SUPPLEMENT ANALYSIS

for

Continued Operation of
Lawrence Livermore National Laboratory and
Sandia National Laboratories, Livermore

Volume II: Comment Response Document

March 1999

DOE/EIS-0157-SA-01-Vol.2
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# ABBREVIATIONS AND ACRONYMS

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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>ADAPT</td>
<td>Advanced Design and Production Technology</td>
</tr>
<tr>
<td>ARIES</td>
<td>Advanced Recovery Integrated Extraction System</td>
</tr>
<tr>
<td>AVLIS</td>
<td>Atomic Vapor Laser Isotope Separation</td>
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<tr>
<td>°C</td>
<td>Degrees Celsius</td>
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<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation, and Liability Act</td>
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<td>CFR</td>
<td>Code of Federal Regulations</td>
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<tr>
<td>CTBT</td>
<td>Comprehensive Test Ban Treaty</td>
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<tr>
<td>DNFSB</td>
<td>Defense Nuclear Facilities Safety Board</td>
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<tr>
<td>DOE</td>
<td>U.S. Department of Energy</td>
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<td>DTSC</td>
<td>California Department of Toxic Substances Control</td>
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<tr>
<td>EIR</td>
<td>Environmental Impact Report</td>
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<td>EIS</td>
<td>Environmental Impact Statement</td>
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<tr>
<td>EPA</td>
<td>U.S. Environmental Protection Agency</td>
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<td>EPC</td>
<td>Engineered Plume Collapse</td>
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<tr>
<td>ES&amp;H</td>
<td>Environment, Safety and Health</td>
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<tr>
<td>°F</td>
<td>Degrees Fahrenheit</td>
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<tr>
<td>FONSI</td>
<td>Finding of No Significant Impact</td>
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<tr>
<td>g</td>
<td>Gram</td>
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<tr>
<td>HEPA</td>
<td>High Efficiency Particulate Air (filter)</td>
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<td>IPD</td>
<td>Integrated Process Demonstration</td>
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<tr>
<td>JON</td>
<td>Judgements of Needs</td>
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<tr>
<td>kg</td>
<td>Kilogram</td>
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<tr>
<td>LLNL</td>
<td>Lawrence Livermore National Laboratory</td>
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<tr>
<td>LLMW</td>
<td>Low-Level Mixed Waste</td>
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<td>LLW</td>
<td>Low-Level Radioactive Waste</td>
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<td>MOX</td>
<td>Mixed Oxide (fuel)</td>
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<tr>
<td>NEPA</td>
<td>National Environmental Policy Act</td>
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<td>NESHAP</td>
<td>National Emission Standards for Hazards Air Pollutants</td>
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<td>NIF</td>
<td>National Ignition Facility</td>
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<td>NOD</td>
<td>Notices of Deficiency</td>
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<td>NOV</td>
<td>Notice of Violation</td>
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<td>NTS</td>
<td>Nevada Test Site</td>
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<td>OAK</td>
<td>DOE Oakland Operations Office</td>
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<td>ORPS</td>
<td>Occurrence Reporting and Processing System</td>
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<td>PEIS</td>
<td>Programmatic Environmental Impact Statement</td>
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<td>Pu</td>
<td>Plutonium</td>
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<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
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<td>ROD</td>
<td>Record of Decision</td>
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<td>SA</td>
<td>Supplement Analysis</td>
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<td>SAER</td>
<td>Site Annual Environmental Report</td>
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<td>SAR</td>
<td>Safety Analysis Report</td>
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<td>SNL-L</td>
<td>Sandia National Laboratories, Livermore</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>START</td>
<td>Strategic Arms Reduction Treaty</td>
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<tr>
<td>TSF</td>
<td>Terascale Simulation Facility</td>
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<tr>
<td>U</td>
<td>Uranium</td>
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<tr>
<td>USEC</td>
<td>U.S. Enrichment Corporation</td>
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<tr>
<td>VOC</td>
<td>Volatile Organic Compound</td>
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<tr>
<td>WIPP</td>
<td>Waste Isolation Pilot Plant</td>
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<td>WM</td>
<td>Waste Management (PEIS)</td>
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1 INTRODUCTION

1.1 BACKGROUND

The U.S. Department of Energy (DOE), prepared a draft Supplement Analysis (SA) for Continued Operation of Lawrence Livermore National Laboratory (LLNL) and Sandia National Laboratories, Livermore (SNL-L), in accordance with DOE's requirements for implementation of the National Environmental Policy Act of 1969 (NEPA) (10 Code of Federal Regulations [CFR] Part 1021.314). It considers whether the Final Environmental Impact Statement and Environmental Impact Report for Continued Operation of Lawrence Livermore National Laboratory and Sandia National Laboratories, Livermore (1992 EIS/EIR) should be supplemented, whether a new environmental impact statement (EIS) should be prepared, or no further NEPA documentation is required.

The SA examines the current project and program plans and proposals for LLNL and SNL-L, operations to identify new or modified projects or operations or new information for the period from 1998 to 2002 that was not considered in the 1992 EIS/EIR. When such changes, modifications, and information are identified, they are examined to determine whether they could be considered substantial or significant in reference to the 1992 proposed action and the 1993 Record of Decision (ROD). DOE released the draft SA to the public to obtain stakeholder comments and to consider those comments in the preparation of the final SA. DOE distributed copies of the draft SA to those who were known to have an interest in LLNL or SNL-L activities in addition to those who requested a copy. In response to comments received, DOE prepared this Comment Response Document.

1.2 PUBLIC PARTICIPATION

DOE issued and distributed the draft SA for public review and comment on January 26, 1999. The public comment period extended to February 25, 1999. DOE held two public briefings on the draft SA on February 11, 1999, in Livermore, California. The public briefings were held to receive oral and written comments and to provide information on the SA to the public. Spoken comments given during the public briefings were recorded by a court reporter and a transcript produced. The briefings on the SA were conducted using an informal format with a facilitator. The format chosen allowed for a two-way interaction between DOE and the public. The facilitator helped to direct and clarify discussions and comments, allowing every commentor the chance to formally present comments.

DOE 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. DOE gave equal weight to spoken and written comments, to comments received at the public briefings, and
to comments received in other ways during the response period. Comments were reviewed for content and relevance to the environmental analysis contained in the draft SA.
2 COMMON ISSUES

Several topics were considered by DOE to need further explanation or clarification. These topics, called common issues, relate to comments received on the draft SA or are topics not related to the environmental review but are considered by DOE to be of broad interest or concern to stakeholders. The common issues include the following topics:

- Supplement Analysis Process
- Proposed Changes in Administrative Limits
- Opposition to Nuclear Activities
- Concerns With HEPA filters

2.1 SUPPLEMENT ANALYSIS PROCESS

DOE issued the Final Environmental Impact Statement and Environmental Impact Report (EIS/EIR) for Continued Operation of Lawrence Livermore National Laboratory and Sandia National Laboratories, Livermore in 1992, to meet the requirements of the National Environmental Policy Act and the California Environmental Quality Act. The 1992 EIS/EIR evaluated the impacts on the environment of existing and proposed operations at LLNL and SNL-L for the period 1992 through 2002. On January 21, 1993, DOE issued a ROD to continue operation of LLNL and SNL-L, including projects proposed for the near term (next 5 to 10 years). The preferred alternative included current operations, programmatic enhancements, and facility modifications in support of research and development missions established by the President and Congress.

DOE prepares site-wide EISs for certain large, multiple-facility DOE sites to assess the environmental impacts of operations at these sites. DOE's regulations require the evaluation of site-wide EISs at least every five years by means of a supplement analysis to determine whether the existing EIS remains adequate, whether to prepare a new site-wide EIS, or supplement the existing EIS. DOE issued the Draft Supplement Analysis for the Lawrence Livermore National Laboratory and Sandia National Laboratories, Livermore Site-wide Environmental Impact Statement for public review and comment on January 26, 1999.

The Council on Environmental Quality regulations for implementing NEPA state that a supplemental EIS “shall be prepared if there are substantial changes to the proposal or significant new circumstances or information relevant to environmental concerns.” In preparing this SA, DOE examined the current project and program plans and proposals for LLNL and SNL-L to
identify new or modified projects or operations or new information for the period from now to 2002 that was not available for consideration in the 1992 EIS/EIR. When such elements were found, they were examined to determine if they resulted in environmental impacts that exceeded the bounds of the impacts of LLNL and SNL-L operations presented in the 1992 EIS/EIR analysis; and if the bounds were exceeded, whether the incremental environmental impacts were significant. A *bounding analysis* is an analysis designed to overestimate or determine an upper limit to potential impacts or risks.

The SA determined that SNL-L continues to operate within the levels described in 1992. No significant new programs or projects have been proposed since 1992 or are planned for SNL-L for the near future. The SNL-L evaluation revealed that the impacts were within the bounds of the 1992 EIS/EIR analysis or the incremental differences in impacts were not significant. No supplementation of the 1992 EIS/EIR is needed on the basis of SNL-L activities.

LLNL continues to operate within the general statement of action described in 1992 EIS/EIR and its associated ROD; however, some projects and proposals have been cancelled or modified and some new ones have been developed. In addition, some new information is available on the site environment. A number of key projects or proposals were identified that would be implemented between 1998 and 2002. Also identified were proposed changes in administrative limits for certain radioactive materials and changes in waste generation and management. Administrative limits are the total quantities of certain materials allowed in LLNL facilities.

When environmental impact areas were screened to determine whether it was clear that impacts of LLNL operations, considering this new information, would remain within the envelope of environmental consequences analyzed in the 1992 EIS/EIR, DOE found that further evaluation was required for seven impact areas. These areas included sensitive species, wetlands, paleontological resources, radiological consequences of accidents, waste generation and management, environmental justice, and cumulative impacts. The SA presents the results of these evaluations, and concludes that either the projected impacts are within the bounds of the 1992 EIS/EIR analysis, or that the incremental differences are not significant. The overall picture of site-wide LLNL operations remains very similar to that presented in the 1992 EIS/EIR, and supplementation is not needed.

### 2.2 PROPOSED CHANGES IN ADMINISTRATIVE LIMITS

In response to its research and development mission and programmatic needs to the year 2002, DOE is proposing changes in administrative limits for certain radioactive materials in some of the LLNL buildings that carry out these activities.

Administrative limits are controls on the maximum amounts of material that can be processed at one time or kept in storage. As the name implies, these limits are administrative
rather than regulatory. Administrative limits are set only at the level that is needed to meet programmatic activities and take into account safety and material accountability restrictions. Administrative limits may be established for a group of buildings, a single building or room, a storage vault, a glovebox, or even a container. DOE analyzes the associated environmental impacts of the administrative limits in NEPA documents for nuclear and hazardous facilities. Administrative limits for plutonium, uranium, and tritium are within the capacity and infrastructure capabilities analyzed by the safety analysis report (SAR) process. The enhanced programs that require higher material inventories are listed in the SA. The safety implications of proposed changes to the administrative limits that were analyzed in the 1992 EIS/EIR and its ROD are reviewed in this SA.

DOE is proposing to change the administrative limit for uranium in Buildings 332 and 334 from 300 kilograms to 3500 kilograms. This would consist of 500 kilograms of enriched uranium (greater than 1% in the U-235 isotope), and 3,000 kilograms of depleted or natural uranium (less than 1% in U-235). The isotope U-235 is capable of fission, that is, when collocated in sufficient quantity (called a critical mass), it can be the source of criticality accidents, and can serve as a fuel in reactors and nuclear weapons. The 3,000 kilograms of uranium with less than 1% U-235, while radioactive at a low level and toxic to humans, is not capable of a sustained nuclear reaction under current facility conditions. This latter form is the uranium found naturally in soils and rocks throughout much of the world.

Although the proposed administrative limits for uranium would increase the total amount in the building complex, controls would continue to limit the material in a glovebox or at a work station well below that of a critical mass. In other words, the amount of material in storage would increase, but the amount of material being worked on at any one time would not increase. Nevertheless, a criticality accident of low probability is possible with uranium. The 1992 EIS/EIR identified as possible an inadvertent plutonium criticality accident for Building 332 with a dose of 2.0 rem at the LLNL fenceline as the bounding criticality accident for the Building. Subsequent analysis in the 1995 SAR indicated a uranium criticality accident could result in a dose of 3.8 rem at the fenceline. To put this in perspective, this dose is within the range (1 to 5 rem) at which some protective action is recommended by the U.S. Environmental Protection Agency (EPA), and is not unlike the 2.0 rem dose from a plutonium criticality accident in the 1992 EIS/EIR. The offsite population dose is still conservatively estimated to result in less than one fatal cancer among the public, as discussed in both the SA and in the 1992 EIS/EIR.

