

Tri-Valley CAREs

Communities Against a Radioactive Environment

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Initial Comments and Questions on the Draft Supplement Analysis to the 2005 Site-Wide Environmental Impact Statement for the Lawrence Livermore National Laboratory

1. General Concerns with the Draft Document's Compliance with the National Environmental Policy Act

There are significant new proposals for programs, construction, and development at both Lawrence Livermore National Laboratory (LLNL) main-site and Site 300 mentioned in this Department of Energy (DOE) National Nuclear Security Administration (NNSA) Draft Supplement Analysis (SA) of the LLNL Site-wide Environmental Impact Statement (SWEIS). The 23 proposed "New and Modified Projects," four of which are purposefully left out due to being premature, are summarily found to not pose a significant impact on the environment. This SA asserts that no further review of any of these plans is required. However, for the included projects, we learn that LLNL intends to increase airborne radiation emissions at the National Ignition Facility and increase nuclear waste production.

Questions:

- Why is LLNL adverse to doing more in depth review of the potential impacts of these plans under the National Environmental Policy Act (NEPA)? Why would more NEPA review not aid in public understanding of these proposed activities? How might a full NEPA review, via a new SWEIS or a full Supplemental Environmental Impact Statement (EIS), enhance stakeholder participation, and even the quality of these projects?
- In your opinions, is the standard for preparing a full SWEIS or a full Supplemental EIS document here 1) only if the new and modified projects alone pose a significant impact on the environment, or 2) if the previous SWEIS activities plus the additional new and modified projects pose a significant impact on the environment?

2. Segmentation

a. Target Fabrication Facility and National Ignition Facility operations

The Target Fabrication Facility (TFF) is not currently analyzed in this SA. It is assumed that it is one of the facilities that are excluded because it is “not yet being sufficiently defined for inclusion.” However, the TFF has been in the works for a long time and has a clear definition of its purpose stated in Table 1.1- The TFF would provide facilities for performing research on target fabrication activities , including materials, precision assembly and target characterization techniques,” for the National Ignition Facility (NIF). Additionally, TFF is mentioned elsewhere in this document, despite purportedly being “not yet defined.” Additionally, the TFF directly supports the modifications in NIFs operational parameters being analyzed in this document. Thus, it appears that the TFF is very much a planned facility, but is being left out for other reasons.

Questions:

- Was the TFF left out of this SA because its activities, which will likely result in substantial tritium emissions and other possible contaminants, increased the level of environmental impact to the extent that a more detailed NEPA review would be necessary? (Like a full new SWEIS or a full Supplemental EIS.)
- Is it proper to segment the TFF NEPA analysis when it supports the modifications in NIF’s operational parameters being analyzed in this document?

b. Livermore Valley Open Campus “initiative”

The Livermore Valley Open Campus (LVOC) initiative has been described by the Lab’s own documents and press releases as a project with a specific purpose and need and description- “To leverage the ground-breaking research of the nuclear security labs through private-sector collaborations. The LVOC initiative is conceived as an 'enabler' that will provide expanded opportunities for research collaborations between Sandia/California, LLNL, and external partners. Anchored by Sandia's CRF on one side and LLNL's National Ignition Facility (NIF) on the other, the LVOC will consist of an approximately 50-acre parcel along the eastern edge of the LLNL and Sandia sites along Greenville Road.” (*From the 11-09 Sandia CRF Newsletter*)

The LVOC initiative has been entirely conceived of since the 2005 SWEIS. Yet, there is not a coherent description or discussion of the LVOC initiative and its purpose and need in this document.

However, on page 3-3, we learn that the LVOC will be “anchored” by Applied Energy Simulation Center (AESC) and High-Energy Density Science Center (HEDS) and later we also learn that the Visitor/Commons/Collaboration center will play an important part in the LVOC. The Eastside Access Control Modifications and the Northwest Corner Access control Modifications are also purposed with “allowing an increase in collaborative projects” which can be assumed to mean that they also support the LVOC vision, which includes moving the security fence lines. While it is understood that additional facilities that will be part of the LVOC are not

yet proposed or understood, this SA shows significant amounts of the LVOC's foundation are coming together. These facilities are all LVOC connected actions.

