U.S. Department of Energy
National Nuclear Security Administration
Livermore Site Office
Livermore, California

SUPPLEMENT ANALYSIS

of the

2005 Final Site-wide Environmental Impact Statement

For Continued Operation of Lawrence Livermore National Laboratory

VOLUME II: Comment Response Document

AUGUST 2011

DOE/EIS-0348-SA-03

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Contents

Tables

NOTATIONS

The following is a list of acronyms, abbreviations, and units of measure used in this document.

Acronyms and Abbreviations

ALARA	As Low As Reasonably Achievable
AMP	Advanced Materials Program
AVLIS	Atomic Vapor Laser Isotope Separation
BA	Biological Assessment
BO	Biological Opinion
BSL	Biological Safety Level
CEDE	Committed Effective Dose Equivalent
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, & Liability Act
CFR	Code of Federal Regulations
CRD	Comment Response Document
D&D	Decontamination, Deactivation, and/or Demolition
DOE	U.S. Department of Energy
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ERPG	Emergency Response Planning Guidelines
FGR	Federal Guidance Report
HEAF	High Explosives Application Facility

HEPA	High-Efficiency Particulate Air Filter
ISMS	Integrated Safety Management System
ITP	Integrated Technology Project
LCF	Latent Cancer Fatalities
LLNL	Lawrence Livermore National Laboratory
LLW	Low-Level Radioactive Waste
LVOC	Livermore Valley Open Campus
MACCS2	MELCOR Accident Consequence Code Systems
MEI	Maximally Exposed Individual
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NIF	National Ignition Facility
NNSA	National Nuclear Security Administration
PBA	Programmatic Biological Assessment
PE-Ci	Plutonium 239-equivalent curie
PEIS	Programmatic Environmental Impact Statement
PPE	Personal Protective Equipment
PS	Photon Science
R&D	Research and Development
ROD	Record of Decision
SA	Supplement Analysis
SNM	Special Nuclear Material
SPEIS	Supplemental Programmatic Environmental Impact Statement

SSM	Stockpile Stewardship and Management
SWEIS	Site-Wide Environmental Impact Statement
TFF	Target Fabrication Facility
TFM	Tritium Facility Modernization
TRU	Transuranic Radioactive Waste
UC	University of California
USFWS	U.S. Fish and Wildlife Service
WCI	Weapons and Complex Integration

Units of Measure

Ci/yr	curies per year
cm	centimeters
ft	feet
kg	kilograms
mg/m^3	milligrams per cubic meter
MJ	megajoule
mrem/yr	millirems per year
rem	Roentgen equivalent man—a unit of radiation exposure

1.0 INTRODUCTION

1.1 Background

The U.S. Department of Energy (DOE)/National Nuclear Security Administration (NNSA) prepared a draft Supplement Analysis (SA) in accordance with the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) (Code of Federal Regulations, Title 40, Parts 1500–1508 [40 CFR Parts 1500–1508]), and DOE's NEPA Implementing Procedures (10 CFR Part 1021). It considered whether the *Final Site-Wide Environmental Impact Statement for Continued Operation of Lawrence Livermore National Laboratory and Supplemental Stockpile Stewardship and Management Programmatic Environmental Impact Statement* (DOE/EIS-0348 and DOE/EIS-0236-S3) (DOE 2005a), hereafter referred to as the "2005 SWEIS" or "SWEIS", should be supplemented, a new site-wide environmental impact statement (EIS) should be prepared, or no further NEPA documentation is required.

The SA examined changes in programs, projects, or operations since the 2005 SWEIS, new and modified plans, projects, and operations for the period from now to 2015, as well as new information that was not available for consideration when the 2005 SWEIS was prepared. When such changes, modifications, and new information were identified, they were examined to determine whether they could be considered substantial or significant in reference to the 2005 Record of Decision (ROD). NNSA released the draft SA to the public to obtain stakeholder comments and to consider those comments in the preparation of the final SA. NNSA distributed copies of the draft SA to individuals and organizations known to have an interest in LLNL activities in addition to those who requested a copy. In response to comments received, NNSA prepared this Comment Response Document.

1.2 Public Participation

NNSA issued and distributed the draft SA for public review and comment on March 30, 2011, and the public comment period extended to May 13, 2011. NNSA held two public informational meetings on the draft SA on April 14, 2011 in Livermore, California. The public meetings were held to provide information on the SA to the public, answer questions, and receive written comments. The informational meetings used an informal format with a facilitator, which allowed two-way interaction between NNSA and the public. The facilitator helped to direct and clarify discussions and comments, allowing every commenter the chance to present questions and comments.

NNSA considered all comments to evaluate the accuracy and adequacy of the draft SA and to determine whether its text needed to be corrected, clarified, or otherwise revised. NNSA also considered if new information presented any significant new circumstances relevant to environmental concerns. NNSA gave equal weight to all written comments received. Comments were reviewed for content and relevance to the environmental information contained in the draft SA.

2.0 COMMENT DOCUMENTS

This section presents the stakeholder comment documents submitted to the NNSA during the 45-day public comment period. NNSA reviewed each document and identified individual comments. Each identified comment was marked in the margin with a bar, with document number and sequential comment number. For example, Comment 2-4 identifies the stakeholder document as Document 2, and the individual comment (4) within that document. NNSA responded to all identified comments in Section 3 of this Comment Response Document volume.

Table 2.1-1 Individuals and Organizations Providing Comments During the Comment Period

Commenter ID	Commenter	Affiliation (if stated)	Comment Source
1	Marylia Kelley Scott Yundt Loulena Miles	Tri-Valley CAREs	Email
2	Mathew Swyers William Silva Phoebe Sorgen Julie Machado Thad Binkley Rev. Cara Holmquist Timothy Burke Janis Turner Phyllis Jardine Cynthia Johnson Lucia Owens Mary Izett Fred Norman Cathe Norman Bob Russell Diana Bohn Natalie Russell Dorothy Wander	Tri-Valley CAREs (Form Letter Campaign)	US Mail

	James Forsyth John Morearty, Ph.D. Kalolaine Lavala Sherry Larsen-Beville David Hartsough Patricia Gallagher Sherri Maurin David McThai John Wytmans Louise Lynch Steve Leeds Paul Dodd Aiello Veronica Gallagher Gloria Fearn Silvia Brandon Perez Antoinette Wire Jeanette Smith Sandy Shartzer Carol Johnson Jennifer Arcuni Bernard Campbell Justine Daniel Dale Axelrod L. Watchempino R.E. Watchempino Joann Hastings Barbara Bogard Zhenga Spake Ann Seitz		
3	Jackie Cabasso	Western States Legal Foundation	Public Meeting
4	Jackie Cabasso	Western States Legal Foundation	Public Meeting
5	Beverly King	Local Citizen	US Mail
6	Scott Kovac	Nuclear Watch New Mexico	Email
7	Matthew Swyers	Local Citizen	Email
8	Winifred Detwiler	Local Citizen	Email
9	Carl Anderson	Local Citizen	Email
10	Janis Turner	Local Citizen	US Mail

Tri-Valley CAREs

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Peace Justice Environment since 1983

May 13, 2011

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Tri-Valley CAREs Comments and Questions on the Draft *Supplement Analysis to the 2005 Site-Wide Environmental Impact Statement for Continued Operation of Lawrence Livermore National Laboratory*

Tri-Valley CAREs submits these comments and questions on the Draft Supplement Analysis (SA) to the 2005 Site-Wide Environmental Impact Statement (SWEIS) for Continued Operation of Lawrence Livermore National Laboratory (LLNL). As explained herein, the SA fails to provide an accurate, complete or legally adequate analysis of the new and updated programs at Lawrence Livermore National Laboratory as is required by the National Environmental Policy Act (NEPA).

Tri-Valley CAREs was founded in 1983 in Livermore, California by concerned neighbors living around the Lawrence Livermore National Laboratory, one of two locations where all US nuclear weapons are designed. Tri-Valley CAREs monitors nuclear weapons and environmental clean-up activities throughout the US nuclear weapons complex, with a special focus on Livermore Lab and the surrounding communities.

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

The purpose of NEPA is to ensure that every federal agency prepare a full Environmental Impact Statement (EIS) for major federal actions significantly affecting the quality of the human environment.[1] An EIS must provide a "full and fair discussion of significant environmental impacts and shall inform the decision-makers and the public of the reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment."[2]

When it is unclear whether or not an EIS supplement is required, DOE may prepare a Supplement Analysis.[3] The Supplement Analysis shall discuss the circumstances that are

[1] 42 U.S.C. 4332; 40 CFR 1501.
[2] 40 CFR 1502.1.
[3] 10 CFR 1021.314(c).

pertinent to deciding whether to prepare a Supplemental EIS, pursuant to 40 CFR 1502.9(c). The Supplement Analysis shall contain sufficient information for DOE to determine whether:

(i) An existing EIS should be supplemented;
(ii) A new EIS should be prepared; or
(iii) No further NEPA documentation is required.

Supplemental EISs are required when "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."[4] Further, a SEIS is required if a new proposal "will have a significant impact on the environment in a manner not previously evaluated and considered."[5]

1-1 The SA identifies 23 proposed "New and Modified Projects," and concludes that four of these programs are premature, and that the remaining 19 programs do not pose a significant impact on the environment. Therefore, the SA asserts that no further review of any of these plans is required. However, the SA fails to analyze a number of proposals for programs, construction, and development at both LLNL main site and Site 300 where "significant new circumstances" relevant to environmental concerns is known and where environmental impacts associated with the programs will be significant "in a manner not previously evaluated and considered."

As a result, the SA's analysis is superficial and woefully incomplete. Several of the 19 programs analyzed in the SA are connected to actions that have not been analyzed in any NEPA review and therefore must be analyzed together with the proposed action. Other programs clearly have significant environmental impacts that must be studied in a full EIS. For example, the SA
1-2 omits any environmental review of the Livermore Valley Open Campus (LVOC) as a proposal and instead states that appropriate environmental review and documentation would be performed at a later date. Yet, the SA concedes that the Applied Energy Simulation Center, the High-energy Density Science, and the "visitor/commons/collaboration center" are connected to the LVOC effort and purportedly studies these programs in this SA. Moreover, in the SA we learn
1-3 that LLNL intends to increase airborne radiation emissions at the National Ignition Facility and
1-4 increase nuclear waste production, activities that certainly will result in potentially significant environmental impacts. Ultimately, the SA fails to meet the standards set out under NEPA.