DOE is proposing to raise the administrative limit for tritium in Building 331 to 30 grams. The increase is necessary to enable LLNL to support programs associated with decommissioning and decontamination of DOE's Mound site, the expansion of the U.S. Army Tritium Recovery and Recycle Project, and the target fills for the National Ignition Facility (NIF). Before 1992, the tritium limit for Building 331 was 300 grams. The 1992 EIS/EIR set an administrative limit of 5 grams of tritium in any one facility, with no more than 10 grams to be divided among Buildings 298, 391 and 331. While the current proposal is to increase the administrative limit to 30 grams, the total quantity of tritium material that would ever be at risk during operations would remain the same as analyzed in the 1992 EIS/EIR. The administrative
control enforced in 1992 has not changed and still limits the inventory stored in any one vessel or connecting process (the “at risk” inventory) to 3.5 grams. Accidents with potential for releasing the additional tritium from its stored configuration are not considered credible. Major improvements in facility systems and operations since 1992 have significantly reduced the expected frequency of accidents leading to tritium release. While tritium facility activities are expected to increase if the proposed 30 grams inventory limit is approved, they would not approach the level upon which the 1992 EIS/EIR analysis was based.

DOE proposes to raise the limits for Building 239 from 4.5 to 6 kilograms for plutonium and from 18.5 to 25 kilograms for uranium, as discussed in section 6.2.3 of the SA. Components are brought into Building 239 for radiographic inspection; all of the plutonium and uranium in the components is sealed in doubly contained packaging that is not removed during radiographic operations, and the sealed containers are returned to storage in Building 332.

The current Building 239 SAR evaluates the consequences of a seismic event or accidental dropping of a component, compromising the containment barriers, based on an inventory of 4.5 kilograms of plutonium or 18.5 kilograms of uranium. The SAR analysis was scaled linearly to provide an estimate of the doses that would result from an accident with the proposed larger amounts of radioactive material. These projected doses are much lower than the whole-body dose range at which the EPA recommends protective action for accident releases and are well within the 1992 EIS/EIR bounding accidents involving operations with plutonium or uranium at LLNL.

The SA demonstrates that while the calculated consequences to the exposed populations and to a maximally exposed individual from an accident would increase in some cases over those published in the 1992 EIS/EIR, these impacts still are not significantly different from those established by the 1992 EIS/EIR. The accident analysis presented in the 1992 EIS/EIR still adequately characterizes the potential impacts of such accidents that may occur at LLNL, even under the proposed increased limits for radioactive materials in inventory.

2.3 OPPOSITION TO NUCLEAR ACTIVITIES

DOE acknowledges that many people are opposed to the development and testing of nuclear weapons. Since the 1940’s, Congress has directed DOE and its predecessor agencies to develop and produce the nation’s nuclear weapons, and to ensure the reliability and safety of the nuclear weapons stockpile. With the end of the Cold War, DOE has been developing strategies for appropriate adjustments to DOE site missions and activities consistent with current national security policies that reflect post-Cold War impacts, including a smaller enduring stockpile. However, even in the post-Cold War period, international dangers remain, and nuclear deterrence will continue to be a cornerstone of U.S. national security policy for the foreseeable future.
In 1992, the United States declared a moratorium on underground nuclear testing. In 1995, the President extended the moratorium and pursued a Comprehensive Test Ban Treaty (CTBT). Before the extension of the moratorium, Congress passed the National Defense Authorization Act of 1994 (Public Law 103-160) which directs DOE to maintain a high level of confidence in the safety, reliability and performance of the nuclear weapons stockpile, and to maintain the ability to design, develop, manufacture, and test nuclear weapons.

DOE has developed a comprehensive program of stockpile stewardship and management that maintains essential capabilities for stockpile safety and reliability, while meeting other legal and policy directives. Stockpile stewardship capabilities are currently viewed by the United States as a means to further U.S. nonproliferation objectives in seeking a zero-yield CTBT. It is also reasonable to assume that U.S. confidence in its stewardship capabilities would remain as important, if not become more important, in future arms control negotiations to further reduce its stockpile.

LLNL is one of several national laboratories that support DOE’s responsibilities for national security. DOE assigns mission elements to LLNL based on the facilities and expertise of the staff located there. Such assignments are made within the context of national security needs as expressed, for example, in Presidential Decision Directives; the National Defense Authorization Act for Fiscal Year 1994 (Public Law 103-160) and other congressional actions; the U.S. Department of Defense Nuclear Posture Review; treaties in force, such as the Nuclear Nonproliferation Treaty and the Strategic Arms Reduction Treaty (START I), and treaties signed but not yet entered into force, such as the START II and the CTBT.

2.4 CONCERNS WITH HEPA FILTERS

Plutonium work in Building 332 is normally done in filtered gloveboxes. If the filter on the glovebox should fail, the plutonium would be carried downstream to the confinement filters. The confinement filters are two stage filters used to prevent release of contamination to the environment. Plutonium operations at Building 332 have two stages of High Efficiency Particulate Air (HEPA) filters to prevent releases to the environment. Should airborne plutonium escape the primary containment barriers with their associated glovebox exhaust/filtration systems, the ventilation systems will carry it to exhaust plenums with two stages of confinement filters. One stage of filtration under normal conditions is adequate to prevent environmental releases. The second stage, in series with the first, provides redundancy in case the first stage leaks or fails, and also increases the total efficiency of collection for the system. When a filter fails, it would capture less of the particles in the airstream, depending upon the size of the opening, but most of the previously filtered particles would remain with the damaged filter. Although additional stages may be in use in some facilities elsewhere, and provide even more redundancy, they are not necessary. The confinement filters for Building 332 are of fire-resistant construction and are operable for at least 2 hours at temperatures of 120°C (248°F).
All HEPA filters that are relied on to provide confinement (final stages) of ventilation system transmitted contamination are monitored on a weekly basis for particle load as a function of differential pressure. If any single filtration stage is found to have a pressure drop greater than 4 inches WG (water gauge), filters are replaced as routine maintenance. The maximum acceptable differential pressure is 5 inches WG for all final stages of filtration. At the time of replacement, and on an annual basis, all final stage HEPA filters are in-place tested to confirm filtration efficiency and integrity of the installation with respect to gasket/frame seal. The acceptance criteria for the in-place test is in accordance with ERDA 76-21 (99.97% efficiency at a mean particle diameter of 0.7 micrometers).

To assure that the filters are not subjected to excessive pressure due to dust loading under routine operations, the pressure drop across the filters in Building 332 is monitored, and when it exceeds 4 inches WG, the filter is replaced as routine maintenance. The efficiency for filters in each stage is checked annually, and individual filters are replaced when they cannot meet 99.97% efficiency for particles ranging from 0.1 to 1.0 with an average particle size of 0.7 micrometers diameter. The Facility has recently decided to change the efficiency test criteria to a particle size of 0.3 micrometer diameter.

A concern was raised that HEPA filters are "translucent" to 0.1 micrometer diameter particles, implying that the particles have a very low capture efficiency and high penetration. The dissertation by Ronald C. Scripsick, published as LA-12797-&, Leaks in Nuclear Grade High Efficiency Aerosol Filters, 1994, Table IV-VI, provides the diameter of particles with the lowest capture efficiency, i.e., the ones that penetrate the most. For nine filters tested at the air speeds usually used in public protection, the particle diameter with the least efficiency ranged from 0.148 to 0.196 micrometers. For all nine filters, the collection efficiency for these particles was 99.97% or higher. This performance can be expected on all HEPA filters used by DOE, as the DOE acceptance testing standard rejects all filters with less than 99.97% efficiency at 0.3 micrometers, which is quite close to the particle size of maximum penetration.

DOE contractors are currently using the heterodisperse 0.7 micrometer average particle size aerosol (range from 0.1 to 3 micrometers) as recommended in ASME N510 to leak test their HEPA filters. The 0.3 micrometer monodisperse particle generators are too cumbersome to use in the field, as they weigh several tons.

Current laser particle counters allow in-place efficiency testing of HEPA filters to determine filter efficiency at any particle size, including 0.15 micrometer, the particle size at which HEPA filters are least efficient. Preliminary lab measurements show that the two methodologies (laser particle counter looking at 0.15 micrometer and the heterodisperse 0.7 micrometer average particle size aerosol) give essentially the same results when the leakage rate reaches 0.1%. This is the leakage rate assumed in the SAR and the 1992 EIS/EIR analyses for the final stage HEPA filters. Therefore, LLNL believes the current leakage checks are adequate to check for all particle sizes (including the 0.15 micrometer size).
DOE has promulgated HEPA filter standards: DOE-STD-3020-97, Specification for HEPA Filters Used by DOE Contractors; DOE-STD-3022-98, DOE HEPA Filter Test Program; DOE-STD-3025-99, Quality Assurance Inspection and Testing of HEPA Filters; and DOE-STD-3026-99, Filter Test Facility Quality Program. These standards are available at the internet site http://www.explorer.doe.gov:1776. These standards are being evaluated for incorporation into the LLNL “WorkSmart Standards” for possible inclusion in future contract modifications.

The burning of plutonium creates a substantial number of very small particles, 0.1 micrometer and smaller. However, only 0.01\% or less of the total mass of airborne plutonium formed by burning is less than 0.2 micrometers in diameter (K. Stewart, *The Particulate Material Formed by the Oxidation of Plutonium*, in Progress in Nuclear Energy Series IV, Vol. 5, 1963). The number of these particles is not as important as their total mass. To a first approximation, the potential health effect of a particle deposited in the lungs is proportional to the mass of the particle. Therefore, the particles that have the greatest penetration of tested HEPA filters are not those of the greatest health significance.

A concern was raised that many HEPA filters have been in place for a longer period of time than what experts say is appropriate and that their age has probably affected their ability to withstand a high pressure difference that could occur from loading by smoke or water in some accident scenarios. The laboratory has monitored and tested the filter performance and there have been no environmental releases of airborne plutonium except for the release in 1980. That release resulted from an incorrect changeout and sealing of HEPA filters, rather than from failure of the HEPA filter. Continuous monitoring of the facility, using methods sanctioned by the EPA, indicates that the HEPA filter systems have been operating so that emissions have not been occurring. Environmental monitoring data and assessments of public dose are discussed in the LLNL Site Annual Environmental Report (SAER).

With LLNL’s continuing missions involving plutonium operations in Building 332, the priority of HEPA filter replacement has been raised. In October of 1998, detailed plans were completed to replace all confinement filters older than 8 years by October 1999. Meanwhile, the weekly surveillance of pressure drop and the annual leak testing of confinement filters will continue. These filters are not subjected to excessive cold or heating, and the ventilation design and fire protection system is intended to protect them during accidents involving fire. Analyses have been made of accidents of credible fire releases in the Building 332 SAR. An accident that loses the integrity of both banks of confinement filters was regarded as incredible (a probability of less than one in one million per year). The consequences of the credible accidents do not exceed radiological dose guidelines at the site boundary or the impacts of bounding accidents in the 1992 EIS/EIR. Nevertheless, DOE recognizes that accidents of low probability can occur.

DOE acknowledges that one type of filter in use is only partially qualified for nuclear applications. This filter is commonly referred to as a “box” or “birdcage” filter, and is used in some locations. The facility assures adequate performance in routine operations by weekly
surveillance of the pressure drop and by annual tests of filtration efficiency. Confinement filter systems served by this type are:

- Downdraft room exhaust sub-system containing 4 filters
- Increment III glovebox exhaust containing 2 trains of 4 filters each for a total of 8 filters.

After the near-term exchange is made to attain filters that are less than 8 years old, the laboratory will consider the design changes necessary to replace the box filters.

LLNL currently has policies and procedures in place for the proper management of used HEPA filters from programmatic operations. Used HEPA filters are characterized for waste acceptance criteria either through process knowledge or sampling and analysis. Depending on the results of the characterization, HEPA filters may be disposed of as low-level radioactive waste (LLW) or low-level mixed waste (LLMW). If the quantities and types of radionuclide contamination meet the definition of transuranic waste, the filters have been stored onsite or at the Nevada Test Site until they can be disposed of at the Waste Isolation Pilot Plant (WIPP). These HEPA filters are stored in metal drums or metal boxes.

