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# Public Comment and Analysis
# Part Two: The Impacts of "Complex Transformation" on Livermore Lab and Surrounding Communities

*Submitted to*

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

*Submitted as comment for*

Draft Complex Transformation
Supplemental Programmatic Environmental Impact Statement
DOE/EIS-0236-S4
(also known as the "Bombplex" plan)

*Submitted by*


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**Tri-Valley CAREs' "Part Two" comment document is structured as follows:**


1. Tritium Research and Development at Livermore Lab
2. Bomb Blasts (Hydrodynamic Testing) at Livermore Lab's Site 300
3. Plutonium, Highly Enriched Uranium and Livermore Lab
4. Reliable Replacement Warhead / National Ignition Facility and Other Connections to "Complex Transformation" Outlined in the Livermore Lab 10 Year Site Plan
5. Safety, Security, Terrorism and Livermore Lab
6. Alternatives Analysis and the Future of Livermore Lab
7. Conclusion


NOTE: Tri-Valley CAREs' "Part One" comment contains the complex-wide impacts of the "Bombplex" plan, and was submitted separately on April 30, 2008.

**PART TWO: IMPACTS ON LIVERMORE LAB AND SURROUNDING COMMUNITIES**

## 1. Under the Preferred Alternative (and Other Alternatives) in the Draft Complex Transformation SPEIS, Tritium Research and Development at Livermore Lab is not Consolidated, is not Properly Analyzed, is Slated to Increase Over Current Programmatic Use, and Will Harm the Public

Tritium is a radioactive form of hydrogen that is used to boost the explosive power of modern nuclear weapons. Tritium is difficult to contain, is not captured by HEPA filters, is only partially captured by other mechanisms, diffuses through almost anything, and will, operating histories show, invariably escape when used under high pressures. Once released, tritium can travel with the wind, can "rain out" easily on surrounding populations and can become organically bound in the food chain.

At the Lawrence Livermore National Laboratory (LLNL or Livermore Lab), tritium has been released to the air, soil and groundwater. Known tritium releases to the air from Livermore Lab total between 800,000 and one million curies. One curie is a large amount of radiation, equal to 37 billion radioactive disintigrations per second.

At the Livermore Lab main site, tritium has been measured in rainwater at a concentration of 147,000 picocuries per liter, more than 7 times the state and federal maximum contaminant limit (MCL) for water. The groundwater has been found to contain tritium above the MCL at both the Livermore Lab main site and its Site 300 high explosives testing range. At Site 300, the concentration of tritium in the groundwater has been measured at 2 million picocuries per liter, 100 times the MCL.

Livermore valley wines taken off the shelf and analyzed by Livermore Lab have been found to have nearly four times the tritium of other California wines. Local honey and other agricultural products have also been found to contain elevated levels of tritium. The milk of local cows has also been found to contain excess tritium.

Historically, and up to the present, the concentration of tritium in local agricultural products closely mirrors the amount of tritium activity that goes on at Livermore Lab. Years where tritium programs have increased -- so, too, the environmental burden of tritium increases. And, when tritium activity goes down at Livermore Lab, tritium concentrations in wine, honey and the environment decrease.

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

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

1994 137 curies

In 1990, in part due to concerns voiced by Tri-Valley CAREs regarding LLNL's tritium contamination, Livermore Lab realigned and substantially reduced its tritium use and inventory. In 1991, LLNL stopped filling the test bomb components with tritium on site. In 1992, the Nuclear Testing Moratorium Act terminated full-scale nuclear testing altogether. Tritium activities at LLNL declined -- and so did the releases. There is a direct correlation between the decreases in tritium activity and the amounts released to the environment. The downward trend of tritium releases represents a move in the right direction for LLNL. This downward trend will be reversed by the tritium Research and Development (R & D) activities under the preferred alternative in the draft SPEIS.

Because the SPEIS specifically exempts the tritium R & D activities at LLNL from consolidation -- or from termination or reduction – the document must contain the LLNL history of releases, information about how much tritium is in the local environment, and provide an analysis of how DOE NNSA proposes to ensure that releases do not occur in the future. Again, it is our analysis, based on our study of tritium use at LLNL and other sites, that increased activity will lead to increased levels of tritium in the environment. Tritium exposure is associated with a wide range of negative health outcomes, from cancers to increased susceptibility to suppressed immune system diseases to miscarriage and birth defects, among others.

