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Tri-Valley CAREs and Women's International League for Peace and Freedom, San Francisco and East Bay Branches, Comments on the Draft Site-Wide Environmental Impact Statement for Continued Operations of Livermore Lab

By email to: LLNLSWEIS@nnsa.doe.gov

Date: January 18, 2023

Ms. Fana Gebeyehu-Houston, NEPA Document Manager
National Nuclear Security Administration (NNSA),
Lawrence Livermore National Laboratory (LLNL)
P.O. Box 808, L-293
Livermore, CA 94551-0808

Dear Ms. Fana Gebeyehu-Houston:

Tri-Valley CAREs ("TVC") is a non-profit organization founded in 1983 by Livermore, California area residents to conduct research, analysis, public education and advocacy regarding the potential environmental, health and proliferation impacts of the U.S. nuclear weapons complex, including but not limited to its Lawrence Livermore National Laboratory. Tri-Valley CAREs is the only organization that focuses its research, public education and advocacy on the potential environmental, health, and proliferation impacts of the Livermore Lab. TVC submits this comment on behalf of its board, staff and 6000 members 5,600, who reside mostly in the Bay Area, but with many around the country and beyond.

In its capacity as a nuclear weapons complex "watchdog" organization, Tri-Valley CAREs has commented during the public participation process for many National Environmental Impact Statements released by the DOE and NNSA. Tri-Valley CAREs has been involved in every SWEIS process for LLNL to date (not to mention many other environmental review processes at the Lab). The organization has mobilized hundreds of concerned citizens to voice opinions and opposition at public hearings and via written comment to some potentially dangerous future plans that were identified by previous Draft SWIES documents. Tri-Valley CAREs is submitting this comment on the Draft Site-Wide Environmental Impact Statement for Continued Operations of Livermore Lab.

In addition, this comment is being submitted by TVC's colleague organization, Women's International League for Peace and Freedom, San Francisco and East Bay Branches. WILPF's vision is a world of permanent peace built on feminist foundations of freedom, justice, nonviolence, human rights, and equality for all, where people, the planet, and all its other inhabitants coexist and flourish in harmony.

The Draft SWEIS Lacks Historical Context

There is a history of accidents, leaks and spills, at the Lab's Main Site and Site 300, which have resulted in toxic and radioactive releases and contamination to workers and the environment, i.e. the air, water and the land on and around the sites. Specifically, contamination from both sites has polluted the groundwater underneath to the extent that the sites were both listed as a "Superfund" cleanup sites by the US EPA. Cleanup of contaminated soil and groundwater is ongoing at both sites and expected to take generations to complete, until 2080 in some areas.

TVC has documented from LLNL and DOE sources that more than one million curies of radiation have been released up the stacks at Livermore Lab, including airborne releases of tritium and plutonium. The history shows, for example, that an increase in activities with tritium, results in higher emissions (both "routine" and accidental). The history shows accidents with plutonium that have created emissions as well, including globe box and other weapons-related accidents that sent plutonium out into our air. These are not mere stories from the past; these are trends that have direct relevance to reasonably foreseeable risks due to the planned increases of these deadly materials. The Draft SWEIS should include information and data about these historical releases, accidents, and spills. It should explain the lessons learned from these past incidents, and show the trends between the amount of hazardous and radioactive material on site at both sites and the frequency of incidents. The SWEIS should also analyze the relationship between increase in work volumes (like the increase in the Proposed Alternative) and the frequency of incidents.

The Draft SWEIS Contains a Faulty Alternatives Analysis

The Draft SWEIS fails to provide any real alternatives, which is contrary to the intent of the National Environmental Policy Act that lays out the requirements for an EIS. Instead, the document only contains a broad brush "no action" alternative and a "proposed action" alternative.

Furthermore, the **"no action" alternative** should be limited to the programs and the current scope of activities that already exist at Livermore Lab. Yet, in this Draft SWEIS, the NNSA has shoveled in **19 new projects** (totaling 416,300 square feet) and called them part of the "no action" alternative.

To offer one example, included in the 19 new projects is 25,000 square feet of new plutonium infrastructure in the main plutonium facility in the Livermore Lab's "Superblock" (page S-26 plus the map that precedes it).

To offer some context, the term Superblock at the Livermore Lab Main Site designates a collection of core nuclear weapons facilities including the main plutonium facility (building 332) with plutonium globe box lines, furnaces and a huge plethora of experimental and fabrication areas, the main tritium facility (building 331) with tritium glove boxes, high pressure fill operations (and even actinide [plutonium] operations located in the tritium facility's segment 2), and the hardened engineering test facility (building 334) where plutonium bomb cores or parts

are shocked, shaken and heated to demonstrate how the radioactive metal will perform from launch to detonation (yes, this means nuclear war). The Livermore Lab contains many, many other nuclear weapons buildings, but those in the Superblock are considered the Lab's nuclear materials centerpiece. Many hazardous activities, accidents, spills and releases have occurred here.