A concern was raised that DOE does not have a single, central office that oversees and provides guidance in the use of HEPA filters complex-wide. DOE is a large organization whose structure does not lend itself to a separate, central office for every aspect of environment, safety and health (ES&H). Rather, DOE relates its ES&H performance expectations to its contractors, and enforces these through contractual mechanisms, changing contractors if necessary. DOE offices in the field provide oversight of the contractor ES&H programs. The Defense Nuclear Facilities Safety Board (DNFSB) provides further oversight. DOE expectations include meeting requirements in the DOE orders and Federal regulations that provide for protection of workers and public from radiation. Violations of the Federal regulations are enforced under 10 CFR 820 by an independent office in DOE.
3 COMMENT DOCUMENTS

3.1 INTRODUCTION

This section presents the documents submitted to the DOE during the 30-day public comment period on the draft SA and the transcripts of the two public briefings held on February 11, 1999. DOE reviewed each document and transcript and identified the public comments provided. Each comment identified is marked in the margin with a bar and the document number and sequential comment number in that document. For example, Comment 3-11 was identified in Document 3 (3) as the eleventh (11) comment within that document. DOE has responded individually to each identified comment in Section 4 of this Comment Response Document.
3.2 Document 1: Tri-Valley CAREs
February 10, 1999

U.S. Department of Energy
Oakland Operations Office
1301 Clay St.
Oakland, CA 94612

Re: DOE/EIS-0157-SA-01, January 1999 - Draft Supplement Analysis for Continued Operation of Lawrence Livermore National Laboratory and Sandia National Laboratories, Livermore, California

Dear Sirs and Madams:

This letter is Tri-Valley CAREs' (Citizens Against a Radioactive Environment) response to the above-referenced Draft Supplement Analysis (DSA) on behalf of Tri-Valley CAREs' approximately 2200 family members in the communities surrounding the Lawrence Livermore National Laboratory (LLNL) and the Sandia National Laboratories (SNL).

Tri-Valley CAREs, a 16-year-old grassroots environmental organization, is a community-based "watch dog" over LLNL's activities. Further, we hold two U.S. Environmental Protection Agency Technical Assistance Grants to monitor environmental cleanup at both LLNL's Main Site and its Site 300 weapons testing station.

Tri-Valley CAREs strongly disagrees with the DSA's conclusion that no supplementation of the 1992 EIS/EIR is needed. In fact, an entirely new EIS/EIR is needed. Our reasons are as follows:

A. Since 1992, LLNL has 1) remained a "Superfund" Site; 2) had chronic pollution problems; 3) had frequent accidents involving radioactive and toxic contaminants; 4) had chronic problems with noncompliance with safety regulations; 5) received numerous Notices of Deficiency and Notices of Violations from the State Dept. of Toxic Substances Control (DTSC); 6) continued to have groundwater contamination problems; 7) continued to have sewer system problems; and 8) continued to have problems with noncompliance with safe storage requirements.

On December 9, 1997, Tri-Valley CAREs sent a letter to the California Environmental Protection Agency Department of Toxic Substances Control, Region 2 (in Berkeley, California) as a public comment on LLNL's application for a Hazardous Waste Treatment & Storage Facility Permit (WTSF). This letter included a list of the following ongoing, chronic problems at LLNL:

1. Both LLNL's Main Site and Site 300 are on the National Priorities List as extremely contaminated "Superfund" sites. A federal regulation promulgated by past DOE Secretary Watkins requires environmental review of DOE facilities, including LLNL, every 5 years. LLNL's last full EIS/EIR was in 1992, nearly 7 years ago, and therefore out-of-date. More than a supplement analysis is needed in this instance. A new EIS/EIR is the appropriate and necessary level of environmental review.

2. LLNL has chronic pollution problems. As reported in May, 1997, the City of Livermore cited LLNL for chronic discharges of heavy metals and corrosive chemicals into the municipal sewer system. According to city officials, there had been 14 releases from LLNL...
above its permit limits since January, 1996, a rate of about one violation per month. One February, '97, accident involved a discharge of silver, costing $41,000, and another discharge in March, '97, this time of lead, cost $8,000.

3. LLNL has a history of frequent accidents right up to the present. Examples of on-site accidents reported just for 1997 include: February – LLNL doctors cut a small hunk of plutonium-contaminated tissue from an employee's thumb after the worker had accidentally stuck himself with a sliver of the radioactive metal during routine cleanup. March – Three LLNL workers were contaminated when uranium filings caught fire. April – It was reported that earlier in '97, a chlorine gas leak forced about 20 workers to flee after an alarm sounded. May – The City of Livermore cited LLNL, again, for chronic discharges of Heavy metals and corrosive chemicals. Since January, 1996, LLNL has violated its permit discharge limits about once a month. June – It was reported that in May, '97, two workers were contaminated with tritium (radioactive hydrogen) while packaging the radioactive waste in the Tritium Facility. July – On July 2, workers shredding used air filters were radioactively contaminated. One worker was contaminated with curium, an alpha emitter, on his chest, face and in his nostrils. A DOE report credited inadequate safety procedures for this accident. Another July, '97, accident (a hazardous waste technician accidentally mixed nitric acid and alcohol while workers were "bulking," i.e., pouring spent chemicals into waste drums; this combination of chemicals could cause fire, explosion or fumes), resulted in fumes that triggered alarms and caused 25 workers to evacuate and LLNL to suspend "bulking" for a week.

4. LLNL has a history of noncompliance with safety procedures. As mentioned in #3 above, on July 2, '97, an LLNL worker was radioactively contaminated with curium in an accident that DOE itself admitted was due to inadequate safety procedures. Also, in this instance, procedures that had been recently put into place with the State Department of Toxic Substances Control's (DTSC) guidance were apparently ignored by LLNL, which raises questions about whether LLNL really follows agreed-upon safety procedures. This problem is underscored by another 1997 LLNL report (titled Incident Analysis of Criticality Safety Control Infractions in building 332) confirming that a total of 15 criticality violations (a "criticality accident" is a runaway nuclear chain reaction) occurred over a two-month period (mid-May, '97 to mid-July, '97) in LLNL's plutonium facility (Building 332) – where, again, safety procedures were ignored. Since then, another criticality violation has occurred in Building 332, underscoring the systemic nature of this problem.

5. LLNL has a history of receiving Notices of Deficiency and Notices of Violation from the State Department of Toxic Substances Control, raising reasonable questions as to LLNL's good faith in complying with regulations and statutes, as well as with safety procedures implemented with the assistance of agencies such as DTSC. Please see sections 6a through 6g of the above-referenced 12/9/97 letter from Tri-Valley CAREs to DTSC for details of LLNL's ongoing compliance problems.

6. For years, LLNL's groundwater has been contaminated. Although steps have been taken to monitor, control and remedy it, this environmental threat still persists. Some examples include: 1) in 1997, LLNL's storm drains were found embedded with mercury, an extremely toxic material. The drains may have contributed mercury-laden runoff to the already-contaminated groundwater, as well as to surface water and to soil; and 2) At LLNL's Site 300 weapons testing station (located midway between Livermore and Tracy), during 1982-83 (and possibly again in 1996, 1997 and 1998), groundwater rose, saturating waste buried in disposal pits, and then receded, thus contaminating groundwater at deeper levels. At the recent January 26, 1998 Site 300 TAG (Technical
Assistance Grant) meeting with LLNL cleanup staff and representatives from various regulating agencies, Tri-Valley CAREs learned that, indeed, Site 300 has a current, serious problem with elevated levels of tritium in the groundwater which has contaminated an aquifer and which has formed a tritium plume nearly 2 miles long which must be dealt with before it reaches beyond the boundary of Site 300. The current elevated levels of tritium are, again, exacerbated by heavy rainfall which caused the groundwater to rise into tritium-contaminated disposal pits and then recede, taking tritium back into the groundwater at lower levels.

7. LLNL has a history of sewer system problems. LLNL’s current “Interim Status” (from DTSC) liquid waste treatment process discharges treated wastewater (WW) directly into the Livermore municipal sewer. Theoretically, treated WW is safe for discharge into the sewer, but, in view of 1) LLNL’s repeated violations of its sewer discharge permit (see #2 above), 2) past sewer leaks into the adjacent soil and groundwater, 3) the highly contaminated groundwater at both the Main Site and Site 300 (see above), and 4) the close proximity of the surrounding communities (Livermore and Tracy for the Main Site and Site 300, respectively), it is reasonable to question the safety of this practice.

8. LLNL has a history of being out of compliance with safe storage requirements (see # 5 & 6 above, also). Examples of this include: 1) “Old” waste – LLNL has had many violations in how long it stores hazardous waste, e.g., in 1989-90, a DTSC inspector inspected 21 of LLNL’s 100 hazardous waste site areas and found that 11 had waste stored for more than 1 year (1 year is the maximum allowed under California’s Health & Safety Codes before such waste must be treated and/or disposed). 2) Undocumented satellite accumulation areas – LLNL has never provided DTSC of these areas (where waste is kept “temporarily”), making inspection difficult to carry out. In the past DTSC Notices of Deficiency have been issued to LLNL for waste stored over 90 days. 3) Problems with mixed waste – DTSC has had difficulty in determining just how LLNL treats its mixed waste (i.e., radioactive waste combined with radioactive waste) in order to evaluate, among other things, whether a) an incompatible wastes are combined, and b) cross-contamination occurs between these two types of waste. One unanswered question is: Does LLNL ever label mixed waste as “radioactive?” In the past, Nevada Test Site, which accepts only radioactive waste, has returned waste shipments to LLNL because mixed wastes were included in the shipments, but were not labeled as such.

B. LLNL’s Plutonium Facility (Building 332) has a history of problems with its High Efficiency Particulate Air (HEPA) filters and with ongoing criticality violations.

Tri-Valley-CAREs has recently received DOE documents in response to an April, 1998, Freedom of Information Act request for information concerning the maintenance of Building 332’s HEPA filters. These responsive documents indicate that a history of chronic safety problems exists where these HEPA filters are involved. Tri-Valley CAREs’ areas of concern include: 1) the use of at least one type of HEPA filter that is only partially qualified for nuclear applications; 2) the fragility of these filters – e.g., they may fail when wet, hot, cold, or have too much air pressure applied; 3) the use of filters beyond the recommended length of time for on-line service (in some cases, they have been in service for 20-30 years, despite warnings by at least one LLNL Hazard Control Specialist that, for instance, filters should be retired at 8 years maximum); 4) DOE may not have a centralized division that oversees the use of HEPA filters complex-wide, leaving each facility on its own to cope with the problem of protecting employees and the public from plutonium contamination; and 5) LLNL may have problems with storage and disposal of old HEPA filters, thus encouraging the use of filters beyond recommended time periods, and also creating yet another area of concern re: radioactive waste at LLNL. (At least one document shows that used, off-line filters are considered to be TRU waste. If so, does this mean, for instance, that used filters have been accumulating for years at LLNL awaiting the opening of WIPP?)
As mentioned above in section A.4, a series of criticality violations occurred in LLNL’s Plutonium Facility during 1997-98. These violations resulted in the Defense Nuclear Facilities Safety Board recommending shut-down of the Plutonium Facility while investigations were being made as to inadequate adherence to safety regulations and guidelines. The Plutonium Facility has since been operating on a limited status, “restart” mode. Even then, an additional criticality safety violation has occurred (on August 7, 1998).

In view of these concerns, among others, Tri-Valley CAREs strongly advocates that the above problems in Building 332 are clearly “significant new circumstances or information relevant to environmental concerns...” (40 CFR Parts 1500-1508, 10 CFR Part 1021) since the 1992 EIS/EIR for LLNL, thus requiring a new EIS/EIR.

A further plutonium issue surfacing since the 1992 EIS/EIR is the discovery of plutonium up to 1,000 times “background” found in Big Trees Park, Livermore.

Tri-Valley CAREs considers this new goal a major change from the 1992 EIS/EIR which requires analysis per a new EIS.