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

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

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

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

In addition to airborne releases, the SPEIS should also discuss the tritium in waste at LLNL and in releases to the sewage, soil, surface and (eventually) groundwater.

The draft SPEIS mentions but does not analyze the impacts associated with the manufacture and filling of tritium targets for the National Ignition facility mega-laser on site at the LLNL main site. This activity is likely to increase airborne tritium emissions, tritium-contaminated wastes and other environmental and health impacts of tritium at Livermore Lab and in the surrounding communities. According to the Livermore Lab 10 Year Site Plan (quoted in section 4, below) the National Ignition Facility is an "integral part" of the Complex Transformation plan. As such, it must be analyzed both with regard to programmatic alternatives and environmental and other impacts associated with the use of tritium and other elements.

Moreover, the draft SPEIS fails utterly to consider that the tritium R & D activities in the preferred alternative are driving a major expansion of the tritium facility at Livermore Lab under the Tritium Facility Modernization Project. This project includes:

- nearly doubling the size of the tritium facility (Building 331) by adding a new building of approximately 6,000 square feet to the existing tritium facility,
- renovating existing labs in the tritium facility,
- modifying labs to accommodate new and larger devices,
- introducing new activities into the tritium facility, including the manufacture of fission-fusion targets using plutonium,
- and more.

Further, according to other DOE documents, the tritium handling is slated to increase from the usage of about 3.5 to 5 grams per year to 30 grams per year "at risk" in one room beginning in 2009, after the Complex Transformation SPEIS ROD. The allowable overall inventory would be 35 grams.

There are approximately 9,800 curies per gram of tritium. Therefore, the "at risk" limit of 30 grams all available in use at one time in one room/operation is 294,000 curies. This is enough tritium to nearly equal the historically high accident levels at LLNL of the 300,000 curie and 350,000 curie tritium releases in 1965 and 1973.

According to Dr. John Gofman, the founder of LLNL's bio-medical division, those tritium releases were responsible for 120 cancers and 60 cancer deaths. The "preferred alternative" of giving LLNL a special "pass" and NOT consolidating the tritium out of LLNL carries a potentially severe impact.

Another way to look at what these amounts of tritium mean is to look at the number of disintigrations per second represented by this tritium. One curie, as noted, equals 37 billion radioactive disintigrations per second. If the 30 gram at risk limit is released, that represents 294,000 curies times 37 billion disintigrations per second – or more radioactive disintigrations per second than there are stars in the Milky Way galaxy.

The draft SPEIS dismisses this tritium at LLNL as a "small quantity." If this is indeed the DOE's basis for not analyzing the potential impact on LLNL workers and the public, it is an improper one.

The LLNL facility is unique in the weapons complex because it is a geographically small and crowded site – the main site where the tritium facility is located is only 1.3 square miles. Moreover, homes and apartment buildings are build right up to the site boundary. A number of Tri-Valley CAREs members can see the stacks of the tritium facility from their homes and yards. The tritium facility is likewise visible when driving down Vasco Road and other major streets. The impact of an accident (or other release scenarios including earthquake or terrorism attack) with tritium were not considered in the draft SPEIS and must be.

Sandia, Livermore sits directly to the south of Livermore Lab. Because of the proximity of the encroaching population center toward Sandia and Livermore Labs, all tritium activities at Sandia, Livermore have been phased out. Tri-Valley CAREs advocates for a phase out of all tritium activity at Livermore Lab. This is a viable option that should be analyzed in the PEIS.

## 2. Impacts of Ongoing and Increased Hydrodynamic Tests at Livermore Lab Site 300 Were Improperly Excluded from the Draft SPEIS.

As part of the preferred alternative under the Complex Transformation plan, the Department of Energy National Nuclear Security Administration (NNSA) proposes to cease open-air hydrodynamic testing at Site 300 in 2009 and conduct future open-air hydrotesting at the Nevada Test Site. Livermore Lab's hydrotesting facilities would then be consolidated in-place. According to the draft SPEIS, the Contained Firing Facility (CFF) would be closed in 2015, which could enable transfer or closure of Site 300. However, according to LLNL officials, even if hydrotesting by NNSA at Site 300 ends, experiments will continue there by other agencies, including the Department of Defense and the Department of Homeland Security. In fact, Livermore Lab spokeswoman Susan Houghton has stated, "It's going to be an industrial site no matter what."