The "proposed action" alternative (meaning what the Lab wants) in the Draft SWEIS includes 75 new projects totaling 3.3 million square feet (see page S-42 and the table). Many of these buildings will be conducting dangerous, internationally provocative nuclear weapons activities that should be analyzed in more depth and parsed out into separate alternatives that allow the agency to opt out of some of these dangerous proposals when coming to a Record of Decision on the SWEIS. For example,

1. The proposed action in the Draft SWEIS includes a new, 60,000 square foot, "Next Generation Life Extension Program Research & Development Fabrication Building." It is clear from the Draft SWEIS that facility is work on new nuclear warheads, including the fabrication (production) of new-design weapons components in order to test them out (see page S-38 and surrounding pages). The Draft SWEIS makes clear that the work in this facility will be to create "next generation" technology but it fails to analyze the potential risk associate with pushing the envelope. TVC and WILPF request an analysis of the proliferation risks of this research be included in the SWEIS. The Draft SWEIS contains very little explanation of the activities that will occur inside the facility. The public needs more explanation in the SWEIS so that it can understand, analyze and discuss its potential impacts and risks. In addition, an alternative that excludes this facility should be included in the SWEIS.

2. The proposed action in the Draft SWEIS includes building a 75,000 square foot "Advanced Hydrotest Facility" (AHF) at Site 300 (see page S-40). Tri-Valley CAREs members were upset to see the resurgence of this facility. In the mid-1990s, Livermore Lab pushed for a new AHF at Site 300. However, at the time Site 300 was determined to be an *inappropriate* location due in part to the AHF's associated hazards and the proximity of the public. Over the last 25 years, the City of Tracy has expanded its boundary toward Site 300 and the population has skyrocketed. The Draft SWEIS contains very little explanation of the activities that will occur inside the AHF. The public needs more explanation in the SWEIS so that it can understand, analyze and discuss the potential impacts and risks of the AHF. In addition, an alternative that excludes this facility should be included in the SWEIS.

3. Other new projects at the Lab's Main Site include a new Engineering Shop support facility, a new Nuclear Science Center, a new High Bay, a new "Classified Lab" *(why not disclose at least its name, which is done with other classified facilities?)*, and more. These are all directly related to new weapons activities, assuming the "Classified Lab" is in that grouping (see Pages S-38 to S-40). The Draft SWEIS contains very little explanation of the activities that will occur inside these facilities. The public needs more explanation in the SWEIS so that it can understand, analyze and discuss the potential impacts and risks these facility pose. In addition, an alternative that excludes these facilities should be included in the SWEIS.

4. Specific to NIF and related weapons research, the proposed action includes a new "High Energy Density" support facility and a "Future NIF Laser Expansion". The Draft SWEIS contains very little explanation of the activities that will occur inside these facilities. The public needs more explanation in the SWEIS so that it can understand, analyze and discuss the potential impacts and risks these facility pose. In addition, an alternative that excludes these facilities should be included in the SWEIS.

5. At Site 300, additional facilities in the proposed action alternative include a new "Weapons Test Facility," and a new "Accelerator Bay and Support Bunker" expansion, among others. The Draft SWEIS contains very little explanation of the activities that will occur inside these facilities. The public needs more explanation in the SWEIS so that it can understand, analyze and discuss the potential impacts and risks these facility pose. In addition, an alternative that excludes these facilities should be included in the SWEIS.

Nuclear weapons activities already make up about 88% of the more than $2 billion dollars the Lab receives annually from the Dept. of Energy. It is not in compliance with NEPA for this Draft SWEIS to present the public with one alternative that increases nuclear weapons activities under supposed "no action" and a second alternative that puts new weapons activities on steroids.

In sum, TVC and WILPF outright oppose this huge expansion of new nuclear weapons development activities at the Lab. If this goes forward the way it is outlined in the Draft SWEIS, it will enable a whole generation of new warhead development.

In order to comply with NEPA and give the public a range of reasonable alternatives to analyze, the agency should provide additional alternatives that include some of the proposed actions and/or some of the proposed operational changes. The public should demand that the "no action" alternative be truly "no action" and that the 19 new projects be removed. Furthermore, the public should comment on true alternatives (like conversion of the Lab to civilian science) and not limit themselves to the two generic alternatives proposed in the Draft SWEIS that both expand nuclear weapons activities.

The agency must revise the draft and re-release it for public comment with a broader range of alternatives. Some suggested reasonable alternatives include, but are not limited to:

1. An alternative in which the BSL-3 is not replaced. If the current BSL-3 is reaching the end of its useful life, an alternative that closes down the Biological defense research at the Lab. This research was funded following the Anthrax attacks of 2001 in which congress pushed for increased bio defense in response very quickly. This work could logically be done at other defense sites in the country. The SWEIS does not indicate that any investigation as to the redundancy or duplicative nature of the LLNL Biodefense program with other existing government sponsored bio defense labs operated by other agencies. It is mission drift for the DOE and NNSA to engage in Biodefense and rather than double down on that mission drift, the SWEIS should examine closing the facility. Nothing in the Nuclear Posture Review or other DOE

mission includes directives for ongoing Bioresearch at LLNL. An alternative that closes the biodefense research down at LLNL is reasonable and must be analyzed.

2. An alternative that examines abandoning the increased bomb blasts, or any outdoor bomb blasts, at Site 300 is reasonable. It is possible that the Lab will not ever receive an air permit from Valley Air. An alternative that abandons these blasts should be analyzed.

3. The SWEIS states that "The Complex Transformation SPEIS also considered and evaluated the transfer of missions/operations to and/or from LLNL, and NNSA has implemented, as appropriate, decisions that followed preparation of that document." (SWEIS 3-64) That was in 2005- nearly 20 years ago. It goes on to state that "NNSA has not identified any new proposals for current missions/operations that are reasonable for transfer to and/or from LLNL." It does not state that any evaluation of whether any current missions of operations were examined for transfer to another site as part of this Draft SWEIS analysis as was requested by commenters during scoping. An alternative should analyze whether any current LLNL missions or operations could be consolidated or moved to another agency site and/or done away with entirely. Additionally, this alternative could determine if any existing or proposed activities are redundant or duplicative of operations or programs being conducted at other agency facilities.