Questions:

1-5 • Why is LLNL/DOE averse 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?

1-6 • Is the DOE assuming that the standard for preparing a full SWEIS or a full Supplemental EIS document exists 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?

[4] 40 C.F.R. § 1502.9(c)(1)(ii).
[5] *S. Trenton Residents Against 29 v. Fed. Highway Admin.* (1999) 176 F.3d 658, 663.

2. Segmentation

Connected actions are those actions that are "closely related" and "should be discussed" in the same NEPA document. Under NEPA, actions are connected if they:

> (i) Automatically trigger other actions which may require environmental impact statements.
>
> (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously.[6]

The Ninth Circuit Court of Appeals applies an "independent utility" test to determine whether multiple actions are so connected as to mandate consideration in a single EIS. The crux of the test is whether "each of two projects would have taken place with or without the other and thus had `independent utility.'" *Wetlands Action Network v. U.S. Army Corps of Eng'rs, 222 F.3d 1105, 1118 (9th Cir.2000),* 222 F.3d at 1118. When one of the projects might reasonably have been completed without the existence of the other, the two projects have independent utility and are not "connected" for NEPA's purposes. *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 894 (9th Cir.2002).

In *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1215 (9th Cir.1998), the Ninth Circuit held that five potential logging projects in the same watershed were cumulative and had to be evaluated in a single EIS, where they were reasonably foreseeable and "developed as part of a comprehensive forest recovery strategy." Similarly, in *Thomas v. Peterson*, 753 F.2d 754, 758 (9th Cir.1985), the court held that a logging project and a road to facilitate the logging had to be considered in a single EIS because "the timber sales could not proceed without the road, and the road would not be built but for the contemplated timber sales."

1-7 The Target Fabrication Facility (TFF), the Tritium Facility Modernization Project (TFMP) and the LVOC proposals are reasonably foreseeable and interdependent with Projects that are purportedly analyzed in this Supplement. Therefore these programs are improperly segmented in violation of NEPA.

a. Target Fabrication Facility and National Ignition Facility Operations

The TFF is not currently analyzed in this SA. We are left to assume 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 in the SA. Further, Tri-Valley CAREs has documents obtained under the Freedom of Information Act that show a long and sustained process delineating and defining the TFF. The TFF predates other projects that DOE has decided to incorporate in this SA. Moreover, the TFF is not less mature with regard to the Critical Decision path or line item budget detail than other projects chosen for inclusion in the SA. There is no clear line separating projects that were chosen for inclusion in this SA from the TFF, which was not included. 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).

1-8 Additionally, the TFF is referenced elsewhere in this SA document, despite purportedly being "not yet defined." The TFF would support planned operations at the NIF. Thus, the TFF is a

[6] CEQ Regulations (40 CFR §1508.25).

planned facility, sufficiently ripe for inclusion in the SA, and a project that cannot or will not proceed without the NIF, and therefore should be studied with the NIF in one NEPA document.

Questions:

1-9 • 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.)

1-10 • Is it proper to segment the TFF NEPA analysis when it supports modifications in NIF's operational parameters, including, potentially, ones being analyzed in this document?

b. Tritium Facility Modernization Project

The TFMP was not analyzed in this SA and should be. The Defense Nuclear Facilities Safety Board (DNFSB) has reported exposures and violations at the Tritium Facility Modernization Project in recent months. A "Modernization Project" was approved for the facility (B-331) after the Lab determined that the project was eligible for a "Categorical Exclusion" from NEPA review. (This project was not covered by the 2005 SWEIS). The DNFSB has also reported that some of the newly "modernized" areas of the Tritium Facility Modernization Project have not gone though the final readiness review. It appears that the completion schedule for the project has changed, and/or the scope of the project was expanded. Due to the recent exposures and violations at the facility, the hazards posed by the potential release of tritium and the potential release of plutonium (due to new activities with that element in B-331), and the fact that tritium contaminated water can not be remediated (for example), we believe that the Tritium Facility Modernization Project has the potential to cause a significant impact the human health and the environment and was improperly excluded from the NEPA process. Moreover, according to the June 20, 2006 memo from then LSO manager to Jerald Paul, NNSA Central Technical Authority, and other documents obtained by Tri-Valley CARES under the Freedom of Information Act, the Tritium Facility Modernization Project is irretrievably connected to the NIF. For example, the 2006 document states: "A project is underway to modify increment 2 by adding a large one-room structure and opening several internal walls to enable new tritium workstations for the purpose of preparing targets for the National Ignition Facility (NIF). The Tritium Facility Modernization Project (TFMP) is anticipating that an inventory limit of 20 to 30 grams of tritium will be required for NIF target preparations..." As noted above, the TFMP was not covered in the 2005 SWEIS, has evolved since that time and was also not covered in this SA either. It is certainly has become a major federal actions significantly affecting the quality of the human environment. Moreover, the new TFMP was designed to and has become connected to NIF in specific ways the pre-TFMP B-331 was not. NIF is given as the foremost mission reason for the TFMP, and must be analyzed with NIF in a comprehensive and thoroughgoing NEPA review.

Questions:

1-11 • What is the status of the TFMP's NEPA review? Is the Categorical Exclusion the NEPA document upon which the entire project still rests?

• Was the TFMP left out of the SA because it involves increased tritium emissions that individually or when coupled with other NIF-related increases in tritium emissions could lead to a finding that would support a decision to prepare a new SWEIS or Supplemental EIS?

1-11 cont • Is it proper to segment the TFMP from NIF (and ignore it altogether) when it directly supports NIF operations that are analyzed in the SA?

c. 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 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.

The NEPA process must be integrated with agency planning "at the earliest possible time," 40 C.F.R. § 1501.2, and the purpose cannot be fully served if consideration of the cumulative effects of successive, interdependent steps is delayed until the first step has already been taken. *Thomas v. Peterson*, 753 F.2d 754, 760 (9th Cir. Idaho 1985) "While it is true that administrative agencies must be given considerable discretion in defining the scope of environmental impact statements, there are situations in which an agency is required to consider several related actions in a single EIS... Not to require this would permit dividing a project into multiple "actions," each of which individually has an insignificant environmental impact, but which collectively have a substantial impact. *Id.* at 758. *See also Alpine Lakes Protection Society v. Schlapfer*, 518 F.2d 1089, 1090 (9th Cir. 1975). 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:

1-12 • 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?

1-12 cont

- 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

NEPA requires that federal agencies analyze the environmental effects of proposed actions, publish the results of their study and receive and respond to public comments. These "action-forcing" requirements are intended to serve two broad goals. First, Congress intended that an agency, "in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts."[7] Second, the publication of the EIS informs the public of potential environmental impacts and "provides a springboard for public comment."[7]

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."

1-13 These changes will certainly have potentially significant environmental impacts that warrant further study pursuant to NEPA. DOE should analyze these changes to the NIF in a stand-alone EIS for the NIF so as to demonstrate to the public that the DOE has carefully considered detailed information concerning these significant environmental impacts and to create a "springboard for public comment."

Questions:

1-14

- Exactly how much of the laboratory will be included in the "potential 5-mrem isodose contour area"? Could the UC Davis Center be included? Could parts of the LVOC? Could 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?

[7] Robertson v. Methow Valley Citizens Council (1989) 490 U.S. 332, 349.

1-15 • 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?

1-16 • Why is it necessary to do these increased blasts in NIF? Will these blasts increase the likelihood of achieving ignition? Or, could 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:

1-17 • 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?

1-18 • 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?

1-19 • Can the CSAA at Site 300 be described? (Size? Location? Description of biological resources? Distance from operations?)

1-20 • Can more detailed maps of both the biological resources and the proposed conservation efforts be provided?

1-21 • When is it estimated that these PBAs will be complete?

1-22 • On page 3-8 the SA states that "a site-wide Biological Assessment (BA) for the LLNL SWEIS was prepared and submitted to the USFWS in April 2004. The USFWS did not issue a Biological Opinion (BO)." However, when asked about this in the public meeting about the SA, the DOE subject matter expert stated that Biological Opinions had always been issued. Please clear up the discrepancy between that statement and the written words in the SA.

5. Air Emissions

1-23 There is a projected increase in tritium emissions from the NIF from 30 Ci per year to 80 Ci per year. The reason given involves issues with the molecular sieve capture system at the NIF. Exposure to tritium has potentially significant human health impacts. This is at odds with this documents assertion that there will be no significant impact to human health or the environment, and this adds to and underscores, Tri-Valley CAREs call for preparation of a full SWEIS or at least a full Supplemental EIS. Moreover, as noted in the TFMP section, that project has planned
1-24 increases in tritium emissions (since the 2005 SWEIS) related to the NIF that will be added to this particular increase from 30 to 80 Ci per year due to the limitations of operating the molecular sieve at NIF that was included in the SA. What about the combined impacts?

Questions:

1-25 • Are there alternatives to increasing airborne radiation? Other capture systems available? Changes in operational methods or parameters?

1-26 • Will the public be notified when there are increased airborne tritium emissions from the NIF?

1-27 • 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.

1-28 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

1-28 cont 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:

1-29 • 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?

1-30 • 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 significant concentrations of plutonium) in Building 625 at the Livermore Lab main site. The chart suggests an increase from 4 drums in that
1-31 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:

1-32 • 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?

1-33 • 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?

1-34 • The increase in "routine radioactive low-level wastes" is connected in part to weapons activities, including at the 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.

1-35 • 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."

1-36 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 that 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:

1-37 • 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 Supplemental Programmatic EIS or the 2005 SWEIS)

1-38 • 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?

1-39

- 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 analyses of the **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?

9. Deinventory of Special Nuclear Material

The 2005 Record of Decision that followed the SWEIS raised the inventory limit for plutonium at Livermore Lab. Despite this raised limit, much of the Category 1 and 2 Special Nuclear Material, including plutonium, stored at the lab has already been removed or is scheduled for removal by 2012. (In Tri-Valley CAREs comments to the 2005 SWEIS it expressed the need for removal of Category 1 and 2 Special Nuclear Material to have its own NEPA review.)