Currently, Livermore Lab is in the process of seeking an air permit from the San Joaquin Valley Air Pollution Control District. This permit, which represents an eight-fold increase over current levels, would allow the outdoor testing of explosives at Site 300, which is located just 6.5 miles from downtown Tracy, California and approximately one mile from the proposed 5,500-home Tracy Hills development site. The blasts could contain as much as 8,000 pounds of high explosives annually and scores of toxic and radioactive materials, including up to 20 mg (200 curies) of tritium and up to 5,000 pounds of Uranium-238 (depleted uranium).

If allowed to enter the body, depleted uranium has the potential for both chemical and radiological toxicity, and the two important target organs are the kidneys and the lungs. Tritium is known to cause a wide range of health problems, from birth defects to cancers. The open-air explosives testing to be performed under the permit will aerosolize these and other hazardous materials, which will then spread with the prevailing winds throughout the San Francisco Bay Area and Central Valley of California. *(See also comments of nearly 450 area residents, submitted separately by Tri-Valley CAREs).*

One may wonder why Livermore Lab is seeking an air permit to perform increased open-air detonations at the same time as NNSA is proposing to cease such testing at Site 300 in 2009 under the Complex Transformation plan. The answer is likely that Livermore Lab is planning on performing further experiments at Site 300 on a "work for others" basis for other federal agen-

cies. This is unacceptable. All open-air explosives testing and related experiments should cease at Site 300, which should then be closed to these types of activities.

In the draft Complex Transformation SPEIS, NNSA must consider an alternative that specifically involves the closure of Site 300 and/or transition to other environmentally-benign activities. According to the Council on Environmental Quality's (CEQ) regulations implementing the National Environmental Policy Act (NEPA), the section discussing alternatives "is the heart of the environmental impact statement." 40 C.F.R. § 1502.14. Pursuant to CEQ's NEPA regulations, agencies are required to "[r]igorously explore and objectively evaluate all reasonable alternatives." *Id.* at § 1502.14(a). The closure of Site 300 is a reasonable alternative, which should be thoroughly analyzed in the draft Complex Transformation SPEIS.

Further, even assuming Site 300 is merely transferred instead of closed, that is a connected action that must be analyzed in the draft Complex Transformation SPEIS. Under CEQ's regulations implementing NEPA, connected actions are those that "are closely related and therefore should be discussed in the same impact statement. Actions are connected if they . . . [c]annot or will not proceed unless other actions are taken previously or simultaneously." *Id.* at § 1508.25. In this case, any environmental impacts associated with the transfer of Site 300 should be analyzed in the draft Complex Transformation SPEIS, since that transfer could not proceed unless NNSA undertakes its planned status change for Site 300 as part the Complex Transformation plan.

Moreover, the cumulative impacts of future activities at Site 300 must be analyzed in the draft Complex Transformation SPEIS. Pursuant to CEQ's NEPA regulations, "'Cumulative impact' is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." *Id.* at § 1508.7.

Since Livermore Lab officials have publicly stated that experiments for other federal agencies will continue at Site 300 in any event, such actions are clearly foreseeable. As such, the environmental impacts of these activities, whether conducted by the Departments of Defense or Homeland Security, should be analyzed in the draft Complex Transformation SPEIS.

In conclusion, all open-air explosives testing at Site 300 should cease. Whether this testing is done by DOE or another government agency, the risk to the community is the same. Central Valley residents, and in particular those from the fast-growing community of Tracy, should not have their health endangered by these activities. As acknowledged in the draft Complex Transformation SPEIS, Site 300 is a redundant facility inappropriately located for such hazardous activities. Therefore, all high explosives and bomb testing at Site 300 should cease and future efforts should focus on remediating its toxic legacy, as reflected by its status as a Superfund (CERCLA) site.

## 3. Consolidation of Plutonium and Highly Enriched Uranium out of Livermore Lab Needs Better Analysis – and Faster Action -- Due to the Encroaching Community and Other Unique Risks of Keeping Special Nuclear Material at This Location.