DOE wants administrative limits to be increased for both plutonium and uranium as follows:

1) The 1992 EIS/EIR goal for the amount of plutonium to be in Buildings 332 & 334 of the Superblock was to reduce it from 700 kg to 200 kg. DOE claims that this goal has not been achieved because only ½ of LLNL’s inventory was relocated off-site, and other DOE facilities cannot take any more LLNL plutonium until after the year 2000. Therefore, DOE now asks that the total amount at LLNL be kept at 700 kg, with the eventual goal of reducing it. Tri-Valley CAREs considers this new goal a major change from the 1992 EIS/EIR which requires analysis per a new EIS.

2) The 1992 EIS/EIR limit for enriched uranium in the same buildings was 300 kg. DOE now wants to increase the limit for enriched uranium to 500 kg and for natural uranium to 3,000 kg, an enormous increase! Again, these new suggested goals are a major change from the 1992 EIS/EIR, which requires analysis per a supplemental EIS. If, as the DSA claims, these changes are to support RD&D (research, development and demonstration) of 1) plutonium immobilization and 2) technologies for uranium conversion, reuse, waste management and disposal, Tri-Valley CAREs then requests they be analyzed per a new EIS as major changes from the 1992 EIS/EIR.

Since Tri-Valley CAREs knows, by virtue of DOE’s own “Green Book,” which describes DOE’s intent to carry out new nuclear weapons R&D, and, since LLNL is a primary nuclear weapons design facility, Tri-Valley CAREs seriously questions DOE’s given justifications for requesting these weapons-related materials’ significant increases. Tri-Valley CAREs humbly reminds DOE that the “cold war” is supposedly over.

Further, to answer Tri-Valley CAREs’ questions about why DOE wants increased administrative limits for uranium (e.g., is it for the U-AVLIS?), Tri-Valley CAREs requests that DOE lay out in detail the programmatic elements required under NEPA.

D. New and/or changed programs at LLNL since 1992.

There are a plethora of new and/or significantly changed programs at LLNL since 1992, including the National Ignition Facility, the afore-mentioned U-AVLIS program, subcritical nuclear tests and the ADAPT work on plutonium at LLNL.
Tri-Valley CARES, for all the foregoing reasons, among others, demands that the DOE’s conclusion (i.e., that no supplemental EIS is required for LLNL and SNL) be put aside, and that, in its place, the conclusion be reached that, due to clearly “significant new circumstances or information relevant to environmental concerns…” (40 CFR Parts 1500-1508, 10 CFR Part 1021) a new or, at a minimum, a supplemental EIS is required.

Sincerely,

Marylia Kelley
Executive Director
Tri-Valley CARES

Sally Light
Nuclear Program Analyst
Tri-Valley CARES

Rene Steinhauer
Community Organizer
Tri-Valley CARES
December 9, 1997

CalEPA
Dept. of Toxic Substances Control, Region 2
700 Heinz Avenue, Suite 300
Berkeley, CA 94710
Attn: Sheila Alfonso, Project Manager

Re: Lawrence Livermore National Laboratory's (LLNL) Application for a Hazardous Waste Treatment & Storage Facility Permit (WTSF).

Dear Ms. Alfonso,

This letter is Tri-Valley CAREs' (Citizens Against a Radioactive Environment) response to LLNL's application for the above-referenced WTSF permit on behalf of Tri-Valley CAREs' approximately 1900 family-members in the communities surrounding the Lawrence Livermore National Laboratory (LLNL). Our letter is part of the public comment mandated by the California Environmental Quality Act (CEQA) pursuant to this permitting process. Additionally, we submit this response on behalf of other interested organizations listed as signatories at the end of this letter.

Tri-Valley CAREs is a grassroots environmental organization that is a community-based "watch dog" over LLNL's activities. We also hold two U.S. Environmental Protection Agency Technical Assistance Grants to monitor environmental cleanup at both LLNL's Main Site and its Site 300 weapons testing station.

Tri-Valley CAREs was present at both Dept. of Toxic Substances Control's (DTSC) Sept. 23, 1997 Public Workshop (at which our Executive Director, Marylia Kelley, was a panelist representing the community viewpoint, giving a 15-minute presentation) and the Oct. 9, 1997 Formal Public Hearing. A number of our members spoke at these two events, and at least one member handed over a written comment to DTSC at the Hearing. We mention this to underscore Tri-Valley CAREs' members' ongoing participation as to their serious concerns re: risks to public health and to the environment created by LLNL's programs, most of which are related to the research and design of nuclear weapons, and which involve numerous toxic and nuclear substances.

Tri-Valley CAREs strongly advocates that the DTSC not issue LLNL a permit to


operate its own on-site Hazardous Waste Treatment & Storage Facility at this time for
the following reasons:

1. An Environmental Impact Report (EIR) should be done at LLNL’s Main Site and Site 300. For 45 years (since 1952), LLNL has generated a wide variety of nuclear and toxic wastes resulting from its work on nuclear weapons, fusion, lasers, etc. In 1987, LLNL’s Main Site was placed on the National Priorities List as an extremely contaminated “Superfund” site. LLNL’s Site 300 was added to the “Superfund” list in 1990. Since LLNL is already a “Superfund” site, rather than issuing a WTSF permit, which would allow LLNL to continue “business as usual,” DTSC should carry out an EIR of LLNL’s Main Site and Site 300, pursuant to CEQA. Further, a federal regulation promulgated by past DOE Secretary Watkins requires environmental review of DOE facilities, including LLNL, every 5 years (LLNL’s last full EIS/EIR was in 1992, nearly 6 years ago, and therefore is out-of-date).

2. Recent excavation at LLNL’s National Ignition Facility (NIF) construction site has uncovered unauthorized toxic waste dumping. In Sept., 1997, construction crews excavating earth at LLNL’s NIF construction site ran into what appears to be an unauthorized “dumping ground.” Excavated to-date are over 100 capacitors (reportedly from earlier fusion programs), with many leaking highly toxic PCBs, 75 crushed waste drums marked “radioactive,” and contaminated soil (37 truckloads have already been sent to a Utah disposal site). This discovery raises serious questions about LLNL’s past hazardous waste practices. Under the federal Resource Conservation and Recovery Act, which DTSC is authorized to implement in California, DTSC should require a comprehensive RCRA Facility Assessment (RFA) to identify the NIF “burial” site’s areas of concern before proceeding any further with the WTSF permitting process. This RFA should augment other applicable state and federal regulations, and, we believe could be incorporated into the EIR on the overall site. Additionally, we are concerned that the proposed site for WTSF may also sit on top of unauthorized buried waste because it abuts the north side of the NIF construction site.

3. LLNL has chronic pollution problems. Under CEQA, DTSC, as the permitting agency, must take note of existing problems of on-site and off-site pollution at LLNL. As reported in May, 1997, the City of Livermore cited LLNL for chronic discharges of heavy metals and corrosive chemicals into the municipal sewer system. According to city officials, there had been 14 releases from LLNL above its permit limits since January, 1996, A rate of about one violation per month. A February, ‘97, accident involved a discharge of silver, costing $41,000. Another discharge, in March, ‘97, this time of lead, cost $8,000.

4. LLNL has a history of frequent accidents right up to the present. This history includes a 1990 accident when tritium (radioactive hydrogen) spilled out of a tank at LLNL’s Building 292, resulting in soil and groundwater contamination.
Examples of on-site accidents reported just for 1997 include: February -- LLNL doctors cut a small hunk of plutonium-contaminated tissue out of an employee's thumb after the worker had accidentally stuck himself with a sliver of the radioactive metal during routing cleanup. March -- Three LLNL workers were contaminated recently when uranium filings caught fire. April -- It was reported that earlier this year, a chlorine gas leak forced about 20 workers to flee after an alarm sounded. May -- The City of Livermore cited LLNL, again, for chronic discharges of heavy metals and corrosive chemicals. Since January, 1996, LLNL has violated its permit discharge limits about once a month. June -- It was reported that in May, '97, two workers were contaminated with tritium (radioactive hydrogen) while packaging the radioactive waste in the Tritium Facility. July -- On July 2, workers shredding used air filters were radioactively contaminated. One worker was contaminated with curium, an alpha emitter, on his chest, face and in his nostrils. A DOE report credited inadequate safety procedures for this accident. Another July, '97 accident (a hazardous waste technician accidently mixed nitric acid and alcohol while workers were "bulking," i.e., pouring spent chemicals into waste drums; this combination of chemicals could cause fire, explosion or fumes), resulted in fumes that triggered alarms and caused 25 workers to evacuate and LLNL to suspend "bulking" for a week. Certainly, it is reasonable that LLNL should not be issued a permit without DTSC's thorough investigation into LLNL's accidents and safety procedures, and, again, the appropriate vehicle is an EIR.

5. LLNL has a history of noncompliance with safety procedures. As mentioned in issue #4 above, on July 2, 1997, a worker at LLNL was radioactively contaminated with curium in an accident that DOE itself admitted was due to inadequate safety procedures. Also, in this instance, procedures that had been recently put into place with DTSC's guidance were apparently ignored by LLNL, which raises questions about whether LLNL really follows agreed-upon safety procedures. This is underscored by another recent LLNL report (see attached report, "Incident Analysis of Criticality Safety Control Infractions in Building 332") confirming that a total of 15 criticality violations (a "criticality accident" is a runaway nuclear chain reaction) occurred over a two-month period (mid-May,'97 to mid-July, '97) in LLNL's plutonium building (Building 332) -- where, again, safety procedures were ignored. This internal LLNL report reveals deep, pervasive, systemic deficiencies in management, worker understanding and employee attitudes, citing 1) inadequate training, with workers unaware of rules and some even stating that there is nothing wrong with violating rules to get a job done; and 2) ineffective management, with supervisors not recognizing the problem. It is therefore reasonable that DTSC should not rely on informally advising LLNL re: safety procedures, but should use formal processes (such as an EIR) to ensure LLNL's compliance with safety procedures. Moreover, Tri-Valley CAREs has an information request into DOE regarding a subsequent criticality violation. We have been told that report is in draft, and is not yet publicly available. Again, this underscores the systemic nature of the problem.
6. LLNL has a history of receiving Notices of Deficiency and Notices of Violations from DTSC, right up to the present, as seen in the following:

   a. A May 21, 1997 letter from Rick Robison, Unit Chief of DTSC's Statewide Compliance Division to Harry Galles, Head of LLNL's Environmental Protection Dept., cites the following combined waste (CW) violations: 1) possible hazardous & radioactive constituents of CW remaining on-site weren't identified; 2) waste generating processes for wastes inspected were not identified; 3) accumulation start dates of CW were not listed at Satellite Accumulation Areas; 4) the treatment process description, as well as the reason for the treatment, for CW that was treated and then sewer was not provided, nor was information provided regarding the disposition of the sludge produced by the treatment process; 5) a date of treatment was not provided; 6) no information was provided for attempts to find available treatment and/or disposal options for CW; 7) no manifest number was given for CW shipped off-site.


   c. Ms. Barry's May 23, 1997 Inspection Report also cites later violations by LLNL, including: 1) DTSC's 8-14-92 Compliance Evaluation Inspection (CEI) report's findings of 11 violations including storage of incompatible wastes, failure to certify a repaired tank before returning it to service, having an open waste container, and failure to complete employee training; 2) DTSC's 8-6-93 CEI report's findings of 17 violations, including improper storage of incompatible wastes, incomplete inspection logs, inadequate aisle space in waste storage area, improper labeling of hazardous wastes, inadequate employee training, failure to do tank certification, storage of waste over 90 days without authorization, failure to maintain land ban notification/certification records, and falsification of records; and 3) DTSC's 6-1-94 field-issued CEI report's findings of 7 violations, including storage of hazardous waste over 90 days without authorization or permit, failure to properly label hazardous wastes, failure to meet treatment standards, notification failures, failure to maintain inspection logs with required information, failure to inspect hazardous waste tankers each operating day, and failure to provide annual refresher employee training.