The decision to remove Category 1 and 2 Special Nuclear Material follows a series of failed security drills and other findings that questioned the safety of this material in such close proximity to the public. It is also purportedly being done to "shrink the footprint" of the high security area at the Lab.

However, the Lab is also receiving usable quantities of weapons grade plutonium from Los Alamos National Laboratory to conduct experiments with. Thus, it appears that the
1-40 "deinventorying" will not actually leave the Lab with no plutonium, that the high security area around the plutonium facility will have to remain in place and that the risk to the public living, working and visiting the area around the Lab will remain. This is at odds with this documents assertion that there will be no significant impact to human health or the environment and this adds to the call for preparation of a full SWEIS or at least a full Supplemental EIS.

Questions:

1-41

- Where is the NEPA coverage of the transportation of Special Nuclear Material in an out of Livermore Lab for the "deinventorying" process and for the shipments of weapons grade plutonium from Los Alamos National Laboratory? If there is none, why was it not analyzed in the SA?

- What potential impacts on human health and the environment could result from the shipments of weapons grade plutonium from Los Alamos National Laboratory?

10. High Explosives Application Facility (HEAF) "Expansion"

The plan to expand LLNL's HEAF at the main site was made public by the 2008 Complex Transformation SPEIS in which it is mentioned that 8-10 acres disturbed on main LLNL site near the

HEAF occur for the "HEAF Annex." Its NEPA coverage in that document was far from sufficient given that it was a Programmatic review not intended to cover the detailed impacts of each facility across the complex. Subsequently, the 2010 Lawrence Livermore Laboratory 10-Year Site Plan mentions a HEAF "expansion" that will occur within the next 10 years. Yet, no NEPA coverage has been provided for this project in any detail, though steps have been taken that could allow the project to begin within the next 5 years. Because the facility works with high explosives, it poses potentially significant impacts to human health and the environment both from normal operations and from a potential accident. Thus, is should be analyzed in a full SWEIS or at least a full Supplemental EIS and/or at the very least covered in this Supplement Analysis.

Questions:

1-42

- How is the HEAF expansion outlined in the LLNL 2010 Ten Year Site Plan different from the HEAF Annex?
- Why has the proposed HEAF expansion project escaped the hard look it merits with a NEPA review?
- What are the potential human health and environmental impacts of the HEAF expansion?
- What is the potential timeline for the HEAF expansion?

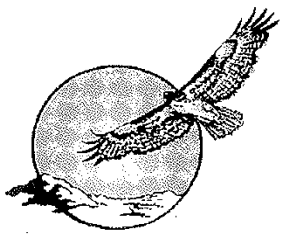
11. Conclusion

1-43 First, the SA must be improved and new document should be re-circulated for public comment. As it currently stands, the document does not meet the mandates of NEPA. Second, there have been numerous and significant changes in programs and operations at LLNL since the 2005 SWEIS and its November 2005 Record of Decision were published. Tri-Valley CAREs asserts that a new SWEIS is required at this time, or at the very least a Supplemental EIS. We find ourselves somewhat mystified that DOE's conclusion is to conduct no further environmental review; not a SWEIS, not a Supplemental EIS. We strongly request that DOE reconsider that conclusion.

For Tri-Valley CAREs (via email)

Marylia Kelley, Executive Director
Scott Yundt, Staff Attorney
Loulena Miles, Attorney and Board Member

Tri-Valley CAREs
Communities Against a Radioactive Environment
2582 Old First Street, Livermore, CA 94551 • (925) 443-7148 • www.trivalleycares.org



Peace Justice Environment since 1983

May 13, 2011

Michael Wahlig, Document Manager
U.S. DOE NNSA,
Livermore Site Office, L-293
7000 East Avenue
Livermore, CA 94551

Dear Mr. Wahlig:

Enclosed are 41 comments from residents of Livermore and surrounding Bay Area and Central Valley communities.

Please consider their comments on the draft Supplement Analysis, and add them to DOE and LLNL contact lists of people who want to be informed of the outcome of this process - and to the DOE and LLNL contact lists of people who want to be notified regarding future environmental activities involving LLNL (e.g., public meetings, workshops, comment periods, document releases).

Some of these comments were brought in to the Tri-Valley CAREs office by concerned people who wanted us to make sure their voices would be heard. Others were given to our staff attorney, Scott Yundt, after he had an opportunity to speak one-on-one with folks. I mention this because I want to make sure the comments are given due and individual respect. Sometimes, in the past, DOE has lumped comments together and not given them proper acknowledgment.

I will be sending a more detailed comment letter to you via email on behalf of Tri-Valley CAREs organizationally later today. I wanted to get these in the mail first - and in time to be postmarked with today's date.

Best,

Marylia Kelley

Marylia Kelley
Executive Director,
Tri-Valley CAREs

Total = 44 attached

Note: Plus 2 more complete comments faxed & followed up w/ phone call to TVC office Friday afternoon
Plus one that only came through P.I w/ name & fax #.

To: Mr. Michael Wahlig, Document Manager
DOE/NNSA Livermore Site Office, L-293
7000 East Avenue, Livermore, CA 94551-0808

My Comment on LLNL's Supplement Analysis to the 2005 SWEIS

Dear Mr. Wahlig,

2-1 The Draft 2011 Supplement Analysis of the 2005 Final Site-wide Environmental Impact Statement (SWEIS) for Continued Operation of Lawrence Livermore National Laboratory, which evaluates 19 new or modified projects at LLNL and their potential impacts on the environment, summarily concluded that the impacts will be insignificant and that no further analysis was needed under the National Environmental Policy Act. Thus, if approved, the Livermore Lab will move forward with these projects without additional environmental analysis until 2015, or later. However, I believe that a number of the projects have the potential to significantly impact the environment. Additionally, other programs were left out of the Supplement Analysis that also have the potential to significantly impact the environment. Thus, in my opinion, a full Supplemental EIS, or a new Site-wide EIS is needed to analyze these impacts. The details of these and other issues are expanded on in the sections below.

I. Increased Risks at the National Ignition Facility

2-2 I am deeply concerned about the operational changes at NIF that include increasing the maximum radioactive tritium inventory from .05 g to .8 grams (a 16 fold increase) I also believe the planned in tritium air emissions from the NIF from 30 Ci per year to 80 Ci per year is significant, as are 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 original SWEIS based on the previous maximum per shot yield, due to "skyshine," which involves NIF- produced neutrons "scattering off the atmosphere to the public." All of these increases pose potentially significant threats of increased exposure to radiation and toxins to workers, the public and the environment and require additional NEPA analysis.

II. Radioactive and Transuranic Waste

2-3 The discussion of various categories of hazardous, radioactive, mixed and transuranic wastes is scattered throughout the document. Beginning on page 3-67, the Supplement Analysis notes that an increase in transuranic wastes (e.g., containing plutonium) in Building 625 at the Livermore Lab main site is planned. 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 Supplement Analysis, 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.

2-4 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

2-4 cont 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.

III. The Target Fabrication Facility is Inappropriately Left Out

2-5 The Target Fabrication Facility (TFF) is not currently analyzed in this Supplement Analysis. 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. 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. A full analysis of the TFF, including an alternatives analysis should be included in a new SWEIS or a Supplemental EIS.

IV. The LVOC Initiative Should be Analyzed with Various Alternatives and Public Input

2-6 The Livermore Valley Open Campus (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.

Again, I ask that the additional environmental review into the impacts of these projects be completed and would like to remain informed about and included in the Lab's decisions.

My Name Is: _____

Street Address: _____

City/State/Zip: _____

Received at 14 April 2011 Public Informational Meeting

Draft Supplement Analysis of the 2005 Final Site-wide Environmental Impact Statement for Continued Operation of Lawrence Livermore National Laboratory
U.S. Department of Energy
National Nuclear Security Administration
Livermore, CA

National Nuclear Security Administration

Written Comment Form

Must be postmarked, emailed or faxed on or before May 13, 2011

Name: Jackie Cabasso, Executive Director

Address: Western States Legal Foundation
655-13th Street, Suite 201 Oakland, CA 94612

SUBJECT/RESOURCE: Lack of Public Notice

3-1 Western States Legal Foundation (WSLF) has been participating in NEPA + CEQA administrative proceeding regarding LLNL for nearly 25 years. We did NOT receive any notice of the Draft Supplemental Analysis or today's public meetings from DOE, NNSA or LLNL. In the past, DOE has defined the directly affected environment as a 50-mile radius around the Lab. Programatic activities and their environmental impacts are of great concern to residents of the greater Bay area and indeed people across the country and around the world.

Please use other side if more space is needed.

Comment forms may be mailed to:
Mr. Michael Wahlig
Document Manager
National Nuclear Security Administration
Livermore Site Office, L-293
7000 East Avenue
Livermore, CA 94550

Comment forms may be faxed to:
Mr. Michael Wahlig
(925) 423-5650

Comments may also be emailed to: SupplementAnalysisComments@doeal.gov.

Received at 14 April 2011 Public Informational Meeting

Draft Supplement Analysis of the 2005 Final Site-wide Environmental Impact Statement for Continued Operation of Lawrence Livermore National Laboratory
U.S. Department of Energy
National Nuclear Security Administration
Livermore, CA

National Nuclear Security Administration

Written Comment Form

Must be postmarked, emailed or faxed on or before May 13, 2011

Name: Jackie Cabasso, Executive Director

Address: Western States Legal Foundation
655-13th Street, Suite 201, Oakland, CA 94612

SUBJECT/RESOURCE: Request for additional information

I asked the following questions during the April 14 evening session in Livermore. Doug Eddy told me to submit ~~them~~ them as a comment. I would like an answer.

4-1 1) Are the larger yield NIF experiments related in any way to weapons effects tests?

4-2 2) In general, can you direct me to the most current and comprehensive documents describing current and projected programmatic purposes of NIF experiments?

Please use other side if more space is needed.