The plutonium and highly enriched uranium at Livermore Lab are vulnerable to a terrorist attack, a disgruntled employee scenario and to release in the event of a major earthquake, as well as other scenarios.

The draft SPEIS proposes to leave weapons usable quantities of plutonium in place at Livermore Lab until 2012. Further, the "preferred alternative" involves moving the plutonium from Livermore twice -- once to the Nevada Test Site and then again to the Los Alamos Lab in NM, presumably for use in the new plutonium pit manufacturing facility that is the "preferred alternative" in the SPEIS.

Tri-Valley CAREs requests that a far different option be analyzed. First, there is no need for new pit production facilities/capabilities at the Los Alamos Lab with the capacity of producing 80 pits a year (nor is the CMRR facility, let alone its potential 9,000 square foot expansion, fully justified or analyzed in the SPEIS). Second, the plutonium from Livermore Lab should be moved only once -- and for safe and secure storage, not new bomb experiments. We suggest the following process:

First, undertake a study of potential storage sites. It need not take long. This study should not be limited to sites that are part of the Complex Transformation plan. For, if the plutonium from Livermore Lab were to be simply stored safely and securely at a remote location, that plutonium would not have a role in Complex Transformation. (It is possible that if the decision regarding moving the LLNL plutonium were made on the grounds of safety and security, a different storage site choice might emerge. For example, the DOE has excess underground secure storage at a large site that is not an NNSA site analyzed in the SPEIS. Too, the DoD may have excess secure storage facilities suitable for the job.)

This is an important point because, with the present plan, the tail of new nukes is wagging the dog of Livermore's plutonium. As noted, an unbiased analysis might show that the safest and most secure location for Livermore's plutonium is at a site that is not one of the eight involved in Complex Transfomation. Or, perhaps one of the eight is the best site (though it most certainly won't be Los Alamos -- the place the "preferred alternative" now proposes to send it). Point is, start with the analysis. We offered this comment at scoping, but unfortunately it was ignored in the preparation of the draft SPEIS.

Second, make the study of potential storage sites as transparent as possible. Bring in independent analysts, community members, affected tribes and other stakeholders.

Third, (and this can begin today) lay out a plan to safely package the plutonium at Livermore Lab. The Defense Nuclear Safety Board has cited Livermore Lab's plutonium facility for storing plutonium in paint cans and food tins. And, this is only the tip of the iceberg. Good procedures, and a reasonable allocation of time and money will be required to package the plutonium for shipment.

Fourth, ship it to the selected location in as safe and timely manner as is possible. Allocate sufficient funds to ensure that it is stored safely and securely at the new site. Continue to involve independent analysts, communities, affected tribes and other stakeholders.

Similarly, the highly enriched uranium should be moved from Livermore Lab in a prompt manner. And, the material should be stored as safely as possible at the most secure location. The DOE should undertake a process similar to the one outlined above to determine the best location. And, the highly enriched uranium should be stored only, and not be used in bombs or in nuclear weapons experiments.

The SPEIS proposes to keep highly enriched uranium and plutonium at Livermore Lab at least for the next 5 years, yet it fails to consider the Livermore Lab's environmental record of accidents, spills, leaks etc. with these materials. There have been numerous fires and other accidents involving uranium at Livermore Lab. Below are just a few of the accidents and other problems at Livermore Lab involving plutonium.

**Some Plutonium Mishaps at Livermore Lab:** Over the years, there have been a number of accidents and oversights at Lawrence Livermore National Laboratory involving plutonium. The following is but a small sampling of such incidents:

