For the proposed action, there are 100, 20, and 2, respectively. The SWEIS should identify these modifications where known, and if not known, provide the reasoning for establishing these numbers. Moreover, some justification for determining which ones DOE believes will be Class 1,2 or 3 modifications should be given.

95/20.05 Regarding Section 3.3.15 (Direct Shipment of Transuranic Wastes from the Superblock), are there TRUPACT –II containers available to transport the TRU waste? The SWEIS should provide whether certification will occur? Please provide a description of "pipe overpacks".

96/25.06 Please describe in more detail assumptions about arrays of drums at B-625. The description in the SWEIS is that there is an assumption that the maximum curie limit for one drum would be 60 Ci Pu-equivalent, surrounded by four drums with 12 Ci Pu-equivalent. Is this a requirement or regulation for Building 625? If so, please provide a citation. If not, please explain why this assumption is made.

93/22.01 cont. Has the mobile vendor for waste heading for WIPP begun characterization? Please provide the latest information, including how many drums have been characterized, whether all have met the WIPP acceptance criteria, and provide an updated schedule of shipments.

Is the legacy TRU and mixed TRU waste going to be shipped directly to WIPP, or will it be shipped to an interim site (e.g., INEEL, Hanford). We are enclosing LLNL's presentation to

57

Tri-Valley CAREs
Page 58 of 63

93/22.01 cont. Dave Conrad by Tom Grim on November 8, 2002, graph number 869 – that stated that TRU Waste transport to WIPP may travel via Hanford. (Attachment 35) If the answer is the latter, Appendix J should be modified to state this, and all accident analysis regarding these shipments should be re-evaluated.

97/22.05 Regarding Table B.3.-2, TRU waste generation is less for the proposed action (70 m3/yr) than for the No Action Alternative (105 m3/yr) Please provide an explanation. We note that TRU waste relating to the ITP will increase by 10.4 m3/yr.

m. Decontamination and Decommissioning Activities are Inadequately Addressed

98/17.03 All decontamination and decommissioning (D&D) activities have not been thoroughly taken into consideration and should have been.

Please be sure all radiological and non radiological air quality and decontamination and decommissioning (D&D) is described at the LLNL main site and Site 300. Also please be sure that the SWEIS does take into consideration the full range of contaminants that D&D activities may involve. For example, if asbestos contamination is addressed, the discussion must also address any of the other contaminants that may exist in a facility as a result of the particular scientific research that is conducted at the LLNL main site or Site 300.

Discussion of the potential air quality effects of D&D from other sorts of contaminants should be incorporated into the SWEIS. Buildings or floor space marked for D&D may have been the site of unique exposure to contaminants that, although not common to all of the D&D activities, warrants consideration because of the singular problems they may pose.

Also, the potential effects on air quality from both the transportation and eventual disposal/storage of contaminated demolished facilities needs to be taken into account. The potential for adverse air quality effects exists at any facility to which D&D materials are transported, as well as the regions through which the materials are transported. Such discussion should be incorporated in the SWEIS.

99/20.02 The shipment of explosive materials can be hazardous. Most of the hazardous shipments to and from Site 300 are explosives shipments (approximately 300).

- What is the increased risk of environmental impacts resulting from transport including radiation exposure, accidents, spills or terrorist activity en route?
- What proportion of shipments will be handled by commercial contractors?
- What is the impact of choosing commercial contractors versus lab employees?

n. Weakness of Probabilistic Risk Assessment and Related Concerns

100/25.06 The SWEIS should be forthcoming about the inherent weaknesses in risk assessment by providing an adequate description of what assumptions are used and what weaknesses are inherent in risk calculation.

58

Tri-Valley CAREs
Page 59 of 63

100/25.06 cont.