Comment forms may be mailed to:
Mr. Michael Wahlig
Document Manager
National Nuclear Security Administration
Livermore Site Office, L-293
7000 East Avenue
Livermore, CA 94550

Comment forms may be faxed to:
Mr. Michael Wahlig
(925) 423-5650

Comments may also be emailed to: SupplementAnalysisComments@doeal.gov.

Recd 3 May 2011

Draft Supplement Analysis of the 2005 Final Site-wide Environmental Impact Statement for Continued Operation of Lawrence Livermore National Laboratory
U.S. Department of Energy
National Nuclear Security Administration
Livermore, CA

National Nuclear Security Administration

Written Comment Form
Must be postmarked, emailed or faxed on or before May 13, 2011

Name: Beverly King
Address: 645 N Livermore Ave #8
Livermore CA 94551

SUBJECT/RESOURCE: _____

I am fascinated by the NIF and its great potential for service in many aspects, but the Lab's focus is thermo nuclear explosion. After years of experiments and billions of dollars not much has been accomplished and the risk of radiation is still a major concern. Yet the plan
5-1 is to increase the active tritium from .05g to .8g, a seemingly tiny amount, but this material is radioactive. Also beryllium emenations are to be increased 16 fold.

5-2 The supplemental EIS should have very concrete and exact explanations worded so that everyone like me can

Please use other side if more space is needed.

Comment forms may be mailed to:
Mr. Michael Wahlig
Document Manager
National Nuclear Security Administration
Livermore Site Office, L-293
7000 East Avenue
Livermore, CA 94550

Comment forms may be faxed to:
Mr. Michael Wahlig
(925) 423-5650

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5-2 cont understand it. It is important that the community understand in language that is not couched in euphamisms and abstractions at which you are all masters. I may not be scientifically adept, but the smell of snake oil is pungent. So although the technology has great potential, it needs to be discussed clearly and honestly.

5-3 Just perhaps the objections to the Lab's plans are justifiable and need to be incorporated into the plans. The bottom line is radiation is lethal whether in the air, water, soil or living things. If used, it must be under the strictest regulations that are understood by all.

As a community resident with little scientific or technical knowledge I am aware of the effects of radiation and our limited knowledge of its dangers.

5-4 The 2011 Statement Analysis of the 2005 Final State-wide Environmental Impact Statement concluded that the impacts of radioactive elements used were insignificant and did not need further analysis. I attended the SWEIS meeting in Livermore in April. Many Lab experts were there and the simplistic posters explained procedures. The intent of the meeting was to inform the citizens of the Lab's nuclear activities. Technical questions that were asked by the community were glossed over by the experts.

Wahlig, Michael

From: Kovac, Scott <Alert>
Sent: Wednesday, May 04, 2011 11:30 AM
To: wahlig2@llnl.gov
Cc: Kelley, Marylia; Scott Yundt
Subject: My Comment on LLNL's Supplement Analysis to the 2005 SWEIS

To: Mr. Michael Wahlig, Document Manager
DOE/NNSA Livermore Site Office, L-293
7000 East Avenue, Livermore, CA 94551-0808
My Comment on LLNL's Supplement Analysis to the 2005 SWEIS

Dear Mr. Wahlig,

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6-4 A Supplement Analysis is not the place to approve this type of increase.

6-5 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

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Sincerely,

Scott Kovac
Operations and Research Director
Nuclear Watch New Mexico
551 W. Cordova Road #808
Santa Fe, NM, 87505
505.989.7342 office & fax
www.nukewatch.org

Wahlig, Michael

From: Matthew Swyers [mswyers@earthlink.net]
Sent: Saturday, May 07, 2011 11:54 AM
To: (G) Supplement Analysis Comments
Subject: Comment on LLNL SWEIS

Comment on Department of Energy (DOE) National Nuclear Security Administration (NNSA) Draft Supplement Analysis of the 2005 Final Site-Wide Environmental Impact Statement (SWEIS) for Continued Operation of Lawrence Livermore Laboratory

7-1 I have not lived in Livermore for as long as many others here, but in this short time I have witnessed several times the Lawrence Livermore National Laboratory violate the law and common sense in protecting the public. For these reasons alone they should be required to do a complete Site-Wide Environmental Impact Statement (SWEIS).

In September 2005 the Lab breached security, access requirements, and violated shipping laws leading to a release of anthrax during a transfer to two other laboratories, one in Virginia and one in Florida. The incident resulted in worker exposure to anthrax and a $450,000 fine, the largest levied in recent history by the Department of Health and Human Services (DHHS).

The Lab has multiple times resisted cleanup of the toxic plume under Big Trees Park and the surrounding neighborhood. It has only been through repeated pressure and lawsuits that the lab has started to comply completely as is their responsibility. When budget concerns caused the shutdown of toxic cleanup at the labs, they failed to take advantage of stimulus money that was available to continue the cleanup. This speaks to a pattern of neglect by the Lab to show due diligence in their responsibility for cleanup from their activities.

7-2 Currently, the Livermore Lab is proposing a 50-fold increase for beryllium use, despite the fact that Lab management was recently fined $200,000 for multiple, uncontrolled worker exposures to this toxic metal.

Recently, while collecting signatures for a petition to compel adequate funding to clean up toxic and radioactive contamination at Livermore Lab, I had a conversation with a lab worker who refused to sign the petition. When I asked him why he had refused, he said "if people don't like what we do out there, they can move out of the area." When I pressed him further and asked if he thought the lab had any responsibility for cleaning up the damage to the environment they had created, he said, "Hell no!" If this is indicative of the attitude at the labs, or even tolerated, I
7-3 think it is time to do an entirely new SWEIS and investigate these lapses in safety procedures which appear to be regular and ongoing.

1

7-4 As a resident of Livermore, I cannot support the continuation of these dangerous and apparently unmonitored activities without a full assessment of their necessity and environmental impact on the community.

Matthew Swyers
1020 Dolores St #28
Livermore, CA
94550-4770
925-292-1365
mswyers@earthlink.net

Wahlig, Michael

From: Winifred T. Detwiler [winnied@dcn.org]
Sent: Thursday, May 12, 2011 2:01 PM
To: (G) Supplement Analysis Comments
Subject: Draft of renewal of 2005 SWEIS for LLNL

As proposed, the Draft Supplemental Analysis (SA) to the Department of Energy's National Nuclear Security Administration's Lawrence Livermore National Laboratory LLNL Site-wide Environmental Impact Statement (SWEIS) is significantly lacking compliance with the National Environmental Policy Act (NEPA), and ignores the potential for increased toxic exposure to employees and the laboratory's surrounding area.

NEPA requires descriptions of proposed actions to include connected actions that are currently proposed or will be proposed in the foreseeable future. The draft SA covers new proposals for programs, construction, and development at both the LLNL main site and Site 300, resulting in increased airborne radiation emissions at the National Ignition Facility and added nuclear waste production.

8-1 1. The draft SA does not analyze the Target Fabrication Facility, which could cause increased tritium emissions and release of other dangerous contaminants.

8-2 2. It similarly ignores the Livermore Valley Open Campus (LVOC) initiative, a collaboration between Sandia/California, LLNL, and other partners, which was not part of the original 2005 SWEIS.

8-3 3. The assertion that endangered species will not be impacted by the proposed activities is not based on Programmatic Biological Assessments (PBAs), as these assessments have not been done, only proposed.

8-4 4. The proposed increase in tritium releases from 30 to 80 Ci per year is an unacceptable hazard to all those directly affected and those impacted by long-range exposure.

8-5 5. The proposed increase in the NIF's use of beryllium is not examined, especially critical in light of past deficiencies in Laboratory management which led to multiple instances of exposure to workers, from 2007-2010.

8-6 6. Huge increases in hazardous wastes (radioactive mixed and transuranic wastes) are proposed, which again should require a complete new SWEIS and compliance with the NEPA.

Winifred Detwiler

909 12th St # 118

Sacramento CA 95814

COMMENTS ON:	SUPPLEMENT ANALYSIS of the 2005 Final Site-wide Environmental Impact Statement For Continued Operation of Lawrence Livermore National Laboratory, March 2011 (reference DOE-2011)
Date of comments:	5/13/2011
Comments by:	Carl N. Anderson 439 49th St. #35 Oakland, CA 94609-2156 phone (510) 654-4983
Sent to:	SupplementAnalysisComments@doeal.gov (via email as attached file, format MS Word 1997-2004 .doc) Mr. Michael Wahlig Document Manager NNSA, Livermore Site Office L-293 7000 East Avenue Livermore, CA 94550 (postal mail)

1. GENERAL

1.1 I attended the public meeting of 4/14/2011 but didn't submit written comments then. The public meeting was helpful.

1.2 These comments have a reference list at the end.

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

9-1 I endorse the comments on this topic by Tri-Valley CAREs (TVC-Initial, heading 1).

2. CRITICALITY AT THE NATIONAL IGNITION FACILITY

9-2 In my written comments of May 2004, I expressed a concern that under the temperatures and pressures created by the NIF, criticality might occur. (Anderson-2004c). My 2004 comment was based on the extreme temperatures and pressures produced by the NIF (much higher than the T&P created by chemical explosives in implosion-type nuclear weapons) and the observation:
Most weapons in the U.S. arsenal are believed to use only a fraction of a critical mass (at normal density)—a "fractional crit"—as the fissile component.
(Cochran et al-1984, page 25)

9-2 cont DOE's response was:
The quantities of plutonium and highly enriched uranium used in these experiments are too small to experience criticality under the highest temperatures and pressures generated by the NIF.
(DOE-2005, vol. 4, p. 3-71.)
This was not an adequate explanation.

At the Public Information Meeting of 4/14/2011, DOE provided a more detailed response, something to this effect: The amount of fissile and/or fissionable material is small enough (not to exceed a few grams) that the energy produced by fission would blow the material apart before fission would be **sustained** to a yield that would count as an explosion.

2.1 I now agree that "criticality," as thus understood, will not occur.

But regarding the placement of fissile and/or fissionable isotopes in NIF targets, there are three related issues that still need attention:

2.2 DOE should publish a statement explaining why my concern of 2004 does not apply. If such a statement has been published, please reference it.