- 1953-1962: Radioactive liquid wastes, including plutonium, are disposed of in unlined pits
- 1958: Livermore Water Reclamation Plant (LWRP) begins to distribute sludge to the public
- 9/13/1965: A fire involving about 100 grams of plutonium starts in Building 332
- 4/20/1967: A spill of radioactive liquid containing plutonium occurs in a storage area outside Building 332
- 5/25/67-6/15/67: Release of plutonium to the City of Livermore's sewer system contaminates sludge distributed by LWRP
- 1973: Unknown quantities of plutonium released to soil during transfer of solid materials from solar evaporators; LWRP stops distributing sludge to the public
- 4/16/1980: Flash fire in a glovebox allows plutonium to escape
- 3/1983: Routine handling of drums containing curium, americium, and plutonium results in a spill and the contamination of at least one worker
- 5/1987: Another release of plutonium to the City of Livermore's sewer system
- 1990: DOE testing finds elevated levels of plutonium in an off-site air monitor east of LLNL
- 7/9/1991: Monitoring indicates statistically significant increase in plutonium discharge to sewer system
- 10/24/1991: Torn bag results in plutonium powder being spread on the floor
- 10/29/1992: Two LLNL workers are contaminated after a can of plutonium oxide is placed in a bag
- 1994: EPA discovers plutonium above background levels in three city parks. The highest level occurs in Big Trees Park, a half-mile west of LLNL.
- 1995: Deficiencies in safety practices lead to the shut down of all plutonium experiments and machining operations for 6 months
- 2/7/1996: Department of Energy reports that LLNL cannot account for 12 pounds of plutonium in its stockpile
- 2/2/1997: A worker at LLNL accidentally sticks himself with plutonium-contaminated metal
- 10/3/2003: A dozen LLNL workers are exposed to plutonium after a power outage caused the radioactive element to leak from its specially designed container
- 2004: Five workers at LLNL inhale plutonium particles while packaging radioactive waste

- 3/2005: Defense Nuclear Facilities Safety Board cites LLNL for storing plutonium in paint cans and food tins.

Plutonium represents a serious health hazard. A person is most likely to be exposed to plutonium by breathing it in. Other exposure pathways are also possible. Plutonium may remain in the lungs or move to the bones, liver, or other body organs. It generally stays in the body for decades and continues to expose the surrounding tissues to radiation, which may increase your chance of developing cancer and other health problems. The health effects of plutonium have been studied primarily by experiments done on laboratory animals. These studies have shown lung diseases from short-term exposure to high concentrations of plutonium. Animal studies have also reported an increase in lung, liver, and bone cancers from exposure to plutonium, as well as effects on the immune system.

In light of this, problems with the LLNL plutonium facility are relevant and must be examined in the SPEIS. The primary plutonium building was first built in 1961, and the latest major addition was built in 1977. Safety vulnerabilities such as the ventilation system and electrical system must be considered carefully.

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

The DNFSB determined that more radiation was likely to escape from the LLNL plutonium facility in an accident than was calculated by the model. Page 3 of the DNFSB report states that the LLNL calculation of only 5% leakage (Leak Path Factor) of the radiation from a plutonium fire is "unrealistic and probably underestimates the extent of a release of unfiltered radioactive material from the facility."

The SPEIS does not discuss the environmental impacts of plutonium in Livermore at all – and must. In this context, we ask if DOE is still using the old 5% leak path factor?

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

Plutonium has been removed from soils at the Livermore Lab main site as part of the ongoing Superfund cleanup there. Plutonium has also been found at elevated levels in an off-site air monitor to the east of LLNL and in the top 2 inches of dirt in a City park to the west of LLNL. The impacts of continuing operations, including those that are part of the “preferred alternative” of the SPEIS at Livermore Lab includes risks that were not studied in the SPEIS and must be.

In addition to failing to consider the environmental and health risks of keeping this material at LLNL and the security risks (discussed in Part One and below), the SPEIS also fails to consider that its decision to name LLNL as a nuclear weapons design center of excellence for the future may involve LLNL operating a new plutonium foundry (currently under construction at LLNL).

The new plutonium foundry is intended to:
(a) prototype plutonium pits and develop new plutonium pit manufacturing techniques that would be used full-scale at Los Alamos Lab in the new pit manufacturing facilities under the SPEIS' "preferred alternative," and,
(b) in a related activity, help develop and prototype a new plutonium pit for the Reliable Replacement Warhead that LLNL is presently developing.

The new foundry, called L-cast, which is being built in the Livermore Lab plutonium facility (Building 332), is inextricably connected to the Complex Transformation plan, yet it is strangely absent from the draft SPEIS. It must be analyzed, including:

- Its potential health and environmental impacts,
- Its potential security impacts and vulnerabilities,
- Its potential to affect or defer the SPEIS "preferred alternative" to remove plutonium from LLNL by 2012 as well as its impact on any plans to accelerate the removal date, and
- Its constraining impact (along with the RRW program of which it a part) on the development of a consolidation alternative that would result in Livermore Lab's re-missioning.