Opposition to Proposed NIF Expansion in the Draft SWEIS

The Draft SWEIS also proposes to "revise the administrative limits for radioactive materials" at the NIF. The Draft SWEIS contains very little explanation of the experiments planned in NIF in the next 15 years that require increased radioactive materials. The public needs more explanation in the SWEIS so that it can understand, analyze and discuss the potential impacts and risks these experiments pose. In addition, an alternative that excludes these new experiments and keeps NIF at its current level of operation should be analyzed in the SWEIS.

The Draft SWEIS is clear that NIF will continue to experiment with tritium; however, the Draft SWEIS needs to be explicit as to whether plutonium-242 and other plutonium isotopes will also be used in NIF experiments in the future and it what quantities.

The Draft SWEIS explains that the proposed alternative includes taking steps "towards doing direct drive experiments in NIF." (pg. 3-35) These "polar direct drive" experiments "with smooth laser beam to target (as opposed to current indirect drive experiments where the laser beam shines inside of the hohlraum to create x-rays)" and other experiments will contaminate the inside of the NIF chamber with radionuclides (will these include plutonium- 242?). The SWEIS should include analysis of how the target chamber at NIF will be decontaminated from these direct drive and other experiments, including the frequency of decontamination, the number of workers potentially exposed and the cost.

The SWEIS should include an explanation of how the rate of experiments in NIF will increase from 400 shots per year to 600 shots per year in the proposed action alternative, but there will not be a corresponding change in NIF limits as described in the operational changes under the Proposed Action. This is difficult for the public to understand in conjunction with the Draft SWEIS' acknowledgment that an increase in the number of shots would increase LLW by two transportainers per year. Additionally, the SWEIS should provide information, analysis and data to explain its assertion that with an increase in the number of NIF shots by 50%, that the skyshine estimates from the 2005 SWEIS/2011 SA would not increase.

The SWEIS should also provide more details and analysis about the plan at NIF to introduce new materials for targets like Plutonium 242 and or other plutonium isotopes. This analysis should also include the proliferation risks posed by NIF with these new materials being used as targets.

Opposition to Proposed Increase in Plutonium Administrative Limit in the Draft SWEIS

NNSA is also proposing to increase the administrative limits for plutonium mixtures at Building 235 from less than 8.4 grams plutonium-239 under the No-Action Alternative to less than 38.2 grams under the Proposed Action. (SWEIS 3-54) The administrative limit refers to how much weapons-grade plutonium can be in the building at one time. This is an increase of nearly 5 times. Plutonium can be deadly in microscopic amounts; it emits extremely high-energy rays (alpha particles) that tear through tissue as the plutonium radioactively disintegrates within the body.

The Draft SWEIS goes on to say that much of this would be used at other sites after preparation at LLNL. (SWEIS 3-54) If it is being shipped to NNSS or LANL, has the alternative of it being produced at other sites for experiments been examined? An alternative should be analyzed that removes all special nuclear material from the Lab.

The Draft SWEIS states that, "The increased limits in B235 would lead to expanding the laboratory space dedicated to the preparation of plutonium samples for experimental work conducted outside of B235. This would enable the preparation of experimental samples for critical high-pressure experiments at NIF, JASPER facility at Nevada Nuclear Security Site, HPCAT and DCS facilities at Argonne National Laboratory, Z Pulsed Power Facility at Sandia National Laboratories, and other facilities." (SWEIS 3-54) The SWEIS must make clear in relation to this proposal what the corresponding increase in shipments of plutonium would be back and forth between these sites. An Alternative should be analyzed that reduces and ultimately removes all special material from the Lab.

Opposition to the Proposed HEAF Expansion in the SWEIS

The Draft SWEIS mentions that the new High Explosives Application Facility (HEAF) Laboratory Capability Expansion (HEX) will generate "hazardous waste contaminated with HE and non-hazardous waste and managed in accordance with DTSC permit requirements. The facility could double the existing waste stream from HEAF." (SWEIS 3-30) The hazardous waste permit from the DTSC for the main site was recently finalized and will last for 10 years, but the Draft SWEIS does not explain whether the increase in hazardous HE waste will require an expansion of the current permit limits. The SWEIS should provide detail about how the increase

in HE and hazardous waste generally will impact and coordinate with the existing hazardous waste permit issued by the State of California for both the main site and Site 300. The SWEIS should explicitly address whether the proposed action is consistent with the DTSC hazardous waste permit as issued. The lab should analyze an alternative in which all high explosives research is ended at the Lab.

SWEIS Analysis of Cleanup is Inadequate

The Livermore Lab Main Site was placed on the Environmental Protection Agency's Superfund list of most contaminates sites in the nation in 1987. The Livermore Lab Site 300 high explosives testing range was placed on the EPA Superfund list in 1990. Both locations have multiple chemical and radioactive contaminants that have leaked into soils and groundwater aquifers, as well as some surface waters at Site 300. Both locations have on-site and off-site contamination that is being cleaned up under the Superfund law. Both locations have cleanup activities that will need to continue for the next 40 years or more. This past contamination must be fully considered in the Draft SWEIS. Additionally, the Draft SWEIS does not state whether any program activities considered in the Proposed Alternative complicate or delay any of the ongoing or planned Superfund monitoring or cleanup, despite the fact that many of the proposed activities occur near clean up areas. The Draft SWEIS states that the Proposed Action alternative does not alter the timeline, technologies used, or thoroughness of the CERCLA environmental cleanup of the contamination at either LLNL site with no direct analysis or explanation. For the public to understand the interaction of the many proposed actions and the cleanup, the SWEIS needs to provide much more detail. Additionally, an alternative that analyzes using new cleanup technologies, provides more staff dedicated to the cleanup and hastens the cleanup schedule should be included in the SWEIS.