9-3 2.3 NIF's use of gram-scale quantities of these isotopes sometimes produces appreciable amounts of fission products with half-lives of the scale of decades, most importantly cesium-137. The EIS process must adequately prove that Cs-137 cannot be released. Cs-137 pollution is a major long-term consequence of the Chernobyl accident; it is principally this isotope which keeps people out of agricultural land, forests, etc. In the current Fukushima accident, rice farmers are understandably concerned that they won't be able to farm their rice land; Cs-137 will be the big isotope there. The analysis should also consider shorter-lived isotopes such as iodine-131.

9-4 2.4 Why are fissile or fissionable isotopes in NIF targets in the first place? To research fusion? I doubt it. The only reason I can imagine is "weapons effect testing" which principally means the effects of nuclear warheads on other nuclear warheads, i.e., nuclear escalation, nuclear war-fighting, etc.

3. PLUTONIUM AVLIS

In 2004, I sharply criticized the idea of atomic vapor laser isotope separation for plutonium production. (Anderson-2004a). DOE responded that AMP (Advanced Materials Program) and ITP (Integrated Technology Project) were removed from "No Action" and "Proposed Action." (DOE-2005, vol. 4, page 3-77).

9-5 Is it correct that AMP and ITP are the only places in the 2004-05 project where Pu-AVLIS was covered? Please confirm that Pu-AVLIS is excluded from all current proposals; or if it's still on the table, explain why it's not ridiculous.

4. BSL-3 FACILITY

In 2004, I criticized the Biosafety Level-3 Facility, particularly as a co-location issue with possibly severe consequences via international distrust stimulated by the location of BSL-3 at Livermore. (Anderson-2004a and -2004b). DOE's responses (DOE-2005, vol. 4, points 01.02, 02.01, and 35.01) referred briefly to co-location (p. 3-93) but never replied to this point, instead replying to other issues such as treaty compliance.

9-6 I understand that the BSL-3 has since been built at a nuclear-weapons laboratory (to wit LLNL; see DOE-2011 p. 3-2), and the world will have to face any negative consequences of that. However "continued operation" is in the title of the current project, so a reply is required. I suppose that DOE continues to reject my underlying points (as was attempted in DOE-2005), but DOE should reply to the specific issue: co-location as a spur to suspicion of U.S. actions. Analogous suspicions (in the U.S.) were part of the rationale for the invasion of Iraq, of course.

5. TARGET FABRICATION FACILITY

9-1 I endorse the comments on this topic by Tri-Valley CAREs (TVC-Initial, heading 2a).

6. BUFFER ZONE

9-7 LLNL currently has a buffer zone which is a substantial land area along the Vasco Road and Patterson Pass Road sides of the main lab. The land use portions of your draft (DOE-2011 pp. 3-3 through 3-5) imply that much of this land will be converted to "graded security" and would be built on.

This would be a mistake. The visible buffer zone is a valuable symbol of what goes on at LLNL, and by its very visibility makes the leakage of weapons technology less likely. "Open campus": the very name risks leakage.

If it is desired to build facilities that would have entrance permissions less than LLNL's main area, it would be better to build them away from LLNL's main area, perhaps within the Livermore Valley, but visibly separated from LLNL, say with property lines at least half a mile outside LLNL's outermost fence.

9-1 I also endorse the comments on this topic by Tri-Valley CAREs (TVC-Initial, heading 2b).

7. BERYLLIUM; RADIOACTIVE, MIXED AND TRANSURANIC WASTE

9-1 I endorse the comments on these topics by Tri-Valley CAREs (TVC-Initial, headings 6 and 7).

8. INTENTIONAL DESTRUCTIVE ACTS

The draft (DOE-2011) has 4 pages titled "Intentional Destructive Acts." The plain meaning of these words certainly includes the detonation of items whose design and maintenance are LLNL's raison d'être, on the territory of a country other than the United States.

From the general wording of these 4 pages, I surmise that DOE considers such actions to be outside the scope of "intentional destructive acts." But DOE's avoidance of the plain meaning is an example of what Albert Einstein meant: *The power of the atom has changed everything save our modes of thinking, and thus we drift toward unparalleled catastrophe.*

9-1 I also endorse the comments on this topic by Tri-Valley CAREs (TVC-Initial, heading 8).

REFERENCES

Anderson-2004a

Written comments, April 27, 2004, in file:
http://nepa.energy.gov/nepa_documents/EIS/eis0348/Vol_4/chap2-1.pdf

Anderson-2004b

Oral comments, April 27, 2004, in file:
http://nepa.energy.gov/nepa_documents/EIS/eis0348/Vol_4/chap2-40.pdf

Anderson-2004c

Written comments, May 27, 2004, in file:
http://nepa.energy.gov/nepa_documents/EIS/eis0348/Vol_4/chap2-1.pdf

Cochran et al-1984

Nuclear Weapons Primer. Chapter 2 of: Nuclear Weapons Databook: Volume I - U.S. Nuclear Forces and Capabilities by Thomas B. Cochran, William M. Arkin and Milton M. Hoenig (1984)

DOE-2004

DOE/EIS-0348
DOE/EIS-0236-S3
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

DOE-2005

DOE/EIS-0348; DOE/EIS-0236-S3; Final Site-wide Environmental Impact Statement for Continued Operation of Lawrence Livermore National Laboratory and Supplemental Stockpile Stewardship and Management Programmatic Environmental Impact Statement
March 2005. Available at:
http://nepa.energy.gov/finalEIS-0348-EIS-0236.htm
(To DOE: Thank you for providing this link. Somewhere, I have a CD-ROM of this document, but it's easier to find this document on the Internet.)

DOE-2011

SUPPLEMENT ANALYSIS of the 2005 Final Site-wide Environmental Impact Statement For Continued Operation of Lawrence Livermore National Laboratory, March 2011

TVC-Initial

Initial Comments and Questions on the Draft Supplement Analysis to the 2005 Site-Wide Environmental Impact Statement for the Lawrence Livermore National Laboratory
Tri-Valley CAREs, April 2011. Available at:
http://www.trivalleycares.org/new/Comment%20on%20the%202011%20SA-%204-13-11.pdf

Rec'd 13 May 2011

Draft Supplement Analysis of the 2005 Final Site-wide Environmental Impact Statement for Continued Operation of Lawrence Livermore National Laboratory
U.S. Department of Energy
National Nuclear Security Administration
Livermore, CA

National Nuclear Security Administration

Written Comment Form

Must be postmarked, emailed or faxed on or before May 13, 2011

Name: Janis Turner

Address: 749 Hazel St.
Livermore, Ca 94550

SUBJECT/RESOURCE: Increased risks at National Ignition Facility

10-1 I am very concerned about the operational changes at NIF that include increasing the maximum radioactive tritium inventory from .05g to .8g and I have concerns about increase in tritium air emissions from NIF from 30 Ci/yr to 80 Ci/year. This is a significant increase.

10-2 As a residential neighbor of LLNL main site, I have concerns about the increase in tritium emissions from NIF due to skyshine (the scattering off the atmosphere of NIF produced neutrons). This increased exposure to radiation is a threat to my health & the health of LLNL employees.

Please use other side if more space is needed.

Comment forms may be mailed to:
Mr. Michael Wahlig
Document Manager
National Nuclear Security Administration
Livermore Site Office, L-293
7000 East Avenue
Livermore, CA 94550

Comment forms may be faxed to:
Mr. Michael Wahlig
(925) 423-5650

Comments may also be emailed to: SupplementAnalysisComments@doeal.gov.

3.0 RESPONSE TO COMMENTS

3.1 Response to Comments from Document 1: Tri-Valley CAREs

Comment Code 1-1

Response: NNSA comprehensively searched a number of sources to develop a list of issue areas, projects, facilities, and new proposals. As a result, 23 proposals were identified; 4 of the 23 proposals were determined to be insufficiently defined, not likely to be funded, or were not reasonably foreseeable for the 2010-2015 time period. The remaining 19 projects were subject to careful review in the SA. That review established that none would pose a significant impact on the environment either individually or cumulatively. If changes or new circumstances warrant, additional NEPA review would be conducted as necessary.

Many more projects were listed in program or site planning documents for 10-year site planning purposes; however, their mention in the site planning documents did not automatically trigger their NEPA review as part of this action. For NEPA to apply, the projects must be reasonably foreseeable within the time frame for the site-wide review, have defined purposes and needs, and have sufficient project descriptions to develop alternatives for NEPA documentation. If subsequent consideration of any of these projects warrants NEPA review, NNSA would conduct that review.

Several of the 19 projects may support or enhance existing programs and facilities. For an R&D facility like LLNL, program enhancements or changes in operational parameters cannot typically be forecast for the life of the facility. Also, new sponsors and funding organizations necessarily have a constantly evolving concept of how to modify and use such a facility for new research purposes. Such evolution of R&D facilities could require building modifications, changes in operational parameters, or construction of additional support facilities. Since the need for such program enhancements or changes is developed at a much later date than when the facility was originally constructed, separate NEPA reviews for the changes enhances, rather than segments, the NEPA process. Additionally, the impacts from such program enhancements are analyzed individually and cumulatively in NEPA documents, as they are also presented in this SA.

Comment Code 1-2

Response: The SA included analyses for the proposals to realign the fence lines on both the eastside and northwest portion of LLNL that would provide graded security site access for foreign nationals and other collaborators. The SA also provided an analysis of individual facilities that may be included in these general access areas and are reasonably foreseeable in the 2010-2015 time period. The facilities considered provide a stand-alone function and are therefore subject to their own NEPA review requirements even though they would be located in open access areas such as the

Livermore Valley Open Campus (LVOC). New facilities envisioned after 2015 for the general access areas would be constructed after completion of their specific NEPA reviews, as is done for any new facility at LLNL. Therefore, NNSA does not intend to change the SA on the basis of this comment.

Comment Code 1-3
Response: See Comment Responses 1-23 and 1-24.

Comment Code 1-4
Response: See Comment Response 1-34.

Comment Code 1-5
Response: NNSA followed DOE NEPA regulation 10 CRF 1021.314(c) that specifies that a SA be prepared to resolve whether the existing SWEIS remains adequate in view of new circumstances or information relevant to environmental concerns. The SA reviewed all ongoing operations and programmatic enhancements for the next 5-year period, 2010 to 2015, and the analysis showed that projections remain consistent with impacts analyzed in the 2005 SWEIS; and for the few instances where projections differ from the 2005 SWEIS analysis, the changes in environmental impacts are not significant. NNSA enhanced stakeholder participation by providing the draft SA to the public, including two public information meetings where comments were solicited. NNSA has considered this comment and does not plan to make changes based on the comment.