## 4. Role of the Reliable Replacement Warhead and Continuing Nuclear Weapons Development at Livermore Lab as Part of Complex Transformation (e.g., as Outlined in the Livermore Lab 10 Year Site Plan) Must be Fully Transparent and Considered in the SPEIS

The Ten Year Site Plan for Livermore Lab (dated March 2007) contains the following references to the Complex Transformation plan:

• 10 Year Plan, Lab director George H. Miller's' statement (page i): "The Lawrence Livermore National Laboratory is an important part of that vision as a nuclear design resource and a center for innovative science and technology to help expedite the transformation… Success in the development of RRWs [Reliable Replacement Warheads] is essential to making the transformational changes envisioned…"

• 10 Year Site Plan, page 3-2, "Livermore plays a prominent role… develop[ing] replacement warheads that will enable the Complex 2030 [Complex Transformation] transformation."

• 10 Year Site Plan, page 3-13, "NNSA's Complex 2030 [Complex Transformation] plan… calls for the significant changes to the nuclear weapons complex, and a modified mission that includes development, production and deployment of the Reliable Replacement Warhead (RRW) designs to replace major portions of the current stockpile…"

Tri-Valley CAREs' analysis of the draft SPEIS is that the "preferred alternative" for revitalizing and rebuilding the nuclear weapons complex is tied to the desire of DOE NNSA to continue the RRW program.

In essence, RRWs are the "enabler" for Complex Transformation as CT is a plan for the future of the nuclear weapons complex whose taproot is RRW -- and at the same time it would also be fair to say that Complex Transformation is likewise the "enabler" for RRWs as production would occur in refurbished nuclear weapons complex facilities and use the pits that are part of the 50/80 "preferred alternative" under Complex Transformation.

Perhaps a simpler way to put it is that RRW and Complex Transformation are inextricably linked. Yet, the SPEIS is opaque on this relationship, does not analyze it adequately, does not examine the associated environmental impacts and does not consider the constraining effect that enabling the RRW program has on the Department's own thinking (or lack thereof) regarding reasonable alternatives to the preferred plan.

Moreover, by keeping these relationships opaque, the SPEIS fails to adequately analyze the totality of environmental impacts associated with the RRW program. For example, Livermore Lab was chosen to develop the first RRW design. If that goes forward (and DOE NNSA is pushing Congress to get it funded in 2009 even after Congress cut it last year), what are the impacts on LLNL and the surrounding communities?

• 10 Year Plan, Page 1-3 and repeated on Page 4-5, "The establishment of NIF [National Ignition Facility] as a user facility, integrated with the available computational modeling capabilities and consolidation of the user community into a campus around the facility are an integral part of the LLNL Complex 2030 [Complex Transformation] vision."

• 10 Year Plan, page 1-4, "In support of the Complex 2030 [Complex Transformation] strategies, LLNL is improving its F&I [facilities and infrastructure], including:

- Steady progress is being made on deferred maintenance reduction.
- Sufficient F&I maintenance funding is committed (at the minimum 2% of replacement plant value) to assure the sustainment after FIRP ends.
- The Terascale Simulation Facility (TSF) is operating as a productive user facility for the three NNSA laboratories.
- The NIF is undergoing transformation to a national shared user facility..."

Why were these "integral parts" including NIF, the Tritium Facility Modernization Project that is "needed" for NIF, and the supercomputing complex referred to in the quotes not analyzed in the SPEIS. Was a deal cut between DOE NNSA Headquarters and LLNL management for certain nuclear weapon design facilities and programs to be "exempted" from consolidation or closure in order to appease one of the parties? It looks that way. Further, this inappropriately constrains the alternatives analysis.

• 10 Year Site Plan, page 1-5, "This year's TYSP [10 Year Site Plan] follows the framework of the Complex 2030 [Complex Transformation] vision… One tangible initiative is the line item proposal to consolidate target fabrication capabilities and associated personnel into a Target Fabrication Facility. This transformation accommodates user facilities and meets one of the important goals of the 2030 [Transformation] vision. In addition… "

Tri-Valley CAREs notes that the SPEIS describes neither a "Target Fabrication Facility" at LLNL nor the aforementioned Tritium Facility Modernization Project. What is the relationship between the facilities? To the Complex Transformation plan? Why are these relationships absent from the SPEIS?