There are many decisions that are made in a risk analysis that can skew the analysis toward one outcome or another. For example, when quantifying the risk of accident or illness, does the document describe what relevant info is unavailable? Does the assessment assume the DOE is operating in compliance with all regulations? Does the scenario assume that the building design is completely adequate? Does it take into account all relevant factors such as the 108 buildings at LLNL that have potential seismic concerns? Did they look at non-cancer fatalities and illnesses? Do the risk calculations take into account different kinds of exposure that can occur? Internal verses external? Inhalation verses ingestion? Does the analysis take into account the persistent dose rate to a person throughout their lifetime - what the DOE calls the "committed dose". Does the risk assessment account for variations expected for different individuals, variations expected for different species and the difference in dose response due to the age when the organism is exposed? Is human error in operations factored into the calculations? If a risk assessment does not account for relevant information, omitted information should be acknowledged so that the public can come to its own evaluation of the weight that should be attributed to these types of calculations.

Do the risk assessments rely heavily on assumptions extrapolated from the A-Bomb survivor studies? Standards for radiation safety have long relied on these studies that many experts in the scientific community argue are flawed. (Attachment 36).

Please indicate in the SWEIS from where the assumptions are derived for calculating the Lifetime Cancer Fatality (LCF) numbers.

101/17.05

In Section 3.6.5, it is asserted that radiological air emissions from normal operations would be between the Maximum Exposed Individual (MEI) dose for the Livermore main site under the No Action Alternative would be 0.1 millirem per year, 0.13 millirem per year under the Proposed Action and 0.09 millirem per year under the Reduced Action alternative. At Site 300, the MEI dose from firing table 851 would be 0.055 millirem per year under the No Action Alternative and the Proposed Action, and 0.054 under the Reduced Operation Alternative. Please describe how these numbers were derived.

o. The Draft SWEIS Should also be Made Compliant with the California Environmental Quality Act

102/32.01

In 1992, DOE published a joint Site Wide Environmental Impact Statement and Environmental Impact Report, while in 2004 it has chosen to sidestep the California Environmental Quality Act (CEQA). At this date, twelve years later, it is time for an update of the 1992 CEQA review. Our review of the Draft SWEIS reveals that are many aspects of the document that must be made CEQA compliant.

For example, as noted above, the document proposes many changes in hazardous and radioactive mixed waste treatment, storage and disposal that will make it necessary for LLNL to apply for well over one hundred modifications to its Part B permit. That permit is issued by a state agency, the Department of Toxic Substances Control. Air, water and other media affected by the proposals contained in the Draft SWEIS are also state issues. While DOE appears to have anticipated

59

Tri-Valley CAREs
Page 60 of 63

102/32.01 cont.

this comment and provided something that is "CEQA-like," we wonder why DOE did not take the opportunity to make the document a Site Wide EIS/EIR?

Further, the LLNL manager is a state entity, the University of California. The question here is not whether there is an appropriate "lead" and/or "cooperating" state agency, the question is which agency should lead. Tri-Valley CAREs believes that the most appropriate state agency to serve as "lead" agency is DTSC. However, in 1992, the "lead" agency was the University of California. They, too, must be considered for the role.

Finally, CEQA contains requirements that are substantially different from NEPA. For example, CEQA has an even more robust requirement for mitigation measures than NEPA. Further, CEQA is a good framework for dealing with water and energy issues. The list could go on. These examples should suffice to point out that the Draft SWEIS, as it currently stands, does not comply with CEQA -- and should. While this could be remedied by the preparation of a separate EIR, it seems logical to combine them, as was done in 1992.

As with other serious omissions and deficiencies in the Draft SWEIS, this will necessitate reissuing a draft for public comment.

.

p. Two Specific FOIA Requests are Relevant to our SWEIS Comments

103/31.06

First, on March 17, 2004, Tri-Valley CAREs, pursuant to FOIA, requested documents related to transuranic (TRU) waste and its shipment to and from LLNL. The request specified: "We want to emphasize that the requested records are relevant to the preparation of comments on the SWEIS. We therefore reiterate the time-critical nature of the request." We have only received two responses, a form response, dated April 5, indicating that the request was being reviewed, and that additional time may be required and a second letter on May 17, 2004 that informs us that they are working on our request. No date or timeframe is given for an expected response.