   d. Ms. Barry's May 23, 1997 Inspection Report also describes how LLNL's Total Waste Management System (TWMS), a method of tracking waste sitewide (e.g., waste source, treatment method, treatment results, storage, discharge, movement throughout the site, ultimate destination, shipping date and manifest number) using computer and waste drum bar codes, was inoperable at the time of her
e. Ms. Barry's May 23, 1997 Inspection Report also cited LLNL for violating 1) 22 California Code of Regulations section 6626.23(a) (1-3); (b) and (e) for shipping CW off-site without a manifest; 2) 22 CCR 66265.71(a)(1-6) for receiving CW from Site 300 without a manifest; (3) 22 CCR 66262.34 (f) (1-3) for storing CW labeled “Radioactive Waste Only,” instead of using the required hazardous waste label (the statute requires hazardous waste labels for all Resource Conservation and Recovery Act (RCRA) wastes, all mixed wastes, all California wastes and all combined wastes, in addition to any labeling required by the AEC (sic) for the radioactive portion of the waste); 4) California Health and Safety Code (CH & SC) sections 25200.5(b)(1-2) and (c), and 25201(a) for storing and treating CW's not listed on the DTSC-approved Part A permit as well as treating CW with processes not listed on the DTSC-approved Part A permit, and also for storing CW for more than 1 year without DTSC's written authorization (this latter also violates CH&SC section II part 1(a) and the Interim Status Document issued by DTSC); 5) 22 CCR 66265.13(a)(1) and (b)(1-2) for excluding from its Waste Analysis Plan (WAP) the appropriate methodology and parameters for making analyses of California hazardous wastes as well as RCRA hazardous wastes; and 6) 22 CCR 66265.16(a)(1-2) and (3)(A-F); (c) and (d)(3) for inadequate training procedures, in that a) LLNL's Training Plan for employees in the Hazardous Waste Management Dept. (HWMD) was below minimum requirements, and b) the WAP requires extensive lectures and practical training in sampling procedures and the handling of samples, yet none of the HWMD training descriptions referred to any practical training other than first aid and fire/earthquake training.

f. DTSC's 3-7-97 Notice of Deficiency re: LLNL's Part B Application for the WTSF permit now under consideration signed by Pauline Batarseh, Unit Chief of DTSC's Northern California Permitting Branch, found 160 deficiencies.

g. As of this writing, DTSC is carrying out an investigation of the July 2, 1997 curium-contamination accident (see issue #4 above) in view of LLNL's having ignored safety regulations recently implemented with DTSC's guidance.

The above samples of ongoing compliance problems at LLNL raise reasonable questions as to LLNL's good faith in complying with regulations and statutes, as well as with safety procedures recently implemented with DTSC's assistance. Further, if LLNL has not been complying with its Part A permit, or its "Interim Status" authorization, can it now be trusted to comply with a Part B permit even if that permit has mitigation measures? Again, we ask that DTSC carry out an EIR before making its decision whether to issue a Part B WTSF permit.
7. For years, LLNL's groundwater has been contaminated. Although steps have been taken to monitor, control and remedy it, this environmental threat still persists. Some examples include: 1) earlier this year, LLNL found its storm drains embedded with large amounts of mercury -- an extremely toxic material. The drains may have contributed mercury-laden runoff to the already-contaminated groundwater, as well as to surface water and to soil; 2) LLNL has acknowledged that there's a possibility that they will run into contaminated groundwater while excavating the NIF site (they've applied for a dewatering permit to pump the area dry, if necessary); and 3) at LLNL's Site 300 weapons testing station (located midway between Livermore and Tracy), during 1982-83 (and possibly again in 1996), groundwater rose, saturating waste buried in disposal pits, and then receded, thus contaminating groundwater at deeper levels.

8. LLNL has a history of sewer system problems. LLNL's current "Interim Status" liquid waste treatment process discharges treated wastewater (WW) directly into the Livermore municipal sewer, and the WTSF permit as written would allow this practice to continue. Theoretically, treated WW is safe for discharge into the sewer, but, in view of 1) LLNL's repeated violations of its sewer discharge permit (see above), 2) past sewer leaks into the adjacent soil and groundwater, 3) the highly contaminated groundwater at LLNL (see above), and 4) the close proximity of the surrounding community, it is reasonable to question the safety of this practice.

9. LLNL has a history of being out of compliance with safe storage requirements (see issue #6 above for additional discussion). Examples of this include: 1) "Old" waste -- LLNL has had violations in how long it stores hazardous waste, e.g., in 1989-90, a DTSC inspector inspected 21 of LLNL's 100 hazardous waste areas and found that 11 had waste stored for more than 1 year (1 year is the maximum storage period allowed under California's Health & Safety Codes before such waste must be treated and/or disposed). 2) Undocumented satellite accumulation areas -- LLNL has never provided DTSC with lists of its satellite accumulation areas (where waste is kept "temporarily"), making inspection difficult to carry out. In the past, Notices of Deficiency have been issued to LLNL by DTSC for waste stored beyond the 90-day limit. 3) Problems with mixed waste -- DTSC has had difficulty in determining just how LLNL treats its mixed waste (i.e., hazardous waste combined with radioactive waste) in order to evaluate, among other things, whether a) any incompatible wastes are combined, and b) cross-contamination occurs between these two types of waste. One unanswered question is: Does LLNL ever label mixed waste as "radioactive?" In the past, Nevada Test Site, which accepts only radioactive waste, has returned waste shipments to LLNL because mixed wastes were included in the shipments, but were not labeled as such.

10. Problems with LLNL's Application (see issue #6 f above for additional discussion). DTSC has accepted LLNL's underlying 11-volume WTSF permit application as the permit's basic "game plan." However, LLNL's application
has inadequacies. One example is: Wastewater (WW) analysis and discharge -- As mentioned above, all of LLNL’s WW is first combined and then discharged from a single point within LLNL. It then flows directly to the Livermore Water Reclamation Plant (LWRP). Per an agreement between LLNL and LWRP, a DTSC-certified lab is not required to verify WW analyses prior to discharge into the sewer. The given rationale is that verification by LLNL facilities shortens the turn-around time for sample collection and analysis. However, this contrasts with other LLNL waste analyses, which are required to be done by DTSC-certified labs. In view of LLNL’s history of accidents and discharge violations (see above), and to ensure public health & safety and the environment, it is reasonable that DTSC, as a condition of either LLNL’s “Interim Status” authorization, OR a WSTF permit, should require some sort of oversight by DTSC-certified labs of such verification prior to WW discharge into the sewer (assuming that a completed CEQA EIR has examined all issues and alternatives and points toward an “all-clear” for a permit to be issued – see discussion above).

11. Problems with DTSC’s Initial Study (IS) and Draft Negative Declaration (Neg Dec). Pursuant to CEQA, before issuing a WSTF permit, DTSC must complete an IS based on LLNL’s application and then draft either 1) a Neg Dec (a statement that there will be no significant impacts to the environment), or 2) a Mitigated Neg Dec (a statement that there will be impacts which will be remedied by conditioning the permit on LLNL’s carrying out mitigation measures), or 3) require an Environmental Impact Report (EIR) be done if DTSC has found the facility could have a significant effect on the environment. In this case, although we recommend an EIR be done (since it is patently obvious to us that, in view of the problems already discussed, LLNL’s proposed facility has a great likelihood of causing significant environmental impacts), DTSC has chosen to draft a Neg Dec based on its completed IS. Both the IS and the Neg Dec have inadequacies, including:

a. Offsite transportation of waste. The IS fails to describe the routes and destinations for transporting hazardous waste from LLNL to dumpsites. Only LLNL’s peripheral streets and on-site roads are described. Where does the waste go and how does it get there? These are major questions because of waste transport’s potentially adverse impacts on public health and safety, as well as on the environment.

b. The IS fails to address waste streams. The IS should describe where waste streams are generated, name hazardous substances involved, as well as their amounts, and indicate the movements of waste streams within LLNL. The IS fails to do this.

c. Seismic Issues. The IS states that all buildings at LLNL either meet or exceed the 1994 Uniform Building Code seismic requirements for concrete and steel
structures, implying that the buildings could withstand seismic activity. Yet, LLNL’s permit application has a letter to LLNL from Geomatrix Consultants that concludes “...evidence ... could provide documentation for compliance with the seismic location standard. However, it is recognized that after reviewing the same evidence other reasonable people may disagree with these conclusions.” (emphasis added) That is, such compliance is disputable and uncertain by reasonable seismic consulting industry standards. Another report, from Public Geotechnical Engineering, conditions satisfactory seismic standards compliance on 1) high foundation capacities, 2) replacement of silty-clay soils with well-compacted soil fill, and 3) reviews every three years. This may indicate a need for constant scrutiny of a chronic problem. Additionally, there is no real analysis of earthquake risk based on 1) the crack opened in LLNL’s southeast corner (near where waste is stored), that may have been caused by a 1980 quake, or on 2) other past seismic events (the area is very active seismically).

d. Small Scale Treatment Laboratory. According to the IS and LLNL’s application, there would be a “small scale” treatment lab within the larger WTSF complex, purportedly to process small amounts of waste. There appear to be at least four major problems with this: 1) the "small scale" lab’s waste processing limits would be up to 250 kg per day, a large amount of waste, not "small scale;" 2) LLNL would be able to process these wastes without much more than slim bureaucratic oversight by DTSC (LLNL would be allowed to work up individual plans for this lab); 3) DTSC could waive the 250 kg per day limit case-by-case, depending upon the specific plan submitted by LLNL; and 4) there are no provisions for public notice and participation. Altogether, this section seems to be a "loophole" potentially allowing LLNL to conduct hazardous waste processing without adequate regulation and public participation.

e. Future On-Site Land Use. The IS does not adequately deal with possible future increases in hazardous waste production amounts and whether the facility would be able to handle them. This issue also relates to cumulative impacts (see below).

f. Cumulative Impacts. The IS inadequately addresses the question of how the hazardous waste processes would interface with LLNL’s other activities, i.e., how all LLNL’s activities would impact the environment, as well as human health and safety.

g. The IS concludes that the proposed project COULD NOT have a significant impact on the environment. This is a challengeable conclusion, since, as discussed previously, LLNL is a highly-contaminated Superfund site with an ongoing history of accidents, pollution and unauthorized dumping of hazardous waste (done under DTSC’s “Interim Status” authorization), raising reasonable questions about the proposed project’s future impacts to the environment.
h. **The Draft Negative Declaration is Ambiguous.** Despite its title of "Draft Negative Declaration," DTSC’s Neg Dec contains language that makes it unclear whether DTSC is drafting a straightforward Neg Dec (i.e., without required mitigative measures) or a Mitigated Neg Dec (i.e., with required mitigative measures). Further, only small projects normally receive a Neg Dec without mitigated measures, while LLNL is a major nuclear facility producing a wide range of hazardous and mixed (as well as radioactive wastes). Under the circumstances, it’s reasonable that the DTSC, even if it believes there are no risks to health, safety & environment (which is a challengeable conclusion), explore some sort of mitigation measures such as waste reduction or pollution prevention.

In conclusion, Tri-Valley CAREs requests that DTSC not issue LLNL a WTSF permit at this time. For all the reasons discussed above, we ask that DTSC require a thorough environmental investigation (i.e., an EIR, as detailed above) of both LLNL’s Main Site and Site 300 to determine whether, in light of LLNL’s “Superfund” site status and in view of LLNL’s lengthy history of hazardous waste accidents, spills, releases and violations, a WTSF permit should be issued. Tri-Valley CAREs would be happy to provide “scoping” and other comments regarding the EIR. First, however, DTSC must determine that one will be done.

We look forward to your response to this public comment.