NEPA requires descriptions of proposed actions to include connected actions that are currently proposed or will be proposed in the foreseeable future. The full extent of the proposed actions, including all components, segments, and future phases should be determined. As a rule, an agency can not divide a proposed action into smaller segments to avoid presentation of its full environmental effects. Rather, it must determine if activities are connected in such a way as to be considered parts of a single action, in which case they should be evaluated in the same EIS.

Questions:

- Isn't LVOC, when examined as a whole, a project that will involve significant impacts on the environment? Shouldn't it be analyzed in a new SWEIS?
- Alternatively, rather than a piecemeal and segmented approach, should the LVOC initiative be analyzed in its own NEPA review due to its size, scope and the significant impact on the environment it will pose when examined as a whole?
- Couldn't the new SWEIS or the LVOC EIS be tiered off of as additional specific buildings and components of the overall initiative are proposed?
- Wouldn't this kind of review enhance potential stakeholders involvement in the initiative?
- Shouldn't this SWEIS or LVOC EIS include a clearly stated purpose and need that also provides for various alternatives to the LVOC, incorporates what specific impact this initiative will have on the Livermore community as a whole, the necessary clean up that must take place on the land, and the cumulative impacts of all of these proposed activities?

3. National Ignition Facility

Operational changes at NIF include increasing the maximum tritium inventory from .05 g to .8 grams (a 16 fold increase), an increase in the maximum per shot "blast" yield from 45 MJ to 120 MJ (over 2.5 times more blast yield) and increasing the maximum beryllium inventory from 20 grams to 1 kg, (a 50 fold increase). Additionally it is stated that "the NIF would establish administrative procedures to warn or exclude any non-involved workers within the potential 5-mrem isodose contour area," which will "move further from the NIF target bay" than what was calculated in the SWEIS based on the previous maximum per shot yield, due to "skyshine," which involves NIF- produced neutrons "scattering off the atmosphere to the public."

Questions:

- Exactly how much of the laboratory will be included in the "potential 5-mrem isodose contour area"? Will the UC Davis Center be included? Will parts of the LVOC? Will the new visitor center? How many people are normally working in the 5-mrem isodose contour area? Will non-involved workers outside the potential 5-mrem isodose contour

area be “warned or excluded,” or will workers who may receive a 4.5-mrem dose have no opportunity to be excluded?

- How will these “administrative procedures to warn or exclude any non-involved workers within the potential 5-mrem isodose contour area” be coordinated with other lab programs? With security? Where will workers go? Will they be paid if they choose to go? How will it be determined that the 5-mrem isodose in the contour area has dispersed enough for individual workers to return to their stations, will each area be monitored?
- Why is it necessary to do these increased blasts in NIF? Will these blasts increase the likelihood of achieving ignition? Or, do these blasts enhance the nuclear weapons activities done at NIF, including weapons development and /or nuclear weapons effects testing?

4. The Biological Impacts Section

This SA reaches the conclusion that the endangered species at both the main-site and Site 300 will not be impacted by the proposed activities. However, the lack of actually completed biological assessments makes the conclusion appear more wish than actuality. Both the main site and Site 300 are to have Programmatic Biological Assessments (PBAs) completed at some undisclosed future date.

The SA states that the main-site PBA will include a “Resource Management Plan,” conservation measures and a conservation buffer. It goes on however to explain that the conservation buffer is in an already developed area where normal activities will continue, and in fact, the security fence relocation project will be taking place within the “buffer.”

The SA states that the Site 300 PBA will include a “Conservation Set-Aside Area” (CSAA) to "mitigate project impacts" among other things. It states that the location of the CSAA was chosen to “encompass areas of abundant biological diversity that can be dedicated for the preservation of listed species,” though also states that the potential for incidental takes could occur.