The Proposed Action Proposes a Risky and Unacceptable Increase to Transportation Risk

According to the Draft SWEIS, the Proposed Action increases the accident risk to the public from radiological and hazardous materials transportation by nearly 35%. (Table 5-32. Summary of Transportation Impacts for the Alternatives- SWEIS 5-94). This is an unacceptable level of risk. The Draft SWEIS does not adequately describe this risk in detail that allows the public to understand the type, location, potential severity, or the precautions taken that could mitigate this risk. The SWEIS needs to provide significantly more detail about this transportation risk in the SWEIS. It should also analyze an alternative where less radiological and hazardous materials are transported to and from the Lab.

The Proposed Action Proposes Risky and Unacceptable Increases to Radioactive Wastes

The preferred alternative Proposed Action proposes a very large increase in all types (LLW, MLLW, TRU/mixed TRU wastes) of radioactive waste production. And the SWEIS calls this waste "an unavoidable result of normal operations." (SWEIS 5-180) The disposal sites often have spills, accidents and releases into the environment. They pollute areas all over the country. These waste streams are a huge problem for our future on this planet. The Draft SWEIS reflects a cavalier attitude of this Lab and NNSA take toward hazardous and radioactive wastes and their associated dangers. The Draft SWEIS should analyze an alternative in which the radioactive waste generation of the Lab is minimized even beyond current operations. It does not indicate

that the agency tries to limit the proposed programmatic uses of hazardous chemicals, substances or radioactive materials to the bare minimum in any of the alternatives. The SWEIS needs to analyze how the Lab could minimize the use of these chemicals and radioactive materials, by limiting or not initiating programs, using less harmful substances, or finding cutting edge alternatives for each alternative analyzed.

The SWEIS Needs Further Analysis of the Proposed Bomb Blasts Increase at Site 300

The Draft SWEIS is unclear about the status of the Lab's proposed increase in the weight of explosives detonated at Site 300. The Draft SWEIS fails to mention that the lab has not received a permit to conduct these blasts from the San Joaquin County Air Resources Control Board (Valley Air) for these blasts, and may never. These proposed much larger blasts (than what was previously allowed) will produce noise levels up to 126 dB in nearby residential neighborhoods. The Draft SWEIS also fails to mention that the US CDC states that "**Loud noise above 120 dB can cause immediate harm to your ears**." (SWEIS 4-104) The SWEIS should be accurate in its presentation of the impact of noise that could result from these blasts to the nearby homes at Tracy Hills. Due to the years that have passed since the NEPA public hearings on these increased blasts, and the increased nearby population, the SWEIS should include a new analysis of the proposal and allow for a public participation process that allows the new residents of Tracy Hills to participate and have their voices heard as affected individuals.

These planned high explosives detonations involve more than 100 chemically hazardous contaminants. A future alternative that foregoes these outdoor detonations with hazardous materials at Site 300 must be analyzed in the SWEIS.

Part of the concern about the Lab conducting these high explosive blasts stems from the September 9, 2020 U.S. Department of Energy's Inspector General (DOE IG) Inspection Report on "The Department of Energy's Management of Explosive Materials at Lawrence Livermore National Laboratory." It disclosed that serious problems persist in the Lab's management of dangerous high explosives. First, the inspectors discovered multiple ways in which Livermore Lab ignores required regulations governing the management of these high-risk substances.

For example the report notes that, "We interviewed eight officials responsible for explosives management at HEAF [High Explosives Application Facility] and Site 300, and upon our request none provided us with detailed inventory procedures." So these officials acknowledged that the Lab is not following any particular set of regulations. The report goes on the note that in fact there are eight different high explosives management systems being used between the Lab's Site 300 high explosives testing range and the Main Site, where HEAF is located.

Additionally, the inspectors found that the "custodians" of the high explosives were doing their own inventorying of the materials in violation of the requirement that explicitly states, "Physical inventories shall be performed by the use of personnel other than the custodians of the property." These regulations are in place to create efficiency and prevent this material from going missing. The inspectors found several inventory errors that resulted from these various management systems and could lead to a loss (or theft) of explosive material.

Also alarming were the physical problems with high explosives storage that the inspectors found on site. For example, the report says that "we observed two damaged storage containers, one having a broken handle, and the other partially damaged, unsealed, and infested with insects." The report notes that the Lab was not following its own protocols for pest abatement. "In response to our observations, LLNL officials immediately replaced the insect-infested container with an approved onsite container."

In addition the report, "observed that some of LLNL's explosives storage facilities showed signs of physical deterioration at Site 300. For example, 14 storage facilities at Site 300 had peeling interior paint, and another had a severe mice infestation that prevented us from entering the magazine until it was decontaminated. The mice-infested magazine also had wide gaps around the doorway, which may have been a contributing factor to rodent infestation. As previously mentioned, we also identified an insect infestation inside an explosives container stored within a magazine at Site 300." Despite the Lab's $2 billion dollar per year budget, they are unable to prevent rodents from entering buildings housing High Explosives. This underscores that Lab continues to prioritize new warhead development over site maintenance and safety.