Sincerely,

Marylia Kelley
Executive Director
Tri-Valley CAREs

Sally Light
Nuclear Program Analyst
Tri-Valley CAREs

**Additional Signatories:**
1. Ban Waste -- Phil Klasky, Director
2. Bay Area Action -- Susan Stansbury, Director
3. Buddhist Peace Fellowship -- Alan Senauke, Director
4. Center for Economic Conversion -- Michael Closson, Executive Director
5. Citizens Opposing a Polluted Environment (COPE) -- Jami Caseber, Director
6. Committee to Minimize Toxic Waste -- Gene Bernardi & Pamela Sihvola, Co-Chairs
7. Earth Island Institute -- John Knox, Executive Director
8. Mount Diablo Peace Center -- Dennis Thomas, Administrator
9. Nuclear Democracy Network -- Mary Beth Branagan, Co-Director
10. Planning and Conservation League -- Gary Patton, General Counsel
11. Physicians for Social Responsibility, Greater San Francisco Bay Area Chapter -- Dr. Robert Gould, President
12. San Jose Peace Center -- Joni Thissen, Coordinator
13. San Mateo County Peace Action -- Max Bollock, President
14. Sierra Club California -- Bonnie Holmes-Gen, Senior Lobbyist
15. St. Joseph the Worker -- Father Bill O'Donnell, Social Justice Committee
16. Sonoma County Center for Peace and Justice -- Elisabeth Anderson, Executive Director
17. Toxics Assessment Group -- Thomas C. Sparks, CEO
18. Western States Legal Foundation -- Mike Veiluva, Foundation Counsel

cc: Secretary Federico Pena, DOE HEADQUARTERS, Washington D.C.
    Assistant Secretary AI Alm, DOE HEADQUARTERS, Washington D.C.
    Jim Turner, DOE, Oakland, California
    Jim Davis, DOE, Oakland, California
    Bruce Tarter, Lawrence Livermore National Laboratory
    Mike Gill, U.S. Environmental Protection Agency, San Francisco, California
    Kathy Setian, U.S. Environmental Protection Agency, San Francisco, California
    U.S. Senator Dianne Feinstein
    U.S. Senator Barbara Boxer
    U.S. Representative Ellen Tauscher
    U.S. Representative Pete Stark
    U.S. Representative George Miller
    U.S. Representative Nancy Pelosi
    U.S. Representative Lynn Woolsey
    U.S. Representative Richard Pombo
Sources - Tri-Valley CAREs requests that the following sources, along with the organization's comments, be made part of the Administrative Record:

Incident Reports/Occurrence Reports/Other Reports:

Incident Analysis of Criticality Safety Control Infractions in Building 332, LA 0485, August 15, 1997, Lawrence Livermore National Laboratory


"Lab's staff was found lacking in radiation safety training," The Valley Times, February 11, 1997.

"Uranium called risk to lab staff, not public," The Valley Times, January 16, 1997.

Violations:

"Violations curtail lab plutonium operations," The Valley Times, October 30, 1997.


"Livermore cites lab for sewer discharge," The Valley Times, May 10, 1997.


Accidents:


"Lab accident a result of poor safety," The Valley Times, September 13, 1997.

"Lab technician exposed to radiation, report says," Tri-Valley Herald, September 13, 1997.


"Lab chlorine leak forced evacuation," *The Valley Times*, April 9, 1997.


"3 lab workers contaminated with uranium traces," *The Valley Times*, February 11, 1997.


"Lab worker contaminates finger," *The Valley Times*, February 9, 1997.


**National Ignition Facility (NIF):**


"Lab discovers 112 capacitors with PCBs at superlaser site," *The Valley Times*, September 11, 1997.

Monthly report dated June 20, 1997, from James Littlejohn (Project Leader, Environmental Restoration Division, DOE/OAK) and Albert L. Lamarre (Livermore Site Project Leader, Environmental Restoration Division, UC/LLNL) to Robert Feather (DTSC), Michael Gill (U.S. EPA - San Francisco Office) and Michael Rochette (Regional Water Quality Control Board - San Francisco Bay Region) re: LLNL Livermore Site may 14, 1997 Remedial Project Managers’ Telephone Conference Summary.

“NIF foes move to stop project, citing toxic find,” The Valley Times, September 23, 1997.

“Laboratory staff faces toxic waste charges,” The Valley Times, September 23, 1997.


Public Meetings:
““Volatile” reaction at lab meeting,” Tri-Valley Herald, July 20, 1997.

“Lab’s Site 300 cleanup on tap,” Tri-Valley Herald, June 22, 1997.

“Citizen’s Watch” Newsletters:
Each 1997 edition of Tri-Valley CAREs’ monthly newsletter (except for February, 1997), Citizen’s Watch, contains coverage of issues that are relevant to Tri-Valley CAREs’ comment on LLNL’s application for the WTSF permit. Therefore, to conserve space, we refer to them collectively here.

Federal Statutes
Resource Conservation and Recovery Act (RCRA).

California Statutes and Regulations:
California Environmental Quality Act (CEQA).

Title 22 California California Code of Regulations sections 6626.23(a)(1-3), (b) and (e); 66265.71 (a)(1-6); and 66262.34(f)(1-3). (CCR)
3.3 Document 2: U.S. Enrichment Corporation (USEC)
February 25, 1999

Ms. Lois Marik  
U.S. Department of Energy  
Lawrence Livermore National Laboratory  
7000 east Avenue  
Livermore, California 94550

RE: Comments on Draft Supplement Analysis for Continued Operation of Lawrence Livermore National Laboratory and Sandia National Laboratory, Livermore DOE/EIS-0157-SA-01

Dear Ms. Marik:

The United States Enrichment Corporation (USEC) has reviewed the Draft Supplement Analysis for the Environmental Impact Statement (EIS) for the Lawrence Livermore National Laboratory (LLNL). We would like to supply comments addressing the adequacy of the document in general, and a specific comment we believe will add clarity.

The analysis appears to be both comprehensive and thorough. All areas of potential impact were reviewed and adequately addressed. The Supplement Analysis meets the intent of the National Environmental Policy Act in that, as a planning document, it identifies areas of the environment that need to be protected in future activities.

One change we suggest to add clarity to the document is to revise an entry in Table 1.1. Specifically, the wording under "Discussion" to "Follow-ons to U-AVLIS" would indicate that only USEC performed NEPA review for this activity. The environmental review for this activity was done as a joint effort. Under an interagency agreement between USEC and DOE, USEC did have the lead in preparing the Environmental Assessment document. However, the analysis was performed jointly by USEC and the LLNL staff, with close involvement by DOE. The Finding of No Significant Impact was issued jointly by DOE and USEC. We suggest you change the entry under "Discussion" to read "Joint NEPA review by U.S. Enrichment Corporation (USEC) and DOE".

Sincerely,

T. Michael Taimi  
Manager, Environmental Assurance and Policy

6903 Rockledge Drive, Bethesda, MD 20817-1818  
Telephone 301-564-3200 Fax 301-564-3201 http://www.usec.com  
Offices in Livermore, CA Paducah, KY Portsmouth, OH Washington, DC
3.4 Document 3: Briefing Transcript, Livermore, February 11, 1999, 2:00 p.m.
TRANSCRIPT OF COMMENT AND QUESTION PORTION
OF PUBLIC BRIEFING

Regarding:

DRAFT SUPPLEMENT ANALYSIS
CONTINUED OPERATION OF
LAWRENCE LIVERMORE NATIONAL LABORATORY AND
SANDIA NATIONAL LABORATORIES, LIVERMORE

Proceedings before: BARRY LAWSON, Facilitator

Thursday, February 11, 1999
2:00 p.m. session

Taken by LETICIA A. RALLS,
a Certified Shorthand Reporter, in and for the State of California
CSR No. 10070

APPEARANCES (continued)
KENNETH ZAHN, Group Leader, Environmental Evaluations Group of LAWRENCE LIVERMORE NATIONAL LABORATORY, appeared as a panel member.
KATIE MYERS and CAROL KIELUSIAK of LAWRENCE LIVERMORE NATIONAL LABORATORY, appeared as notetakers.
LIBBY STULL of ARGONNE NATIONAL LABORATORY, appeared as a notetaker.

PROCEEDINGS
BE IT REMEMBERED, on Thursday, the 11th day of February 1999, commencing at the hour of 2:09 p.m. of said day, at the LAWRENCE LIVERMORE NATIONAL LABORATORY, EAST GATE VISITOR'S CENTER, Trailer No. 6253, Greenville Road, Livermore, California, before me, LETICIA A. RALLS, a Certified Shorthand Reporter in the State of California, the said briefing proceedings were had.

APPEARANCES
BARRY LAWSON, of BARRY LAWSON ASSOCIATES, Mountain Road, P.O. box 26, Peacham, Vermont 05862, appeared as the Facilitator.
LOIS MIK, of the DEPARTMENT OF ENERGY, Deputy Director for Livermore Operations Division, appeared as the presenter and as a panel member.
CHUCK TAYLOR, of PAI CORPORATION, appeared as a panel member.
MICHAEL LAZARO, of ARGONNE NATIONAL LABORATORY, Chicago, Illinois, appeared as a panel member.

WHEREUPON, subsequent to Ms. Mik's presentation, the following comment and question period began at 2:27 p.m.

PROCEEDINGS
THE FACILITATOR: Thank you very much.
Okay. Let's start our comment period. I invite you to go one at a time for an initial period of a maximum of five minutes or thereabouts, whether asking questions or making comments regarding the Supplement Analysis.
I would ask you to introduce yourself and your affiliation, if you like, and indicate before you start whether you're offering a question or a comment so that the people who are taking notes will be primed for either one.
Now, I don't know how many people plan to make comments, and I don't want to be -- and I don't feel like being in the mood to be a harsh timekeeper here, but I do want to make sure that with the number of people in the room, most of whom I don't know, that we go at least through one round of five minutes, and then there will be plenty of time for more questions, if you have any.
If you are coming near within that five minutes, I'll ask you to complete your first round as gracefully and graciously as possible. Okay.
As I said before, oral comments and written comments are given the same amount of credence. Okay. Is there anybody here who would like to speak after all that?

THE COMMENTOR: I'll go.

THE FACILITATOR: Please.

THE COMMENTOR: Could I talk here?

THE FACILITATOR: If you could at least stand, if it would make it easier. If you'd like to come up here?

THE COMMENTOR: Yeah. It's easier.

THE FACILITATOR: Sure. Come on up.

THE COMMENTOR: My name is Sally Light. I'm from Tri-Valley CARES, Communities Against Radioactive Environment. We did prepare a written comment, and I'm just going to briefly use that as a consulting kind of note that I can look at as I'm talking.

And I'm going to only do part of this, and then I'll share it with my colleague, our Executive Director, Marilyn Helley, who will finish it out. Just to briefly mention that most people here probably know who we are, but we've been involved in radioactive and toxic contaminants for years, and we've been very perfunctory kind of presentation that for one thing, since 1992, the Lab has remained a Superfund Site; both Main Sites and Site 300 still are on the national priorities list. That, in itself, says to me that there are still problems that need to be -- big problems that need to be resolved here and that there are I believe extremely deadly material that it does merit that.

So the Lab here continues to have chronic pollution problems. It's had frequent accidents involving radioactive and toxic contaminants.

These problems are also chronic with non-compliance of safety regulations. The Lab has received numerous notices of deficiency and notices of violations from the State Department of Toxic Substances Control which is indicative of problems ongoing since 1992.

It's continued to have groundwater contamination problems both here and at Site 300. There are also sewer system problems in terms of releases into the municipal sewer system from Main Site. And the Lab continues to have problems with non-compliance with safe storage requirements.

All of this we have documented, and I have attached to our report our comment, a previous letter that we worked up for -- as a response to -- as a comment, a public comment to the Part B Permit application that the USEC right now is considering for the Lab.

And so a lot of this draw on material that I developed in 1997. And this is all documented, and I have it here. So I'm just summarizing from that.

I really don't want to take a lot of time to go into the details, unless people ask questions, but to go on to the other thing that I wanted to mention is that in terms of the increased administrative limits for plutonium and uranium in the Super Block buildings that were presented here, it's interesting that it seems that in some cases these are very significant increases, and yet the DOE doesn't consider these major enough to require a new EIS.

And under the CFR sections that have to do with when you do need some kind of a new environmental analysis, it says, you know, significant new circumstances or information relevant to environmental concerns. And I do feel that when you're dealing with such deadly materials as uranium and plutonium, that certainly does come into environmental concerns both for the employees here and for the community.
3-12 cont.

I think that these major changes do warrant a new EIS/EIR just on that basis alone as far as that section of it.

And also, there are other issues here. I mean, we are not -- we wonder why you really -- I mean, I understand that the report is saying that in terms of the uranium that they are trying to support the RBH, the Research Development and Demonstration, of plutonium immobilization and technologies for uranium conversion, reuse, waste management and disposal, but that just doesn’t seem to fit it because, for one thing, we know from the DOE’s "Green Book" that the DOE intends to carry out new nuclear weapons research and development, and the Lab here is a primary nuclear weapons laboratory.

So we are seriously questioning the given justifications in this report for having significant increases of these weapons-related materials. And we are honestly reminding you that the Cold War is supposedly over.

And then also we would like to know specifically NEPA programmatic element analysis.

3-13

3-14 cont.

which is required for such a large change in such a significant increase in terms of the uranium amounts, is it going to be specifically for the U-235? I mean, can we have some information? It is just very -- I just don’t know from looking at this report what they’re really talking about.