Above are examples of the naming of Complex 2030 [Complex Transformation] in the LLNL 10 Year Site Plan, March 2007. Please reconcile the relationships outlined in that document with the lack of consideration of these facilities and programs in the SPEIS itself. And, in that context, we repeat that it appears as if promises about the outcome of the process have been made in advance of the final document and ROD.

We also request that DOE NNSA consider and include in the SPEIS any relevant information from the 2008 LLNL Site Plan (which Tri-Valley CAREs is attempting to obtain).

## 5. Safety and Security Vulnerabilities and the Threat / Consequences of Terrorism at Livermore Lab.

As we note in our Part One comment, Livermore Lab has been granted a "variance" from DOE NNSA and need not demonstrate compliance with the DOE's 2005 Design Basis Threat (meaning there is no assurance that LLNL has adequate defenses against a terrorist attack).

We also noted a significant discrepancy in the SPEIS; LLNL is listed in the Executive Summary as among the facilities whose security and vulnerability to terrorism is considered in a classified appendix to the SPEIS. Yet LLNL is missing in the body of the document (page B-18) when it likewise listed facilities whose security vulnerabilities were considered in the same classified appendix.

We refer the reader to our Part One comment for details, but note that either a severe earthquake or terrorist attack could have a catastrophic impact on the nearly 10,000 Livermore Lab employees, Sandia, Livermore's approximately 1,000 employees, the 81,000 people who live in Livermore and the 7 million people who live within 50 miles of Livermore Lab.

The administrative limit for plutonium at Livermore Lab is more than 3,000 pounds, enough for about 300 nuclear bombs. The administrative limit for highly enriched uranium is hundreds of pounds. The administrative limit for tritium is 35 grams. The Livermore Lab tritium facility (Building 331) and plutonium facility (Building 332) are "cheek to jowl" and vulnerable to a terrorist attack. As stated, the Complex Transformation plan leaves weapons usable quantities of plutonium and highly enriched uranium at Livermore Lab in place for the next 5 years. It fails to consolidate LLNL's tritium R & D and its preferred alternative supports an increase in programmatic activity with tritium at the Lab. These nuclear materials leave the people and the environment in this rapidly growing suburb at risk.

## 6. Alternatives Analysis and the Need to Rethink the Future of Livermore Lab.

Many of our members are residents of Livermore who would like to see the SPEIS include an exploration of alternative futures for the Livermore Lab, specifically a civilian science based alternative.

We note that Livermore Lab has great potential as a premier center for civilian research, for example in the area of modeling global climate change, research and development of non-polluting, renewable energy technologies and more. The current proposal would keep radioactive tritium at the Lab, and would continue use of Site 300 for open air bomb testing (albeit under the auspices of different federal agencies). Other futures are possible for the Livermore Lab and for this community and it is within the scope of DOE's authority and reasonable to expect that a NEPA review of the future of the nuclear weapons complex would examine an alternative future for Livermore Lab. We note that an alternative future for Livermore Lab goes hand in hand with the Curatorship alternative detailed in our Part One comment. It is not credible for DOE to stubbornly refuse to evaluate Curatorship for the complex and/or a post-Cold War, civilian science future for LLNL's mission and programs.

DOE should embrace its overarching mission to advance the national, economic, and energy security of the nation, instead of clinging to Cold War era nuclear weapons programs. A credible alternative future could be accomplished by "re-missioning" Livermore Lab. This would have benefits for the Lab, the community, the country, and the world. At a minimum, DOE's responsibility under NEPA is to evaluate such an alternative in its SPEIS.

Conclusion: Tri-Valley CAREs is a non-profit organization located in Livermore, California. Tri-Valley CAREs has been monitoring the activities of Lawrence Livermore National Laboratory and the nuclear weapons complex for 25 years. On behalf of our 5,600 members, many of whom are directly affected by the preferred alternative and other options in the Complex Transformation plan, we submit these comments on the DOE National Nuclear Security Administration Complex Transformation Supplemental Programmatic Environmental Impact Statement. We request that upon completion of the final SPEIS, DOE send Tri-Valley CAREs 2 complete copies, 10 additional Executive Summaries and 10 copies of the document on CD ROM. We thank you for this opportunity to comment.

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