Finally, an enduring problem, given the Lab's rapid expansion and ramping up of nuclear weapons work, is that it is running out of space to house High Explosives. The report notes that "During our inspection, we identified older and legacy materials that programs do not plan to use in the future. Officials stated that physical storage space is crowded and one official stated that more storage space may be necessary for new work on life extension programs."

"In response to the limited availability of space, Lab officials stated that they do not have a formal plan to manage the space in the future, but actively attempt to mitigate the situation through the disposition of older material and the use of the older material in training and cleaning shots. However, there are a number of limitations that slow the disposition and use of older material.

Due to California air quality restrictions, Site 300 is only permitted to expend 1,000 pounds of explosives each year in the open air and must follow specific guidance based on environmental concerns. An official stated that Livermore Lab shipped some explosives off-site for disposition in the past 2 years, but due to security concerns there are limitations for the remaining materials. If the Lab "continues to work on [warhead] life extension programs in the near future, then it is necessary that the explosive managers actively manage the stockpile now to provide room for future material," he said according to the DOE IG report.

Tri-Valley CAREs objects to the ever increasing amount of High Explosives stored and used in experiments at Livermore Lab's Main Site and Site 300 and believes it is essential for the SWEIS to evaluate the risks posed by an accident or intentional act due to this material being housed in such close proximity to workers and the public.

Additionally, the SWEIS should include an analysis of the utility, cost, and environmental impacts of maintaining the High Explosives mission at Site 300 when other NNSA sites perform much of the same function farther away from population centers. Site 300 has been identified by previous administrations as an excess DOE site that has potential as a green energy production site (wind farms). This and other potential uses of Site 300 (return to wild park land for example)

should be examined in the SWEIS. At the very least, the SWEIS needs to make clear the status of the proposed blasts.

Opposition to the New Highbay B131 Proposed in the Draft SWEIS

The preferred alternative in the Draft SWEIS includes the removal of the hold High Bay (B131) and the construction of a replacement High Bay, which would be "a 100,000-square-foot industrial shop-type building that would provide workshop, machine shop, and storage capabilities for experiments and operations in engineering evaluations, primarily in support of the Stockpile Stewardship and Management Program, although other programs are supported as well. It would be classified as a low-hazard radiological facility (LLNL 2021c)." (SWEIS 3-29) While the Draft SWEIS mentions, "(beryllium and lithium hydride/lithium deuteride), non-dispersible radioactive material (DU), and toxic chemicals, previous plans have included plutonium pit material in the type of environmental testing the facility will conduct.

The Draft SWEIS does not indicate the whether future plans for this facility will include plutonium pit material. There is very little explanation of the activities that will occur inside the New Highbay B131. The public needs more explanation in the SWEIS so that it can understand, analyze and discuss the potential impacts and risks of the new Highbay B131, including; 1) Whether the High Bay be authorized to use plutonium pit material; 2) What the types of experiments and operations that will take place in the High Bay will be; and, 3) What material be shipped from LANL (or other NNSA sites) to LLNL for experiments in the High Bay. In addition, an alternative that excludes building a new Highbay B131 should be included in the SWEIS.

Opposing to the Increase to the Proposed Tritium Emissions Limit in the SWEIS

The Draft SWEIS proposes to raise the allowable limits on **tritium** (radioactive hydrogen) and **weapons-grade plutonium** at Livermore Lab. The proposed increase in the **emissions limit** for radioactive tritium will come from two locations - the main tritium facility in the "Superblock" and the National Ignition Facility (NIF). The larger releases are slated to begin in 2023 (see page S-40).

The Draft SWEIS includes a chart that details about the "Inventory and Administrative Limits and Emissions of the No Action Alternative versus the Proposed Action Alternative." [1] It shows the emissions of tritium from the Tritium Facility going from 210 Ci/yr. in the No Action Alternative to an allowable limit of 2,000 Ci/yr in the Proposed Action. [2]

In the context of these planned increases, the Draft SWEIS describes loading tritium reservoirs with up to 1,500 curies of tritium at time. It then states that both the main tritium facility and the NIF could release ***the entire tritium load directly into the environment*** without having it go through any tritium "recovery system" (see section 3.3.3). Thus the Proposed Action seeks to

[1] Table 4-39 Facilities Managing Radionuclides at Livermore Site and Site 300 (at pages 396-401)
[2] Table 4-39 Facilities Managing Radionuclides at Livermore Site and Site 300 (at pages 396-401)

allow emissions of tritium from NIF to go from 80 Ci/yr. to 1,600 Ci/yr. (B298's Target Fabrication work for NIF will emit another 10 Ci/yr.) [3]

The site-wide air emission of tritium will increase from 129.2 Ci tritium in the 2019 baseline, to 300 Ci tritium in the No Action Alternative, all the way to 3,610 Ci tritium for the Proposed Alternative. This is almost a 28-fold increase in the amount of tritium emitted from the Lab.[4]

One curie is a large amount of radiation, equal to 37 billion radioactive disintegrations per second. If this plan is not stopped, it will put radioactive tritium directly into the air we breathe; it will travel with the wind and tumble into our neighborhoods as it goes, fall out over our homes in the rain, and become organically bound in our plants. Tritium exposure is related to numerous bad health outcomes, including deadly cancers.