Comment Code 1-6
Response: In accordance with its regulatory obligations, NNSA is considering new projects, as well as modified and existing projects during the SA process. All of this information will serve as the basis for the decision whether or not to prepare a new SWEIS or supplemental EIS.

Comment Code 1-7
Response: See Comment Responses 1-1, 1-2, 1-9, and 1-11.

Comment Code 1-8
Response: The intention was to remove all references to the Target Fabrication Facility (TFF) from the text in the Draft SA. In proofreading after release of the Draft SA for public review, we found two places in the text where it had not been removed. All references to TFF have been removed in the final version of the SA.

Comment Code 1-9
Response: The Target Fabrication Facility (TFF), if ever constructed, could serve to consolidate target preparation work at LLNL for the purposes of inertial confinement fusion and high energy density physics. That capability currently exists at other offsite facilities. The TFF remains a concept with no immediate need, funding, or construction plans, and is not reasonably foreseeable for the 2010-2015 period. If

NNSA were to determine a need for the facility, it would be included in subsequent project-specific or site-wide NEPA reviews.

Comment Code 1-10

Response: As described in Comment Response 1-9, the TFF is only a concept that could replace existing target fabrication capabilities at other offsite facilities. While it potentially could reduce damage concerns to target assemblies from fabrication and transportation issues, it is not necessary for the operation of NIF. NIF can fully operate with target assemblies from offsite facilities with its new operational parameters without the TFF.

Comment Code 1-11

Response: The NNSA has considered whether proper NEPA review of the Tritium Facility Modernization Project (TFM) has taken place; whether its tritium emissions, combined with those of NIF, require a new SWEIS or Supplemental EIS; and whether the TFM should be considered as part of NIF.

The TFM is covered by the 2005 SWEIS under the No-Action Alternative, and is also part of the SWEIS Proposed Action Alternative (see Appendix A, Table A.2.3-1, of the SWEIS). A Categorical Exclusion (CX #NA-03-09), completed in 2003, covered modification and equipment upgrade of certain sections of the Tritium Facility, Building 331 (B331), providing enhanced hydrogen isotope research capabilities at elevated pressures, high purities, and cryogenic-to-high temperatures. The modernized capability supports the NNSA stockpile stewardship program by providing necessary infrastructure for high energy density physics. The filling of targets assembled offsite for NIF is one small part of the Tritium Facility's work. The Tritium Facility has traditionally performed tritium operations for a variety of purposes since its creation as an operational facility. The 2005 SWEIS included projections for tritium emissions from B331, including those from the TFM, of approximately 210 Ci/yr. There are no planned changes to these projections in the SA.

As part of B331, the TFM has been considered in the SA. It also was identified as one of the support facilities and functions that would be required to operate and maintain the NIF systems in the 1996 Final Programmatic EIS for Stockpile Stewardship and Management (1996 SSM PEIS). The programmatic need to modify sections of B331 for the TFM arose after completion of the 1996 SSM PEIS document. The additional equipment and its operations were considered in the 2005 SWEIS.

NNSA has concluded that operations at the TFM have been the subject of proper NEPA actions that remain valid. Its environmental impact, in conjunction with those of other LLNL activities, does not exceed that anticipated in the 2005 SWEIS.

Comment Code 1-12

Response: See Comment Responses 1-1 and 1-2.

Comment Code 1-13

Response: The environmental impacts of new and modified projects and modifications in site operations are presented in the SA, and that analysis shows that the projections remain consistent with impacts analyzed in the 2005 SWEIS. As described in the SA, the few instances where projections differ from the 2005 SWEIS analysis result in no significant environmental impact beyond those identified in the 2005 SWEIS.

Comment Code 1-14

Response: As stated in the SA, the potential 5-mrem isodose contour for a 120 MJ shot would extend outside the walls of the NIF Target Bay and Switchyards, but would remain inside the LLNL Livermore site within the NIF fenced area. It would not extend to the UC Davis Center, the Visitor's Center, or other areas accessible to the public. All workers on the LLNL site are monitored for radiation exposure. NIF currently posts radiological warning signs and demarks any accessible area where the dose could exceed 5 mrem during a shot, and would continue to do this for those areas affected by any shot up to the 120 MJ level.

Workers are trained to recognize these postings and know that additional radiation worker training is required to enter the posted area, in addition to having NIF site access. Generally, the majority of NIF experiments would be lower yield experiments, and the 5-mrem isodose contour area would remain within the Target Bay and Switchyard walls. The 5-mrem zone was chosen because it is defined as a radiation area in 10 CFR 835, Occupational Radiation Protection. Areas below 5-mrem in one hour are not considered radiation areas for occupation radiation protection, and no notification or posting of these areas is required. This is consistent with the requirements of 10 CFR 835.

Comment Code 1-15

Response: See Comment Response 1-14. It is important to note that any radiation emitted is "prompt" radiation, which does not persist after the moment of the shot. There is no residual radiation. After the shot, the area would be de-posted and access by non-Radiation Workers would be restored. Administrative procedures incorporate LLNL ISMS and DOE's ALARA principles, and no additional coordination with other lab programs or security is needed.

Comment Code 1-16

Response: Blast is not an appropriate description of yield shots. During yield shots, energy is released from fusion processes in the form of gamma and neutron radiation, and kinetic energy of generated particles. Because experiments are done at vacuum, no shock wave is generated in the target chamber to give a "blast" effect. In order to get high yields, NIF experiments must have already achieved ignition (energy released equals or exceeds the laser energy absorbed by the target).

There are no specific experiments associated with the 120 MJ limit at this time. Since 120 MJ operations are within the projected capability of the NIF within the 2015 time

frame and there is both national and international interest in fusion energy-related research in this energy range, the SA presents information on the projected increase to provide the full operational capability should experiments be proposed.

Comment Code 1-17

Response: NNSA has consulted with the U.S. Fish and Wildlife Service (USFWS) regarding potential impacts to listed species that may occur during specific projects and site-wide routine maintenance at the Livermore main site and Site 300 since the early 1990s. These consultations have resulted in several Biological Opinions (BO) and associated amendments. LLNL's consultation history is described in the LLNL SWEIS. Additional consultations that have occurred since the LLNL SWEIS was completed are described in Section 3.3.2.

LLNL has begun a programmatic consultation with the USFWS regarding potential impacts to listed species that may occur during routine and proposed projects for both the Livermore Site and Site 300. As part of this consultation, LLNL submitted a Programmatic Biological Assessment (PBA) to the USFWS on April 15, 2011. Because potential impacts would be minimized by the implementation of avoidance and minimization measures at both sites that are consistent with current practices, impacts to protected species are not anticipated. In addition, the Site 300 Conservation Area and the Livermore Site Conservation Buffer would provide valuable protection to listed species.

Comment Code 1-18

Response: The goal of the Livermore site conservation buffer is to limit construction activities and new development in the area immediately adjacent to Arroyo las Positas and Arroyo Seco to minimize take of California red-legged frogs within these areas. The area proposed as a conservation buffer occurs adjacent to the Arroyo las Positas in the East Buffer Zone, north of Arroyo las Positas where it flows just south of the North Buffer Zone, and adjacent to both banks of the Arroyo las Positas where it flows northward through the North Buffer Zone. The proposed conservation buffer also occupies a 100-foot corridor adjacent to Arroyo Seco where it flows through the Southwest Buffer Zone.

The proposed conservation buffer areas consist primarily of annual grasslands adjacent to Arroyo las Positas and Arroyo Seco. The proposed conservation buffers occur in semi-developed areas that contain existing structures including overhead power lines, gravel access roads, security fence lines, dirt access roads, underground power lines, environmental monitoring equipment, and structures associated with environmental restoration conducted as part of the CERCLA process adjacent to annual grasslands. Potential impacts to California red-legged frogs that may occur as a result of maintenance are addressed in the existing *Formal Consultation on the Proposed Arroyo Maintenance Project on Arroyo las Positas at Lawrence Livermore National Laboratory* and subsequent amendments. In addition, the minimal impacts that may result from maintenance of these facilities are not likely to impact listed species.

California red-legged frogs are known to spend time in upland habitat that is adjacent to aquatic habitat such as the North Buffer Zone. By maintaining the current level of activity adjacent to the Arroyos, LLNL would minimize the potential for direct impacts to this species that may result from construction and use of new facilities and also minimize the potential for indirect impacts that may result from impacts to water quality in the Arroyos that could result from new development adjacent to these waterways.

Although existing security fences occur within the proposed conservation buffer, no security fence relocation projects are proposed for this area.

Comment Code 1-19

Response: The proposed Site 300 Conservation Area has not yet been finalized; therefore the final Conservation Area designation may vary from what is described below. The proposed Conservation Area occupies 1277 acres in three areas at Site 300. The location of the proposed Conservation Area was chosen to encompass areas of abundant biological diversity that can be dedicated for the preservation of listed species with minimal impacts to the Site 300 programmatic mission. Wherever possible, the boundaries of the proposed Conservation Area coincide with watershed boundaries and other landmarks such as fire trails and the boundary of the *Amsinckia grandiflora* Reserve.

The area proposed by NNSA as a Conservation Area includes much of the biodiversity of Site 300 including special habitats (e.g., coastal scrub, vernal pools, oak woodland, seeps, and springs), listed species, and rare species that are not currently listed but may become listed in the future. The proposed Conservation Area includes several important aquatic features such as seeps and perennial and intermittent springs which occur along the bottom of steep-sided drainages. This network of drainages, seeps, and springs support a breeding population of California red-legged frogs. A metapopulation of California tiger salamanders also breeds in several pools in the proposed Conservation Area. The proposed Conservation Area also contains the majority of the Site's coastal scrub habitat, which comprises most potential Alameda whipsnake habitat found at Site 300. Numerous stands of blue elderberry bushes are also found within the proposed Conservation Area. Valley elderberry longhorn beetles were observed at Site 300 during surveys conducted in 2002.