Questions:

- How is it that the SA can conclude that the proposed activities will not have an impact on the endangered species present at either site, (including those who have designated critical habitat at Site 300) without having completed the PBAs?
- If the main site PBA conservation buffer is in a developed area where normal activities will continue and in fact, the security fence relocation project will be taking place, which will surely involve land disturbing activities, how does the buffer actually conserve species?
- Can the CSAA at Site 300 be described? (Size? Location? Description of biological resources? Distance from operations?)
- Can more detailed maps of both the biological resources and the proposed conservation efforts be provided?

- When is it estimated that these PBAs will be complete?

5. Air Emissions

There is a projected increase in tritium emissions from the NIF from 30 Ci per year to 80 Ci per year.

Questions:

- Will the public be notified when there are increased airborne tritium emissions from the NIF?
- There is heightened concern about increased levels of baseline radiation in the environment from the Fukushima disaster. Did LLNL take these potential increases into consideration when calculating baseline doses? Should the local public be concerned about increase in radiation from LLNL in addition to that coming from the Fukushima disaster? From other LLNL activities? From other sources?

6. Beryllium

In November of 2010 the Department of Energy (DOE) Office of Health, Safety and Security (HSS) announced a \$200,000 penalty issued to the managers of LLNL. This unprecedented action stems from the agency's finding that the Livermore Lab National Security, LLC's (LLNS) legally-required program to minimize worker exposure to beryllium was rife with "deficiencies" that led to multiple, uncontrolled worker exposures between 2007 and 2010, subsequent to the LLNS contract to manage the nuclear weapons laboratory.

Currently, the DOE is revising and updating its Chronic Beryllium Disease Prevention Program, which LLNL is required to implement.

Despite these developments, the SA proposes a huge increase in the use of beryllium for NIF experiments with minimal analysis of how this increased Beryllium will be managed or whether additional worker protections will be implemented. The SA also includes "Facility Beryllium Decontamination Efforts" on its "New and Modified Projects" list. While, decontaminating and removing legacy Beryllium from LLNL is a very important project, it does pose potential hazards to workers, especially in light of previous exposures, and merits a detailed analysis.

The SA states that "for NIF Target Chamber cleanup options have been evaluated and the preferred option is to retain the first wall panels, which capture most of the particulate contamination, in place; as opposed to decontamination or replacement and disposal. This operational change would warrant changing the NIF maximum beryllium inventory from 20 g to 1 kg. The increase in the amount of beryllium inventory will allow the first wall panels to remain in place for an extended period of time, possibly for the lifetime of the facility; thereby, avoiding unnecessary worker exposure and an increase in waste generation that would occur if these panels needed to be removed sooner. Controls in the NIF workplace to manage beryllium include the establishment of beryllium work areas, use of negative ventilation, area draping, use of personnel protective equipment, and monitoring." Yet, the SA summary concludes that "The increase of beryllium inventory from 20 g to 1 kg would not warrant additional controls beyond

those already in place in the NIF.” The analysis that supports this finding states “A chemical accident involving 1 kg of beryllium from the NIF would have a consequence at the site boundary of 0.0051 mg/m³ at 350 meters, or approximately 20% of its ERPG-2 value. This is well below the chemical accident described in the SWEIS, a chlorine gas release with an ERPG-2 distance of 1900 meters.”

Questions:

- How can the SA conclude that the 50 fold increase in beryllium at NIF does not warrant additional controls to protect workers and the public? What about the nearby public at the LVOC? The visitor center? In the community?
- Shouldn't the analysis, which finds that an accident will have low concentrations at the site boundary, also analyze concentrations inside the site boundary to explain how NIF and other LLNL workers will be protected from the higher levels?