Those are some of my major concerns. And, as I say, we have copies of our comments, and I have attached the comments before to the DREC on which a lot of this is based. And so we are very interested in passing out this information, and we do have a few copies with us today.

Thanks.

THE FACILITATOR: Very well done. Thank you.

THE COMMENTOR: And I’m too chicken to step over this chair.

THE FACILITATOR: Yes, please.

THE COMMENTOR: Hi. I’m Margie Kelley, and I’m Executive Director at Tri-Valley CARES, and I also live on East Avenue right between Vasco and Charlotte.

So I’m speaking today, as well, as a very close neighbor of the Livermore Laboratory, and as someone who has raised a child and lived in this community since 1976.

And again, I want to reiterate that Tri-Valley CARES has looked at the Supplement Analysis and looked at the daily sort of operations of the Lab and the promised operations of the Lab and believe beyond a shadow of a doubt that a new environmental impact statement is required in this instance.

I’ll just talk again about a couple of things, since I have five minutes, and invite people to ask us for copies of our comment if they would like the details, and also out on the table is a sign-up sheet if folks want to get our newsletter and any other information that we have.

We’ve been doing some research on the Plutonium Facility, that’s the Building 312 discussed, and the history of problems with the HEPA filters in that building.

And again, there has been burning of plutonium to oxidize the chips, and that’s an extremely dirty enterprise. And we need more information on that and the projected plans for the future.

In addition, just to digress a little bit, uranium chips are also burned. And that’s equally dirty, and we equally need information on how much of that is going on at present and how much of that is projected into the future.

Also, Sally, you didn’t have time to really cover the documents we got back from the NEPA Information Act request, right?

THE COMMENTOR: No.

THE FACILITATOR: Okay. We have a lawsuit in under the Freedom of Information Act for documents that the Department of Energy and the Lab have not given us in a timely manner. And, after filing the lawsuit, they have begun showing up.

So thank you for what’s come, and we expect another batch soon.

The documents that we have so far indicate a history of chronic safety problems. There’s one type of HEPA filter that’s discussed that’s only partially qualified for nuclear applications.

The filters we know theoretically but now we know from internal documents that this is a problem. They are very fragile. They fall when wet, hot, cold, or just plain have too much pressure applied. And all of those things have to be accounted for.
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<td>also, there are things that were not really part of the 1992 EIS. Information has come to light since then, and they're also not problems that were solved back then.</td>
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<td>And also, are we assuming -- what kind of assumptions are being made about ship opening and other things that may or may not happen? And what kind of contingencies exist? All of that needs to be part of an EIS/EIS.</td>
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<td>Also, the plutonium was discovered in Big Trees Park, right across the street and down the road from me where my son grew up playing. Again, discovered since 1992, the Lab has gone out three -- well, there have been three samples: one by EPA, two by the Lab.</td>
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<td>Every time anybody's gone out there to take a sample, they have found plutonium above the level that can be attributed to global fallout, up to 1,000 times, in fact. So this may -- there are three hypotheses. This is maybe airborne. This may be related to some of the filter issues we're talking about on Building 332.</td>
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<td>All of those things deserve a full EIS. And all of those things deserve to really, really be looked at seriously and some proposals put forward as to how to better safeguard the workers and the community.</td>
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<td>Also, there have been plutonium criticality violations there regularly. As probably most of</td>
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you'll remember, I'm one of the people who told you that even in 1992 your EIS was way behind the curve of coming events.

And the fact that the document was almost obsolete by the time the record and decision was signed in 1993 really doesn't sort of help things now that we're another six years down the road. It is incredibly obsolete.

You may recall there were just a couple of paragraphs about something called the NOVA upgrade.

There wasn't a National Ignition Facility that was being proposed. The SDM/EIS looked at siting and issues like that. It doesn't take the place of a site-wide. It needs to be considered. It will need an environmental footprint here at Livermore Lab and in our community.

It will mean more tritium in our air. It will mean more waste. And what does that mean with -- given that we already have a burden of tritium -- that's radioactive hydrogen -- in our air from other Laboratory operations?

That's the kind of thing that only a site-wide EIS really looks at. And the cumulative effects of that have to be baked into what needs to be considered. It will.

-Here's what it said. Quote,

"Nevertheless, DOE is considering what activities necessary to support DOE's nuclear weapons mission should be carried out at Lawrence Livermore and Sandia National Laboratories, Livermore."

The Secretary of Energy has proposed to re-configure the nuclear weapons complex to be smaller, less diverse, and more economical to operate. As part of this proposal, DOE is examining whether certain weapons research, development, and testing activities now taking place at the national laboratories should be consolidated."

"DOE is preparing a programmatic EIS on this re-configuration proposal. The re-configuration PEIS will address the long-term mission of Lawrence Livermore and Sandia National Labs in Livermore."

"This EIS/EIR addresses the..."
Supplement Analysis — CRD

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| 1 | near-term continued operation of Lawrence Livermore and Sandia National Laboratories, Livermore. The focus of possible new long-term missions cannot be addressed until after completion of the re-configuration PEIS; therefore, identification and description of new missions for Lawrence Livermore and Sandia and analysis of associated environmental effects would be highly speculative and beyond the scope of this EIS/EIR."
| 2 | "However, this document is expected to facilitate the environmental assessment of future changes in missions or activities. Such changes would be reviewed against this EIS/EIR and further NEPA and/or CEQA review effort efforts undertaken if appropriate. This could include the preparation of a supplemental EIS/EIR."
| 3 | End of quote.
| 4 | So here we have the Livermore Lab 1992 EIS |

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<td>serious effects on the environmental impacts.</td>
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<td>Now, I also want to remind you that dismantlement alternatives remain highly relevant.</td>
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<td>In 1996, four years after the 1992 EIS/EIR, the International Court of Justice, which is the highest court in the world on questions of international law, the judicial branch of the United Nations, unanimously found that there exists an obligation on the part of all states to conclude negotiations on the elimination of nuclear weapons.</td>
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<td>That is the authoritative interpretation of Article VI of the Nuclear Nonproliferation Treaty which was extended indefinitely in 1995 due largely to very strenuous international efforts by the United States. Article VI requires the elimination of nuclear weapons.</td>
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<td>The International Court of Justice closed a loophole in Article VI by saying there exists an obligation on the part of all states to conclude negotiations, to finish the process, of nuclear disarmament. That alternative is not reflected in the 1992 EIS or in the Supplement Analysis.</td>
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<td>Now, a couple of other specific points and questions that I’d like to raise. Plutonium in the park was mentioned. Western States Legal Foundation, like Tri-Valley CURES, participates in the ATSDR/CIDCS site team, and so we also have a great deal of interest in that issue and some familiarity with it.</td>
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<td>The new information that has emerged about the plutonium findings off site need more analysis.</td>
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<td>And this analysis needs to be combined with other problems and changes in plutonium operations like the ones Maryia mentioned — criticality violations, the ADAPT pit production program and so on.</td>
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<td>On another point, in its response to the Western States' comments in the 1992 EIS, DOE also pushed off substantive discussion of waste management alternatives in the waste management PEIS which also is not complete. This information needs to be integrated into a new site-wide EIS to inform the public, state regulators, local decision-makers, emergency services and so on.</td>
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<td>Again, the whole NEPA approach in our view</td>
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<td>telling us that it has to be re-evaluated after the re-configuration PEIS has been completed. Well, now re-configurations have come and gone and have been replaced by the Stockpile Stewardship and Management program, complete with a PEIS with an entirely new set of alternatives.</td>
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<td>We believe that the Livermore site-wide EIS should be redone to reflect these changes. And in terms of thinking about those changes, I was reminded sitting here that the 1992 EIS was completed before a nuclear testing moratorium was in place, before the comprehensive test ban treaty was signed, before the President had committed the United States to the Stockpile Stewardship program.</td>
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<td>And there have been very major changes in laboratory operations since then. These include the National Ignition Facility, as well as possible future W7F applications.</td>
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<td>W7F was not in the 1992 EIS, and future possible applications need to be covered. Weapons effects testing, use of fissile materials if these applications are now foreseeable.</td>
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<td>At the very least, we should know the existing state of planning and when decision points will be for these applications which could have</td>
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1 has been like a shell game, just pushing off
2 decisions, pushing off alternatives, pushing off
3 analyses into different kinds of speculative PEISes
4 and then never coming back to re-integrate them.
5
6 Along these lines, as a result of the recent
7 settlement in our lawsuit against DOE challenging
8 the adequacy of the stockpile stewardship PEIS and
9 the failure of DOE to prepare an environmental
10 restoration PEIS, we have established a database
11 which is going to include new information available
12 for the first time at least to the public about
13 waste -- waste streams including waste streams from
14 defense programs.
15
16 So this new information will be coming out,
17 will be available, and this is the time to inform
18 the public about the cause and effect, the
19 relationship between the waste streams and the
20 programs at this Laboratory, possibly for the first
21 time.
22
23 A couple of other specific points and
24 questions. In the table 1-7, the line item
25 regarding the Accelerated Strategic Computing
26 Initiative, we know from looking at the ASCI
27 program at Los Alamos that super computing requires
28 large amounts of water for cooling.
29

3-36

1 So we're wondering what the requirements are
2 for Lawrence Livermore in the near future for the
3 ASCI program, and this becomes immediately
4 important because, for example, we just read in the
5 paper yesterday that the Del Valle Reservoir will
6 be drawing more water for the development in the
7 near future. This is Zone 7, the water district.
8
9 And given the tremendous demand for water in
10 the Valley, you know, have -- there needs to be a
11 thorough evaluation for the water demand for ASCI
12 including its cumulative impact. And we don't see
13 that in here.
14
15 Also, we wonder about the additional
16 electrical power draw. Will there be new utility
17 lines or power upgrades for ASCI? What will the
18 cumulative impacts be?
19
20 Regarding AVLIS -- and again, we're involved
21 in a lawsuit trying to force environmental review
22 of AVLIS, so we have a long-standing interest in
23 that issue. And I have to say we have been able to
24 get very little information about the status of
25 this program.
26
27 This says that USEC is doing NEPA review of
28 AVLIS. This is news to us. Does USEC do NEPA
29 review? We'd like an answer to that question. We
30

3-37

1 don't think so.
2
3 In any event, for site-wide total impacts,
4 AVLIS must be analyzed. And just because something
5 will have project-specific review doesn't mean it
6 can be omitted from NEPA analysis site-wide which
7 would defeat the entire purpose of having site-wide
8 EISes. And at the very least a cumulative impact
9 has to be evaluated.
10
11 How am I doing on time?
12 THE FACILITATOR: Over a little bit.
13 THE COMMENTOR: Okay. So here's another
14 question: Is the AVLIS pilot project up and
15 running, and more generally, what is the status of
16 the AVLIS program which has essentially gone
17 underground since USEC took over?
18 A couple -- another specific point, in table
19 1-8 regarding MOX fuels. It seems to us that the
20 KED and uranium numbers represent major increases.
21
22 And we think that if this was a free-standing
23
THE FACILITATOR: Is there anyone in a position to answer any of those questions at the meeting?

MS. MARIE: I think the best thing to do -- because there is such an extensive list of comments, I would have to refer the formal comments. If you'd like us to answer some of those questions right now, though, we'd be more than willing to do that.

THE COMMENTOR: Yeah. Any of them.

THE FACILITATOR: There's a question about the biohazard facilities.

MS. MARIE: The biohazard facility. In that circumstance, there are no plans to have a biohazard three facility at this site at this time. Should such a facility be determined to be necessary here, we would have to follow the NEPA process.

And, as you know, that's a DOE process. And until DOE decides that that facility is going to be placed at the Livermore site, it will not be placed at the Livermore site. And there are no plans to do that at this time.

THE FACILITATOR: You had two questions at the end.

THE COMMENTOR: I just doubt that you know enough to do a civilized calculation in a specific activity.

But let me take up what you put down. It was handed out out here. Some 6,000 pounds of depleted uranium which has less than 1 percent radioactivity material.

Now, do you agree with that?

MS. MARIE: No. We were -- I think that she's referring to uranium 235 content of that material.

THE COMMENTOR: Depleted uranium is all radioactive.

MS. MARIE: Yeah, it is. But --

THE COMMENTOR: Okay. Now that thought said here.