Several additional rare species are found within the proposed Conservation Area that are not federally-listed including the Diamond petaled poppy, round-leaved filaree, Western Burrowing Owl, American badger, and the coast horned lizard.

Comment Code 1-20

Response: The Programmatic Biological Opinion and maps of the Site 300 Conservation Area will be publically available after the protection and boundaries of the

Conservation Area have been accepted through an agreement between the U.S. Fish and Wildlife Service and NNSA.

Comment Code 1-21

Response: The Programmatic Biological Assessment was completed and sent to the U.S. Fish and Wildlife Service and NNSA on April 15, 2011.

Comment Code 1-22

Response: Although a BO was not issued after the submittal of the 2004 BA, a revised BA was submitted to the USFWS in December 2007. In response, the USFWS issued an amendment to the existing BO for maintenance activities at the Livermore site in December 2010, and an amendment to the existing BO for maintenance activities at Site 300 was issued in August 2007.

Comment Code 1-23

Response: The potential impacts of radiological air emissions were analyzed in the 2005 SWEIS and additional information was provided in this SA. In drafting this SA, NNSA carefully considered the projected change in tritium emissions from NIF from 30 Ci/yr to 80 Ci/yr. The SA presents impacts associated with this change in emissions. The dose to the Maximally Exposed Individual (MEI) from all LLNL airborne air emissions would change from 0.126 mrem/yr (8 in 100 million chance of latent cancer fatalities [LCF] per year) to 0.142 mrem/yr (8.4 in 100 million chance of LCF/yr), which remains well below 2 percent of the Federal NESHAPs standard of 10 mrem/yr site-wide for routine radiological airborne emissions. For this reason, NNSA concluded that the environmental impacts over the 2005 SWEIS are not significant, and the 2005 SWEIS remains adequate.

Comment Code 1-24

Response: See Comment Responses 1-11 and 1-23. The combined impacts of B331 (210 Ci per year, including the TFM) and the NIF (change from 30 Ci/yr to 80 Ci/yr) are presented in this SA. This SA concluded that the changes in environmental impacts are not significant. The NNSA has determined that the combined impacts do not warrant preparation of the new SWEIS or Supplemental EIS.

Comment Code 1-25

Response: The SA provides reasons for changing tritium emissions from the NIF. The capture system utilized at the NIF includes molecular sieve beds, which is the state-of-the-art technology for capturing tritium emissions. The molecular sieve beds are disposed of as radioactive waste when either the capacity of the beds is reached or when facility tritium inventories dictate that they be removed. NIF would like to optimize operations, considering the trade-offs among worker exposure, radioactive waste, and airborne emissions. The number of molecular sieve change outs can be reduced by sending air effluents with very low tritium concentrations directly to the monitored exhaust systems. This optimizes the use of the molecular sieves, allowing for capture of higher concentrations of tritium while avoiding excessive radioactive waste generation for low tritium concentrations and potential worker exposures from

frequent molecular sieve change outs. NIF is considering more efficient target fill approaches, such as utilizing palladium beds or fill bottles. This would require less frequent access to target positioners, reducing the need to send low concentrations streams through the exhaust system.

Comment Code 1-26

Response: The impacts from routine radiological airborne emissions from LLNL were presented in this SA (see Comment Response 1-23). Since the potential impacts from these emissions are well below (less than 2 percent of) the Federal NESHAPs standard, no public notification is contemplated during normal operations. However, LLNL coordinates emergency planning with local cities and counties to ensure appropriate response (including notification when necessary) in case of inadvertent or accidental releases of hazardous and radiological materials.

Comment Code 1-27

Response: The Environmental Protection Agency provides information regarding air emissions from the Fukushima reactors (see http://www.epa.gov/japan2011/). The radiological emissions for all LLNL activities have been discussed in the air quality portion of the SA, Section 3.4. The potential emissions from other sources are addressed in Section 5.3, Air Quality Cumulative Impacts.

Comment Code 1-28

Response: There are no plans to increase beryllium (Be) use or throughput in NIF experiments; the only increase would be in stationary inventory as contamination on first wall panels within the NIF target chamber. Rather than exposing workers and generating waste when the current low Be inventory is reached, NNSA proposes leaving first wall panels in place until a larger Be inventory has accumulated on them. As stated in the SA, the increase in Be inventory at the NIF is needed to allow for Be contamination to remain in place within the Target Chamber, as opposed to periodic decontamination or replacement and disposal of first wall panels. This will allow the first wall panels to remain in place for extended periods of time, possibly for the lifetime of the facility. This practice is intended to avoid unnecessary worker exposure or increase in waste generation that could occur if the panels were removed and decontaminated on a periodic basis. Personnel working around these wall panels would use appropriate personal protective equipment and Be safety practices.

Comment Code 1-29

Response: See Comment Response 1-28. If Be contamination on first wall panels is allowed to accumulate, the total worker exposure would be lower than if the panels were removed and decontaminated on a periodic basis. The current High Efficiency Particulate Air (HEPA)-filtered ventilation systems provide adequate protection for both non-beryllium workers and the public for both current and proposed Be limits. Workers entering the Target Chamber would continue to wear appropriate personnel protective equipment (PPE), and follow operational procedures to avoid unnecessary contact with wall panels and other contaminated surfaces. No Be would be released from the facility during routine operations and target assembly change-outs. In

assessing the potential for accidental release, the SA considered the consequences of accidental release of the entire inventory of 1 kg of Be from within the Target Chamber. Even under this extremely conservative assumption, the impact at the site boundary would be approximately 20% of the emergency response planning guidelines (ERPG)-2 value.

Comment Code 1-30

Response: No beryllium would be released from the facility during routine operations. Therefore, there would no impacts to non-involved workers or the public. As part of the evaluation of the impacts to the public from an accident scenario involving beryllium, the impacts to LLNL workers were also considered. Onsite workers would not be exposed to beryllium concentrations that would result in significant acute health effects. Note that the maximum proposed facility inventory of beryllium is approximately 20% of the beryllium Reportable Quantity (RQ) value of 10 lbs.

Comment Code 1-31

Response: The table on page 3-67 provides information related to operational changes that occurred at LLNL during the years 2005 to 2010. The SA described that in 2006, NNSA reviewed consequences of the bounding accident for Building 625 with possible configurations of container-loading limits containing 18 PE Ci. This accident involving 50 drums resulted in a source term within the bounds of the 2005 SWEIS.

On page 3-69, the SA provides results of accident analyses for B625 and B696R using configurations with container-loading limits of 50 PE-Ci consistent with existing safety documents. The results of these analyses take into account the EPA-recommended Federal Guidance Report (FGR-13) dose conversion factors – an apparent reduction by a factor of 5.2 when compared to FGR-11 values for plutonium used in the SWEIS. Therefore, even with almost 3-fold increase in drum configurations the resultant consequences remain below the SWEIS bounding accident scenario. The proposed 50 PE-Ci values for drum configurations are not an action anticipated to have environmental impacts beyond those contemplated in the 2005 SWEIS.

Comment Code 1-32

Response: The conditions that resulted in the 2005 worker exposure were addressed and corrected. As stated in the SA, there are no significant changes to worker health and safety impacts from the increased routine and non-routine waste volumes. Additionally, doses to workers in the past 5 years (2005 to 2009), listed in Table 3.8-1 of the SA, remain below the projections in the SWEIS. Workers continue to follow LLNL's ISMS guidelines and DOE's ALARA principles, which incorporate the requirements of 10 CFR 830, *Nuclear Safety Management*, 10 CFR 835, *Occupational Radiation Protection*, and 10 CFR 851, *Worker Safety and Health Program*. No new information relevant to environmental concerns was identified that changes the analysis in the SWEIS.

Comment Code 1-33

Response: The model used was MACCS2 code, a model that has been validated and accepted as one of DOE's "Toolbox" for modeling radiological accident scenarios. Other models could be used for the analysis, as long as they are validated and accepted in the "Toolbox," and use the same input parameters. MACCS2 code, like other codes such as Gen-II and Hotspot, use an extremely conservative Gaussian plume model.

Comment Code 1-34

Response: The SA stated that the routine generation rates are projected to increase due to operations at NIF & PS and WCI Principal Directorate facilities, which would generate almost 90% of the waste. A large portion of the routine LLW that LLNL anticipates generating is from wipe cleaning waste as well as personal protective equipment (PPE) such as coveralls, gloves, and booties. The increase in routine LLW above that anticipated in the 2005 SWEIS is based upon operational experience with contamination control rooms and tritium processing areas in which repeated worker access occurs on a daily basis requiring several changes of coveralls, booties, and gloves. For WCI facilities, the increase in routine LLW is within historical volumes and is due to several ongoing programs, including the de-inventory project.

As stated in the SA, the impacts from the anticipated increases in LLW, MLLW, and MTRU waste are not significantly different from those analyzed in the 2005 SWEIS and are not expected to exceed existing waste management capacities; therefore, no additional waste storage, treatment, handling capacity, regulatory requirements, or security requirements were projected to be needed. NNSA is also actively exploring alternatives that, if suitable and cost-effective, could reduce the amount of radioactive material-contaminated PPE waste.

Comment Code 1-35

Response: It is true that decontamination (D&D) activities carry a level of risk. The safety and environmental concerns of D&D activities were carefully considered and analyzed in the 2005 SWEIS. The temporary increase in projected non-routine waste volumes is consistent with the nature of these "non-routine" projects as they are most often driven by availability of funding and resources. As the SA stated, NNSA does not anticipate this increase would exceed waste management capacities; therefore, no additional waste storage, treatment, handling capacity, or security requirements would be needed.

Comment Code 1-36

Response: The SA concludes that any intentional acts are bound within accident scenarios in other NEPA decision documents, specifically the Revised EA for the BSL-3 facility and DOE/EIS-0236-S4, the Complex Transformation SPEIS. It does not refer to the 2005 SWEIS as an existing source of analysis on this issue. Both the BSL-3 EA and SPEIS were based on careful assessments of operations at LLNL, which are summarized in the SA. Neither the comment nor the SA analysis suggest a basis to conclude that anticipated increases in tritium and beryllium stored at LLNL

pose additional risk beyond that already considered due to intentional acts. Under those circumstances, the SA concludes that the assumptions and conclusions in both of the analyses are still valid and do not need to be updated.