Second, also on March 17, 2004, Tri-Valley CAREs requested documents related to the Advanced Material Program (AMP) at LLNL. Like the TRU request, this request stressed the importance of these documents to our ability to adequately comment on the SWEIS. The request stated: "Information obtained from this FOIA request will be used in preparation of newsletter articles and fact-about the SWEIS and will increase public understanding of these DOE activities." And: "We reiterate that the requested records are needed to inform our community outreach efforts around the SWEIS. We therefore emphasize the time-critical nature of the request." We received a response assigning a reference number, but did not receive any subsequent documents. No time frame was provided as to when we might expect responsive documents.

These requests were important for both our comments and our community outreach surrounding the SWEIS. We urge DOE to expedite processing these requests so that we may supplement our comments on the SWEIS. Additionally, please provide us with a timeframe by which you will respond to these requests.

60

Tri-Valley CAREs
Page 61 of 63

VII. DOE SHOULD IMPROVE DOCUMENT STRUCTURE AND ADDRESS TECHNICAL CONCERNS

The Draft SWEIS is poorly integrated and is therefore difficult to follow. The Draft SWEIS should include a comprehensive cross-referencing and indexing system so that it can be adequately evaluated. Additionally, it should put effort into describing health and environmental effects and other information in plain English.

a. Need For Integration Throughout Document

Our review of the Draft SWEIS reveals that the document has been written in discrete parts without the benefit of integration and therefore the document as circulated for public comment is disjointed and does not provide reviewers with an accurate picture of the full spectrum of environmental impacts posed by the project. This was especially apparent in sections such as seismicity and the biological assessment, but was evident throughout.

b. Need for Cross-referencing and Indexing

103/31.06 cont.

The SWEIS is a 2000-plus page document that includes many sections that overlap. Since it is highly unlikely that even a fraction of the decision-makers and community members that are evaluating this document will have the opportunity to read it cover-to-cover, it is essential for the SWEIS to include an elaborate cross-referencing system.

For instance, the growing Biology and Biotechnology Research Programs are not given a dedicated section of the SWEIS. This makes it very difficult for readers to evaluate the purpose and need, proposed impacts, waste streams, transportation risks and new proposals in a concerted manner. If a dedicated section cannot be drafted that attempts to compile this information into a coherent analysis, cross-references should be indicated.

Also, whenever there is a substantial overlap between the assessments of two sections of the document, a cross-reference should be indicated. For example, in the Biological Assessment, information is provided as to the impacts of the Energetic Materials Processing Center emanating from pollution releases to the environment. This should be cross-referenced with all other discussions of the impacts from these projects. Possibly a grid could alleviate this problem. An index should also be included in the document to assist in the onerous navigation of this document.

c. Need for Plain English

A SWEIS must be written in plain language that avoids excessive technical jargon or over reliance on technical analyses confusing to the general public. "Agencies should employ writers of clear prose or editors to write, review, or edit statements, which will be based upon the analysis and supporting data from the natural and social sciences and the environmental design arts." (40 CFR 1502.8)

61

Tri-Valley CAREs
Page 62 of 63

103/31.06 cont.

Many of the impacts to the health of workers and to the exposed community are quantified in terms of Latent Cancer Fatalities and incorporated into charts. It is extremely difficult for laypersons to understand what this means in plain English.

Please revise the SWEIS so that the deaths, illnesses, and quantities of environmental releases are accounted for in an easier to understand prose format. For instance, numbers such as 6.1×10^{-7} (see page S-27) are useful to include in the document but the document should supplement this with a the plain English meaning of this number and a description of what the relevance of this number is in relation to the number of people in the community; e.g. the number illnesses and deaths in Livermore and the number of illnesses and deaths in the San Francisco Bay Area.