The Draft SWEIS acknowledges the corresponding increase in Population Dose (person-rem/yr) for offsite population from the increase in tritium emissions going from 0.26 person-rem/yr in the 2019 baseline, to 0.6 person-rem /yr for the No Action Alternative, to 7.1 person-rem/yr for the Proposed Action Alternative. An increase of 27 times the person –rem/yr of dose from the 2019 baseline to the Proposed Action Alternative.[5] This increase is unacceptable!

The Draft SWEIS also calculates the Population Latent Cancer Fatalities Risk from the increase in tritium emissions. It shows a corresponding increase in the chart, going from 1.6x10-4 in the 2019 baseline, to 3.6x10-4 in the No Action Alternative to 4.3x10-3 in the Proposed Action alternative. An increase of 12 times the numbers of cancers from the 2019 baseline to the Proposed Action Alternative. This is an unacceptable increase in risk.

The analyses of the impacts of the Proposed Action alternative's increased tritium work are ambiguous. The SWEIS needs to provide more details of the proposed tritium work in each facility it is proposed to occur. For example, the Draft SWEIS does not detail how many tritium loading operations are expected per year. The SWEIS should explain what its policy for what will happen if/when one of the tritium loading operations results in a full 1500 Ci release. Would the lab then cease the tritium loading operations for the next 12 months? If the lab releases 3600 curies in a period of less than 12 months will it cease to do any more tritium work at both NIF and the Tritium Facility? Would the public be notified of the administrative limit being reached? Will staff in nearby buildings be notified? All questions the SWEIS must answer. The SWEIS should analyze an alternative in which the experiments that require the tritium loading operations are not done on site, if at all.

Opposition to the Proposed Increased in Radiological Work in the SWEIS

In Appendix C, (Tables C-12 & C-13 on pages C-22& C-23) the SWEIS analyzes the "collective annual dose to radiological workers" and indicates it will increase from 8.45 person/rem at the baseline 2019 level to 106.7 person/rem under the proposed action alternative. This 12-fold increase in radiation exposure to radiological workers is extreme and will result in additional

[3] Table 4-39 Facilities Managing Radionuclides at Livermore Site and Site 300 (at pages 396-401)
[4] Table 5-17. Potential Air Quality Impacts for the Alternatives (pg. 498)
[5] Table 5-17. Potential Air Quality Impacts for the Alternatives (pg. 498)

illnesses to worker and additional claims under the Energy Employee Occupational Illness Compensation Act (EEOICPA).

To date 2,873 unique individual Livermore Lab workers have made claims with the Department of Labor under EEOICPA believing they were made ill by on the job exposures at the Lab. Out of those 2107 claims have been approved and paid (Some claimants have multiple claims for multiple illnesses), resulting in $485,688,770 taxpayer dollars being paid out as compensation and medical reimbursements for affected workers. These affected workers have been acknowledged to have received exposures to radiation and toxic chemicals at the Lab that likely caused or contributed to an illness. Many of these illnesses are radiogenic cancers, but there are many other illnesses that result from exposures at the Lab. Many of the illnesses are fatal. The SWEIS must include an analysis of how many additional claims the Department of Labor shall expect to pay out under the alternatives analyzed.

Appendix C fails to consider the synergistic health effects of radiological workers also being exposed to toxic chemicals and substances in the course of their work at the Lab. The document notes the use of corrosives (liquids, solids, and gases); toxic substances (including gases); flammables and combustibles (including solids, liquids, and gases); nonflammable gases; water reactives/pyrophorics/spontaneously combustibles; oxidizing substances; organic peroxides; and explosives, all known to have health effects from various levels of exposure and all potentially have synergistic effects with each other and/or with radioactive elements. The document should include an analysis of any available medical science that shows synergistic health effects of any mixture of chemicals used at the Lab, of radiation and toxic chemical together, and of multiple types of radiation (Alpha, Beta & Gamma) on workers.

Opposition to BSL-3 Replacement Facility Proposed in the SWEIS

The Draft SWEIS proposed action alternative includes a replacement Animal/Biosafety Level-3 Facility that is nearly twice the size of the existing facility. (SWEIS 3-38) Tri-Valley CAREs continues to oppose the colocation of biological defense work inside of DOE NNSA Classified nuclear weapons laboratories. The SWEIS should analyze the need for this facility and whether its work is redundant and/or duplicative of other BSL-3 labs at other agencies. There is no mandate for DOE to do bio defense research.

The Draft SWEIS contains very little explanation of the activities that will occur inside the proposed BSL-3 Replacement Facility. The public needs more explanation in the SWEIS so that it can understand, analyze and discuss the potential impacts and risks of the Replacement BSL-3 facility.

This SWEIS did not conduct a separate analysis of biological hazard release, but instead tiered from previous NEPA analyses performed for the BSL-3 facility, despite the proposal to build a larger new BSL-3. (Appendix C, C-48) Reliance on NEPA analyses that are over a decade old and not specifically tailored to the proposed action for the new BSL-3 makes the documented conclusions of safety doubtful. The SWEIS should analyze both an accident scenario and an Intentional Destructive Act scenario that are specifically tailored to the new BSL-3 as proposed in the proposed action. In addition, an alternative that excludes this facility should be included in the SWEIS.