7. Radioactive, Mixed and Transuranic Wastes

The discussion of various categories of hazardous, radioactive, mixed and transuranic wastes is scattered throughout the document. Beginning on page 3-67, the SA notes that an increase in transuranic wastes (e.g., containing plutonium) in Building 625 at the Livermore Lab main site. The chart suggests an increase from 4 drums in that building to 36, all containing 18 plutonium equivalent curies. However, the conclusion on page 3-71 states that "with the approval of this SA, the container loading limits for both Building 625 and Building 696R would be changed to 50 plutonium equivalent curies," an apparent 3-fold increase per container.

Additionally, page 3-55 notes that "routine" low-level radioactive waste generation at Livermore Lab is also expected to rise above the levels set out in the 2005 SWEIS. The SA states that the reason is "NIF and photon science and the weapons complex integration" activities. Other, temporary increases in mixed low-level radioactive waste (i.e. a hazardous waste substance inextricably linked to a radioactive waste) are projected on page 3-55 as are "non-routine" increases in low-level radioactive wastes.

Questions:

- Given that Livermore Lab was fined in 2005 for exposing its workers while packaging transuranic waste, isn't a more stringent environmental review in a new SWEIS or Supplemental EIS warranted?
- While the SA asserts that the increase in transuranic waste will not significantly affect the accident scenario (that LLNL modeled), could the problem be with the model? Could a different model show different results?
- The increase in "routine radioactive low-level wastes" is connected in part to weapons activities like NIF. Shouldn't DOE and Livermore Lab disclose the alleged "purpose and need" for these increases. The SA contains a single sentence disclosing the sources of the increase, but does not analyze "why" the increases are proposed or discuss any alternative scenarios.

- The increase in "non-routine low-level wastes" is connected in part to decontamination activities in several buildings on site. While those activities may be laudable in principle, conducting them without adequate analysis can be extremely risky for the workers and the public living and working nearby. There is ample evidence that these activities can and have led to preventable exposures. Shouldn't this trigger a more comprehensive environmental review, such as a SWEIS or Supplemental EIS?

8. Accidents and Intentional Destructive Acts

DOE Office of NEPA Policy and Compliance issued Guidance on December 1, 2006 on the "Need to Consider Intentional Destructive Acts in NEPA Documents." This guidance states that accident scenarios may not fully encompass potential threats posed by intentional destructive acts...[and] each EIS and EA should explicitly consider whether the accident scenarios are truly bounding of intentional acts...each EIS and EA should contain a section demonstrating explicit consideration of sabotage and terrorism."

This SA finds that any intentional acts are bound within existing accident scenarios that were analyzed in the 2005 SWEIS and the Revised EA for the BSL-3. Thus, it contemplates that no intentional act would cause impacts greater than those accidents, despite the facts that large quantities of Special Nuclear Material are being packaged at LLNL and transported around and away from the facility, increased amounts of tritium and beryllium will be utilized at the main site, and there will be increased access to the facility in the intentionally less secure LVOC area.

Questions:

- How will the LVOC initiative, which implicitly and explicitly decreases security level in its facilities, affect the overall safety and security of the facility? (This change was not addressed in the Complex Transformation PEIS or the 2005 SWEIS)
- Isn't it foreseeable that the threat and consequences of both accidents and/or intentional destructive acts will increase due to the expanded public/civilian presence and involvement at LVOC? Why is this not analyzed in either the Accident or Intentional Destructive Acts Analyses?
- For intentional destructive acts involving both biological and nuclear materials at LLNL, there have been classified analyses done (For the BSL-3 Facility- LLNL's Biological Risk and Threat Assessment for Building 368 Biological Safety Laboratory Level 3 and for the LLNL's Nuclear Facilities, the Complex Transformation SPEIS contained a classified appendix) that examined the impacts to LLNL and the surrounding community of potential intentional acts. Yet, even these potential impacts of the intentional destructive acts have remained classified. Can it be explained how the disclosure of the potential impacts of intentional destructive acts that were analyzed in these documents "could be exploited by terrorists or assist them in planning attacks?" How are members of the public supposed to analyze the security precautions, safety measures and potential threats of proposed activities without an understanding of the kind of impacts that could result from an intentional destructive act?