Also the assumptions made in each calculation should be listed. Factors that are not accounted for in these quantifications should also be described, such as non-cancer fatalities, the age-range of people who are accounted for in the assumptions and the length of exposure that is assumed. The document should also attempt to describe economic impacts to the community resulting from routine and accidental releases. The inventory of radiological materials (See Table A.4-1) is sometimes provided in grams, while at other times in curies. Please make this table and all other tables consistent. Also, please provide conversion rates for grams to curies for radionuclides of concern at LLNL.

In numerous instances throughout the Draft SWEIS, data was published in truncated form in a table, but never appears anywhere in the text. The data is, therefore, never explained and remains incomprehensible and unavailable to most of the public. For example, a table in the main text lists a CX, or categorical exclusion, for the Advanced Materials Project, while Appendix N refers only generically to an unnamed, uncategorized NEPA review document. Is the NEPA review document referred to in Appendix N a categorical exclusion? Or, is the CX referred to in the table a different NEPA document? Without appropriate descriptions, the public cannot ascertain key facts from the Draft SWEIS.

Moreover, units should be used that are well-known to laypeople and to the scientific community. Units with "fudge-factors" that allow for variation should either not be used or should be described so that their variation can be understood. For example, the unit used in the draft SWEIS, Plutonium-Equivalent Curie (see page S-27), should either be discarded or should be given some explanation. This term was used a number of times and we could not find where this term was defined in the Draft SWEIS. Marion Fulk, a retired physicist from Livermore Lab, asked at the Tracy public hearing on April 28, 2004, for a definition of this unit. Apparently, no one on the panel could define this term in response to his question.

VIII. CONCLUSION

104/31.04

The deficiencies raised by the Defense Nuclear Facilities Safety Board, the General Accounting Office and the National Academies of Science -- along with other experts cited and our own comments -- must be carefully considered by DOE in a new Draft SWEIS. In addition, the Draft SWEIS must be re-circulated to the public to allow comment on the new information.

62

Tri-Valley CAREs
Page 63 of 63

105/04.01 The Draft SWEIS reveals a smorgasbord of significant projects that are generally both environmentally dangerous and proliferation-provocative. These projects, taken together, move LLNL's mission toward nuclear manufacture -- and make LLNL a more nuclear material intensive institution. At the same time, the communities around the LLNL main site and site 300 continue to grow and become more urbanized. We are concerned that this could be a recipe for disaster.

106/07.01 We must insist that DOE take this opportunity to revise the Draft SWEIS by including an alternatives section that looks at other reasonable futures for LLNL -- including an alternatives analysis that discusses terminating LLNL's plutonium mission and one that analyzes a shift toward civilian science initiatives. We also call on DOE to forgo the proposed actions outlined in this Draft SWEIS and to bring the proposed Bio-safety Level-3, further nuclear weapons development and the NIF programs to a close.

107/31.02 Further, due to the complexity and technical nature of the information, the more than 2,000 pages in the document and the hundreds of members of the public who first encountered the Draft SWEIS at the public hearings held on April 27, 28 and 30, 2004, we again request that DOE extend by one month the period during which it will consider written comments. Or, failing that, we ask DOE to reopen the comment period and provide ample outreach to let the public know of the new comment opportunity.

Sincerely,

Marylia Kelley,
Executive Director

Loulena Miles,
Staff Attorney

Inga Olson,
Program Director

Tara Dorabji,
Outreach Director

Peter Strauss,
Technical Consultant

Matthew Liebman,
Legal Intern

On behalf of the Tri-Valley CAREs board, staff and membership
Office address: Tri-Valley CAREs, 2582 Old First Street, Livermore, CA 95551
Phone: (925) 443-7148 • Fax: (925) 443-0177 • Web: www.trivalleycares.org

63