Opposition to the New Animal Care Facility Proposed in the Draft SWEIS

The Draft SWEIS contains very little explanation of the activities that will occur inside the New Animal Care Facility that is part of the Proposed Action. It states that it would involve construction of a modern 20,000-square-foot replacement Animal Care Facility which will, "humanely use (the animals) in these research protocols and tissues are harvested for molecular analysis." (SWEIS 3-38) The Draft SWEIS further notes that "Other chemicals and some radionuclides are also used in this research." The public needs more explanation in the SWEIS so that it can understand, analyze and discuss the potential impacts and risks these facility pose. For example, the SWEIS needs to include an explanation of the "humane" practices so that the public can better understand and analyze these practices.

Additionally, the SWEIS needs to provide an explanation of why 20,000 sq. ft. is necessary for this facility and it should analyze an alternative of a smaller facility. Further, the SWEIS needs to provide an estimate of how many animals per month and year will be killed in this facility so that the public can understand and analyze the impact of this proposal. The SWEIS should also provide a clear purpose and need for the NNSA/DOE to do this type of biological research. The SWEIS should explain why radionuclides are used in the research and whether there experiments with animals involving the use of bioagents and radionuclides together. Finally, an alternative that excludes this facility should be included in the SWEIS.

The SWEIS Should Analyze the Lab's Role in Plutonium Pit Production

The Draft SWEIS discloses that there will new plutonium activities at Livermore Lab; however the "mission" has been vague and opaque. TVC has documented through other sources that Livermore Lab will have a "hands on" role in NNSA's plans for expanded plutonium pit production.

The production of the 80 or more new pits per year will take place at the Los Alamos Lab in New Mexico and the Savannah River Site in South Carolina according to current NEPA documents. However the federal budget contains money for new plutonium glove boxes at Livermore Lab that are expressly to support "expanded plutonium pit production." And, a Los Alamos National Lab NEPA document states that LANL will ship plutonium to Livermore for "materials testing" in support of "expanded plutonium pit production."

We know there is a connection between Livermore Lab's ramp-up of its plutonium activities and infrastructure and expanded pit production. The public has a right to be able to do the see clearly which activities are related to the very controversial plan to expand plutonium pit production – and to comment specifically on Livermore Lab's role.

The Government Accountability Office (GAO) states that the NNSA pit production plans "rely" on Livermore Lab and other non-production sites. Here is how GAO describes a key aspect of Livermore's role: "As the design agency for the W87-1 warhead—the first warhead designed for newly produced pits since the Cold War— Livermore is responsible for qualifying the pit production process and certifying that the pits produced meet the intent of its design. Qualification and certification requires a variety of tests, such as production evaluations,

engineering certification testing, physics certification testing, and the replacement of some equipment" (GAO-23-104661, January 2023).

In sum, the SWEIS should do a crosswalk that would enable those public comments. TVC and WILPF demand that a dedicated section in the SWEIS provide details and analysis of Livermore Lab's role in expanded plutonium pit production. Additionally, the SWEIS should analyze an alternative in which Livermore Lab does not have a role in expanded plutonium pit production.

The Earthquake Analysis in the Draft SWEIS is Lacking

There is a startling admission in the Draft SWEIS about the dangers of the release of toxic and radioactive materials in a "design basis" earthquake (see pages S-32 and S-33). First, we know that the next Bay Area earthquake may exceed "design basis." The map lists a dozen building with "seismic deficiencies" including building 235, which is the building discussed above in which the SWEIS would increase the administrative limit for weapons-grade plutonium nearly 5x!

The SWEIS needs to include an analysis of the release of toxic and radioactive materials in a "design basis" earthquake as well as an analysis of those impacts from an earthquake that exceeds "design basis." The analyses should include the Proposed BSL- 3.

Opposition to the Proposed Laser Isotope Pilot Program in the Draft SWEIS

The Draft SWEIS describes a new Livermore Lab laser isotope pilot program to enrich uranium on site. Long time Lab workers and TVC members alike probably recall the fiasco at Livermore Lab called Uranium Atomic Vapor Laser Isotope Separation. The facility cost billions of dollars and never worked. What it did do was release hazardous materials into the environment, some of which ended up in groundwater near the building. It was finally canceled.

The Draft SWEIS contains very little explanation of the activities that will occur inside the proposed facility, or the history of the previous failed attempt. The public needs more explanation in the SWEIS so that it can understand, analyze and discuss the potential impacts and risks of a new Laser Isotope Pilot Program. In addition, an alternative that excludes this facility should be included in the SWEIS. On its face, TVC and WILPF oppose Son-of-Uranium-Atomic-Vapor-Laser-Isotope-Separation and believe it should not be built.

The Proposed Action in the Draft SWEIS is out of Compliance with International Law

The Draft SWEIS summarily states that the proposed action is in compliance with international law, stating, *"NNSA missions are conducted fully consistent with current treaty obligations*." TVC and WILPF vociferously disagree.

Livermore Lab has been working to modernize the arsenal and push the envelope on weapons capabilities, essentially turning them into new weapon designs. This not only promotes nuclear development worldwide (everyone wants to keep up with the Jones not just for their credibility but also for their survival.) Livermore Lab is playing a central role in driving a new and dangerous global arms race. With the war in Ukraine and Russian nuclear saber-rattling, the U.S.

nuclear weapons budget throws fuel on the fire of potential nuclear war. This is fundamentally in contradiction with our obligations under the Non-Proliferation Treaty (NPT).