Comment Code 1-37

Response: Both the fenceline realignments for the Northwest Corner Access Control Modifications and Eastside Access Control Modifications (which encompasses the LVOC) proposed at the LLNL main site would provide graded security site access that is consistent with and appropriate for the unclassified work activity that will take place. The security strategy is also consistent with other general access areas or open campus environments existing within the DOE complex that provide improved access for collaboration. LLNL would continue to protect all DOE assets (nuclear material, sensitive information, etc) in compliance with DOE/NNSA requirements.

Comment Code 1-38

Response: See Comment Response 1-37.

Comment Code 1-39

Response: Disclosure of the potential impacts of intentional destructive acts could enable terrorists to plan where to concentrate their resources for an attack in order to achieve maximum destructive impact. Knowing what destructive acts have been analyzed and the relative potential consequences of each would be very valuable to terrorists in their target selection process, enabling them to select with confidence those scenarios that potentially had the greatest impact. For those reasons, such information is classified and will not be released. While DOE/NNSA evaluates and considers the potential impacts from intentional destructive acts, protection strategies have been implemented which are designed to be effective against a range of postulated terrorist threats. As explained in the SA, implementation of these protection strategies reduces the overall probability of a successful terrorist attack of any type to the point where it is considered extremely unlikely.

Comment Code 1-40

Response: It is true that some quantity of plutonium may remain at LLNL after the de-inventory process. NNSA has previously considered the potential impacts on the environment of de-inventory in the NNSA Complex Transformation SPEIS. Therefore, NNSA does not perceive these activities to warrant a new SWEIS or a Supplemental EIS at this time.

Comment Code 1-41

Response: The environmental consequences for shipment of SNM to and from LLNL and other sites were evaluated in Appendix J of the 2005 SWEIS. The SWEIS analysis includes potential impacts on human health and the environment that could result from these shipments. The analysis remains adequate for projected operations through 2015, and no further NEPA analysis is necessary at this time.

Comment Code 1-42

Response: The HEAF Annex, a possible new construction project, was identified as a project in site-planning documents and also in the 2008 Complex Transformation SPEIS as an alternative means of conducting explosives R&D if S300 were to close. Since NNSA has decided to continue ongoing R&D at S300, there are no current plans to construct any addition to HEAF.

NNSA has also considered locating an office structure next to HEAF, as it becomes the Center of Excellence for high-explosives research described in the 2008 Complex Transformation SPEIS. However, NNSA does not anticipate making a decision to do so during the 2011-2015 period considered by the SA. Should it become reasonably foreseeable in the future, it would be included in subsequent project-specific or site-wide NEPA reviews.

Comment Code 1-43

Response: The SA process exists to determine whether a new SWEIS must be prepared. It also allows for consideration of whether circumstances require a Supplemental EIS. The SA reviewed all ongoing operations and programmatic enhancements for the next 5-year period, 2010 to 2015, and concludes that the projections remain consistent with impacts analyzed in the 2005 SWEIS. In those instances where the SA's projections differ from the 2005 SWEIS analysis, the additional information provided demonstrates that the changes in environmental impacts are not significant. The NNSA enhanced stakeholder participation by providing the draft SA to the public, including informational meetings where NNSA solicited public concerns or new information relevant to environmental concerns, although this process was not a regulatory requirement. Those public concerns led to valuable insights and important improvements to the SA document. Repeated circulation of the SA is not contemplated by regulation or law. The NNSA regards the SA as complete and ready for consideration and action by the Livermore Site Office manager.

3.2 Response to Comments from Document 2: Tri-Valley CAREs (Form Letter Campaign)

Comment Code 2-1

Response: See Comment Response 1-1.

Comment Code 2-2

Response: The analysis in Chapter 3 of the SA shows that the operational changes at NIF that include increasing the tritium inventory, increasing the tritium air emissions, and increasing the maximum shot yield will not result in environmental impacts substantially different than those addressed in the 2005 SWEIS. See Comment Responses 1-13 through 1-16, 1-23 through 1-26, and 1-28 for additional information.

Comment Code 2-3

Response: See Comment Response 1-31.

Comment Code 2-4
Response: See Comment Responses 1-31 through 1-35.

Comment Code 2-5
Response: See Comment Responses 1-1, and 1-8 through 1-10.

Comment Code 2-6
Response: See Comment Responses 1-1 and 1-2.

3.3 Response to Comments from Document 3: Western States Legal Foundation (1)

Comment Code 3-1
Response: Western States Legal Foundation was an intended recipient of the Draft SA. While there was no legal or regulatory requirement to distribute the Draft SA, the omission of the Western States Legal Foundation from the distribution list was inadvertent, and the representative's address has been added to the list for future distributions.

3.4 Response to Comments from Document 4: Western States Legal Foundation (2)

Comment Code 4-1
Response: The larger yield NIF experiments are not related to weapons effects testing.

Comment Code 4-2
Response: The National Ignition Campaign Execution Plan, Revision 4, is the most comprehensive document covering NIF experiments through the end of Fiscal Year 2012. The long-term use of NIF in support of NNSA is available in the NNSA Stockpile Stewardship Plan available at http://www.fas.org/press/news/2010/nnsa_plan.html.

3.5 Response to Comments from Document 5: Beverly King

Comment Code 5-1
Response: See Comment Responses 1-23 through 1-26 and 1-28 through 1-29.

Comment Code 5-2
Response: NNSA believes that the SA is in clear and understandable language.

Comment Code 5-3
Response: NNSA agrees that any radiological air emissions could have potential impacts to workers and the public, as was analyzed in the 2005 SWEIS and further explained in this SA. Exposure to radiation is under strict regulations by the DOE and the

Environmental Protection Agency (EPA). The information in the SA demonstrates that radiological air emissions from all LLNL main site sources would result in a Site-wide Maximally Exposed Individual (MEI) dose (to a member of the public) that is less than 2% of the EPA's site-wide standard for routine airborne emissions of 10 mrem/yr.

Comment Code 5-4
Response: The conclusion of the 2011 SA was not that the impacts were insignificant, but rather that the environmental impacts remain adequately addressed by the 2005 SWEIS, and for the few instances where projections differ from the 2005 SWEIS analysis, the changes in environmental impacts are not significant.

3.6 Response to Comments from Document 6: Nuclear Watch New Mexico

Comment Code 6-1
Response: See Comment Response 1-1.

Comment Code 6-2
Response: See Comment Response 2-2.

Comment Code 6-3
Response: See Comment Response 1-31.

Comment Code 6-4
Response: All program enhancements and changes in operational parameters were reviewed in the SA, which demonstrates that the environmental impacts associated with this increase [i.e., increase container loading limits from 18 PE-Ci to 50 PE-Ci] would remain adequately covered by the 2005 SWEIS. Also see Comment Response 1-31.

Comment Code 6-5
Response: See Comment Responses 1-31 through 1-35.

Comment Code 6-6
Response: See Comment Responses 1-7 through 1-10.

Comment Code 6-7
Response: See Comment Responses 1-1 and 1-2.

3.7 Response to Comments from Document 7: Matthew Swyers

Comment Code 7-1
Response: See Comment Responses 1-5 and 1-32.

Comment Code 7-2
Response: LLNL is not proposing a Lab-wide 50-fold increase in beryllium use. The only increase would be in the stationary beryllium inventory as contamination on first wall panels within the NIF target chamber. This practice is intended to avoid unnecessary worker exposure or increase in waste generation that could occur if the panels were removed and decontaminated on a periodic basis. See also Comment Responses 1-28 and 1-29.

Comment Code 7-3
Response: See Comment Response 1-5.

Comment Code 7-4
Response: See Comment Response 1-5.

3.8 Response to Comments from Document 8: Winifred Detwiler

Comment Code 8-1
Response: See Comment Responses 1-8 through 1-10.

Comment Code 8-2
Response: See Comment Response 1-2.

Comment Code 8-3
Response: See Comment Response 1-17.

Comment Code 8-4
Response: See Comment Response 1-23.

Comment Code 8-5
Response: See Comment Responses 1-28 and 1-29.

Comment Code 8-6
Response: See Comment Responses 1-34 and 1-35.

3.9 Response to Comments from Document 9: Carl Anderson

Comment Code 9-1
Response: See responses to Document 1 (Tri-Valley CAREs).

Comment Code 9-2
Response: NNSA agrees that the quantities of fissile and/or fissionable materials in these experiments are too small to experience criticality under the highest temperatures and pressures generated by the NIF. The 2005 SWEIS and the SA provide all other environmental impact information related to NIF experiments.

Comment Code 9-3

Response: Cs-137 would be produced in very small quantities and because it is non-volatile, it is not easily made airborne. The NIF does not have a residual thermal energy source that would mobilize less volatile species. Therefore, negligible amounts of Cs-137 would be released. Analyses in the 2005 SWEIS included the contribution from I-131.

Comment Code 9-4

Response: The Stockpile Stewardship mission of the NIF, addressed in the 2005 SWEIS, requires use of fissile and fissionable isotopes. In addition, the use of Depleted Uranium for ignition experiments is desirable because of the properties of uranium. Uranium more efficiently transfers laser energy to the capsule compared to other materials. This results in improved target performance, with the same laser energy.

Comment Code 9-5

Response: The Advanced Materials Program (AMP) and the Integrated Technology Project (ITP) were removed from the 2005 SWEIS. There are no proposed Pu-AVLIS projects in the SA.

Comment Code 9-6

Response: BSL-3 facility operations at LLNL are ongoing, and there are no proposed changes for the 2010-2015 period.

Comment Code 9-7

Response: Ongoing operations at LLNL do not contemplate any changes in the buffer zones. If any such changes are considered in the future (including security access), they would be subject to a separate NEPA review. See Comment Responses 1-37 and 1-38.

3.10 Response to Comments from Document 10: Janis Turner

Comment Code 10-1

Response: See Comment Responses 1-23, 1-24, and 2-2.

Comment Code 10-2

Response: The annual skyshine from NIF operations is not projected to change from the projections in the 2005 SWEIS. Also see Comment Response 1-23.