The Draft SWEIS states *"[t]he NPT does not provide any specific date for achieving the ultimate goal of nuclear disarmament, nor does it preclude the maintenance of nuclear weapons until their disposition. Continued operations at LLNL enable NNSA to maintain the safety, reliability, and performance of the U.S. nuclear weapons stockpile until the ultimate goals of the NPT are attained [disarmament] and are consistent with the NPT."*

This is manifestly incorrect. The Lab's objectives to maintain the arsenal include Life Extension Programs that are unnecessary, expensive, environmentally polluting and promote the nuclear arms race worldwide.

The country's current stockpile of more than 5,000 nuclear weapons has been extensively tested and certified reliable and will be for decades to come. The escalating cost of maintaining the stockpile is not due to the difficulty of the task or the effects of aging warheads. It is caused by increasingly elective changes introduced into the stockpile as part of the Life Extension Program (LEP). *(Note: the U.S. has 5,428 nuclear weapons according to the Federation of American Scientists, 2022.)*

The desire to modify warheads or develop new warheads is a primary factor in the push to upgrade other parts of the nuclear enterprise. The cost of modernizing the stockpile, including infrastructure and delivery systems, is estimated to be $1.7 trillion over 30 years with a modest rate of inflation.

Some of the programs that need to be analyzed for international treaty compliance (as well as for local environmental impacts) in the SWEIS are:

- Whether the development of the W80-4 "Long-Range Stand Off" weapon is in compliance with our treaty obligations under the NPT. (This weapon is intended for pilots to be able to "stand off" a target by thousands of miles and launch a precisely guided, radar evading nuclear weapon.) By any measure Livermore's new warhead for this LRSO (Long Range Stand Off capability) is an offensive first-use weapon that is completely out of compliance with our treaty obligations and with our commitment to stockpile stewardship. Livermore Lab is also planning to develop that new warhead (the W80-4) into a version that would be placed on small attack subs that do not now have any nuclear weapons on them. These new nuclear weapons would not be distinguishable from the conventional weapons currently on board these ships. That means that a country under attack might not be certain if the warhead heading toward it was conventional or nuclear – this is one scenario whereby a nuclear war could start by miscalculation.

- The SWEIS should also analyze whether the development of the W87-1 is in compliance with our treaty obligations under the NPT. The W87-1 is the first wholly new warhead design since the end of the cold war. The W87-1 is slated to sit atop a new intercontinental ballistic missile, called the Sentinel Missile. The Lab is looking into 126 new technologies for this warhead design. This includes a new-design plutonium bomb

core, called a "pit," significantly different from anything in the U.S. stockpile. Livermore's W87-1 warhead is a central reason the U.S. is planning to expand plutonium pit production at 2 locations - the Los Alamos Lab in NM and the Savannah River Site in SC. In fact, every plutonium pit that will be produced for at least 12-years will go inside a W87-1 warhead.

These new warhead designs do not comply with our treaty obligations. The US has an obligation under Article VI of the Nuclear Nonproliferation Treaty 'to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament…'

The International Court of Justice further clarified "There exists an obligation to pursue in good faith and bring to a conclusion, negotiations leading to nuclear disarmament in all its aspects under strict and effective international control." *Advisory opinion on the Legality of the Threat or Use of Nuclear Weapons, July 8, 1996.*

The United States is not working in good faith toward nuclear disarmament when we are creating new weapons designs.

Not only is the Lab's work out of compliance with our treaty obligations under the NPT but the Lab's work is making our world more dangerous. Because the US does not take a leadership role in stopping the nuclear arms race, we just fan the flames of nuclear proliferation everywhere. And it is a dangerous time to do so. Internationally the world is on the brink of the use of nuclear weapons. Russia is continually threatening their use. North Korea is parading their new missiles as a show of force. China is revamping their nuclear infrastructure. Through this SWEIS, Livermore Lab is committing to continue the nuclear arms race indefinitely. How long will the human race survive if we don't take decisive action and play a leadership role in eliminating nuclear weapons collectively?

To frame this in terms of the SWEIS, the Lab, under the National Environmental Policy Act has an obligation to study and analyze the potentially significant environmental impacts of their actions. There may be no greater significant environmental impact than nuclear war. Just living under the threat of nuclear war affects the psychology of our nation and the world.

Conclusion

As detailed above, TVC and WILPF believe the Draft SWEIS as released is significantly inadequate. Simply responding to all of the issues brought up in just this comment in a Final SWEIS "responses to comments" document would deprive the public of their opportunity to analyze and respond to many of the important issues not addressed in the current Draft SWEIS. Thus, TVC and WILPF request that the Draft SWEIS be revised in response to these and other comments and recirculated for further public comment.

TVC further notes that its comments here were hamstrung by; 1) The NNSA's failure to respond to eight outstanding Freedom of Information Act requests from TVC that are now the subject of litigation and to which the responses to may contain information pertinent to TVC's understanding of the Draft SWEIS; and, 2) The fact that the Draft SWEIS, which at the time of

scoping was expected to be released in the Summer of 2022, was instead released on November 4th, at the beginning of the holiday season with a 60-day comment period that was later extended just 15 days from January 3, 2023 to January 18, 2023 (despite many requests for a 30 day extension). This comment overlapped Thanksgiving major religious holidays, the New Year holiday all during what is the busiest time of year for many of our members. Given the huge complexity and large volume of the document, it was very difficult for many interested parties to review and comment on during this time of year.

Sincerely,

Tri-Valley CAREs, and Women's International League for Peace and Freedom, San Francisco and East Bay Branches