Now next, in case you misunderstood, about -- it was a statement requiring a statement of fact. Now, in case you misunderstood, it's still not a factor of 100 difference. If you look up the half lives, I doubt that they're a factor of 100 difference. And that's the only factor that occurs in a specific activity calculation. And the specific activity, I doubt, is 100 times different between those two isotopes.

MS. MARIE: I'm sorry. I'm missing -- I'm missing the question.

THE COMMENTOR: I'm sure he didn't; some of those other people didn't. You talk to them.

MS. MARIE: Uh-huh.

THE COMMENTOR: So that's a misinformation or misleading thing.

Now, that's somewhat better than the fact that they've been -- the newspaper people have been told that depleted uranium is non-radioactive which has occurred on two separate occasions. I hope the newspaper people have learnt to get the statements and use them as a quotation when they're told these dumb things.

THE FACILITATOR: Would you give us your name and also the citation for that article?

THE COMMENTOR: You've got it out there. The FACILITATOR: I know. I want to get it for the stenographer.

THE COMMENTOR: Oh, okay. It's not her fault.

THE FACILITATOR: I understand. I just want to make sure for the record it's down.
THE COMMENTOR: All right.

If they give you these things and you doubt it -- you should be careful about things that FR people tell you. I will show you the calculations.

Let me go to one more thing.

THE FACILITATOR: Okay. Forget it.

THE COMMENTOR: The filters in the plutonium building were over-aged when I retired 15 years ago. Now, I know that they have probably all lost at least half of their potential strength, and their hydrophobic ability is -- starts severely downhill after five years.

Now, all these things the internal filter people know. And we've got some of the best filter people in the world here and in Los Alamos. You should talk to them; see what should be done with that dam plutonium building which is a risk to the public. And I'm a part of the public because I live right over here.

These filters are a serious threat to this community. And you pumped 15 -- 15 to 15 inches of water pressure through those things. I'll bet you they won't stand the cyclone test that they're supposed to take right now.

If you don't know what that means, you talk to the filter people here. You've got some good filter people here who are knowledgeable; some of the best in the world. And if they won't talk to you, talk to the people in Los Alamos so they won't get fired here or put in a dark room with no windows.

I'm not kidding; I'm serious.

MS. FALK: I understand.

THE COMMENTOR: Because this is to your discredit to allow these things to continue.

MR. TAYLOR: We'll definitely include a response to the filter issue in our comment response document.

THE COMMENTOR: I don't know whether they're right or not. I talk to people about it, and nothing ever happens.

MR. TAYLOR: I think we have enough with Maryla. It will definitely be included.

MS. FALK: We'll be responding.

THE COMMENTOR: Okay. Good.

THE FACILITATOR: Is there any other questions before we go on?

PREVIOUS COMMENTOR: Give them your name now. For the stenographer, they need to know your name.

THE COMMENTOR: I'm sorry?

PREVIOUS COMMENTOR: There's a stenographer who wants your name.

THE COMMENTOR: Oh. I'm Marion Falk.

Sorry. M.H. Falk is the best way to put it down.

THE FACILITATOR: Take a time out.

(Pause for the reporter.)

THE COMMENTOR: I have a question that I didn't get to. As I'm looking at the administrative limit here of projected change to 500 kilograms of highly-enriched uranium and I'm remembering -- and I'm doing this by memory, but I'm pretty sure that when Secretary O'Leary did the declassification initiative, that allowed for the public to know how much plutonium and uranium --

highly-enriched uranium were here at that time, which was only a few years ago and it's still the most recent numbers we have. It was 880 pounds of plutonium and 440 pounds of highly-enriched uranium.

So if I'm doing my math right, you're talking about going from 440 pounds of highly-enriched uranium to 1,100 pounds of highly-enriched uranium.

Now, under the National Environmental Policy Act, don't you think that's a significant change?
MR. MARX: I'm talking specifically, I think, about all the other things we've talked about, a significant analysis which is beyond what's contained in that.

MR. TAYLOR: You know, I don't think we know the answer -- that's very possible. We could have -- at one specific time in history, we could have had 440 pounds --

MR. MARX: Or enriched.

MR. TAYLOR: -- at that specific time, but it has varied.

THE COMMENTATOR: Well, you have the date exactly.

MR. TAYLOR: I don't know that we can give that answer.

THE COMMENTATOR: I have a question on environmental justice. I know that since 1992, the presidential directive on environmental justice came forward with this issue. And my question has to do with Site 300 and the nearby town of Tracy because I know that since we have tag grounds and we have tag meetings of clean up of those same types, we've kept up to speed on pretty much as I guess we can be, on some of the ongoing problems out at Site 300.

I think that requires, particularly in light of all the other changes we've talked about, a significant analysis which is beyond what's contained in that.

MR. TAYLOR: You know, I don't think we know the answer -- that's very possible. We could have -- at one specific time in history, we could have had 440 pounds --

MR. MARX: Or enriched.

MR. TAYLOR: -- at that specific time, but it has varied.

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THE FACILITATOR: You started off saying it was a question; it seemed like a cement.

THE COMMENTATOR: I want an answer whether or not they would intend to -- based on my question now, to do something and do some kind of justice issue, if not in fact, potentially there.

So, I mean, it was not addressed here, and I think that in terms of Site 300 it needs to certainly be addressed. It's a very serious problem.

There probably are other ways that I could describe the environmental justice issues in terms of the safety between 1992 and now. The increased population around the Main Site as well, and that includes some of the lowest housing areas, in terms of income-related people. That is also something that also should be addressed since the 1992 EIS/EIR.

And I do think that both of these things merit a full-out review, not just a supplemental analysis or a supplement to an EIS but an actual new one.

Some of them are new issues -- are old issues that have never been addressed, and some of them should be re-addressed.

THE FACILITATOR: You started off saying it was a question; it seemed like a comment. Do you still want an answer on your --

THE COMMENTATOR: I want an answer whether or not they would intend to -- based on my question now, to do something and do some kind of
of special concern like white -- a pair of nesting white-tailed kites were observed. And, even if they observed, and what -- it says, "Mitigation measures will be implemented" -- what those mitigation measures are? Can you identify them? We've actually had successful nestings on-site. And, Mr., would you like to explain on that? Mr. Zahn: Yes, I would like to address that. The white-tailed kite is not a federally-protected species that is threatened or endangered. It is a protected species. And we have been watching for raptors here at the site, as most wildlife biologists are prone to do. And we -- about four years ago began picking up sightings of the white-tailed kite. And each year we see to be increasing in the number of white-tailed kites who have chosen the Livermore site for their primary nesting site. First year, we had one pair, and they nested in the eucalyptus tree right here at the main intersection which is outside this trailer building. Last -- and that has increased each year, sometimes double nestings.

And last year we had four completely successful nesting pairs and two follow-on nest sites, one right here behind this trailer, right at the edge of the stoplight, if you can imagine that. For some reason they seem to prefer the Livermore site peripheral area's pine trees. And what do we do there, since we are seeing these birds pop up now at the Main Site, as we develop each year -- as soon as we can understand where they're going to nest and they start nesting activity, we actually build separate exclusion areas or restriction zones around those trees with precautions to certain clients that we know will be operating in those areas.

And we coordinate that with Fish and Wildlife Service and let the clients know. And we coordinate that with Fish and Wildlife Service and let the clients know. And we coordinate that with Fish and Wildlife Service and let the clients know. And we coordinate that with Fish and Wildlife Service and let the clients know. And we coordinate that with Fish and Wildlife Service and let the clients know. And we coordinate that with Fish and Wildlife Service and let the clients know. And we coordinate that with Fish and Wildlife Service and let the clients know. And we coordinate that with Fish and Wildlife Service and let the clients know. And we coordinate that with Fish and Wildlife Service and let the clients know. And we coordinate that with Fish and Wildlife Service and let the clients know. And we coordinate that with Fish and Wildlife Service and let the clients know. And we coordinate that with Fish and Wildlife Service and let the clients know. 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continued recovery, we're supporting that here on site.

THE COMMENTOR: I may have forgotten in my little diatribe against the filters that I am in favor of a new environmental review. So this -- new, open, and total review again so that you've got to talk to your filter experts and get it aboveboard.

As a matter of fact, I checked with some classified there are only two filters in series in that building. It's been that way for many years. Only two HEPA filters in series.

That's the lowest number in any part of the Department of Energy complex.

Two filters. That's just enough to get the orientation of the translucent spot fixed up to go through the second one. Now, if you don't know what I'm talking about talk to your filter people.

Now, he's laughing. But I bet he knows.

This is the point. I think it should be brought -- told to the people what the threat is in these filters in that plutonium building, especially if you're going to use the metal material.

Is it going to be metal, or is it going to be metal off site, these new additions?

The follow-on IPD project had -- did go underway, and it began after an EA was prepared.

The EA was, in fact, prepared by USEC. And in that particular case the USEC was a quasi-governmental agency which had its own NEPA guidelines. And I don't know whether there were guidelines or regulations, but they did have their own NEPA process.

DOE and USEC came to an agreement as to which agency would provide documentation of that project, and USEC was given -- given preponderance for NEPA review for that follow-up project.

So there was an EA --

THE COMMENTOR: When was that?

MR. ZAHN: This is a guess on my part.


It is -- but it is a federal EA under NEPA, so it's available. There was a funding issued by USEC. And as far as I know, that project is underway and is covered by that USEC environmental assessment.

THE COMMENTOR: We have a letter just about that same year that says, "We don't need to do that."

PREVIOUS COMMENTOR: You represented to us...
to help do an analysis.

Mr. Zahn: I wouldn't be able to provide you a copy of the USEC EA, but there may be an opportunity either through USE or through one of the programs it can be made available.

The Commentator: One of the reasons that we're appealing to you is because that's not always a timely process, and you have a short comment period.

Mr. Zahn: That's true.

The Commentator: If you could get me the 1995 Safety Analysis Report for Building 332? And how I do have the unclassified version -- the declassified version of the older one, but I do not have the 1995 one. And also the 1998 Updated Safety Analysis Report for Building 331?

And my point in saying that I had the earlier declassified one is if it's classified, declassify it.

Mr. Martin: It has to go through that process.

The Commentator: I'd just like to make a comment about this surprising news of this EA prepared by USEC.

Whenever we had asked the Laboratory, right up to Ted Garberson, the head of Public Affairs, for updated information on AVLIS, we have been -- after months of waiting around, we have gotten things like the 1990 EA in response.

And we've tried to track this down both through USE and through the Lab numerous times. So this is actually very surprising information. And I don't know exactly who to be asking for assistance at this point, but that's just not acceptable.

Mr. Zahn: Okay. I will say on the Laboratory's behalf that although I'm involved in the Laboratory's assistance to DOE in its NEPA mission, I didn't receive a request, but I wouldn't -- I -- in any case, I'm sure there is one.

The Commentator: Just imagine being given a runaround. Just imagine that you're us and that we've sent a letter asking, "Is there anything new that happened," and what you eventually get back months later is the 1990 EA that your organization sued over so that they know that they're giving you something you had.

Mr. Zahn: I can't tell you again the time correlation, but I -- but I have seen the EA.

Mr. Zahn: It's public --

The Commentator: We'll take it. Thank you.

Mr. Zahn: But I'm sure there is one. I'm confident that there is one.

The Commentator: Could I get one of those reports so I don't have to go to the library and work on it?

Mr. Zahn: Which is that?

Mr. Taylor: Would you grab one out of that box, please?

The Commentator: Just going to the library and sitting in those uncomfortable chairs. I want to read what I want to read not what somebody else --

The Facilitator: Anybody else?

The Commentator: I'll take an extra if you have it. Give everybody else first because I have one.

Mr. Zahn: I might interject also for you that the follow-on -- I don't know the extent to which the follow-on program, the pilot program that you may be speaking of, as far as what was actually being followed on.

And I would just encourage you once you get the EA to compare that with what is being proposed there with what your concept of the follow-on is because I'm not sure that they might be exactly the same.

The follow-on, larger-scale programs may not, in fact, be assessable or assessed. So what level of activity after the AVLIS of the 1990 has been done, I believe has been covered by Assembly A.

The Commentator: Okay. But I don't want to lose the point that the cumulative impacts for the site need to be addressed.

The Facilitator: Okay. Anybody else?

Well, thank you all. I appreciate it.

Thank you, too.

The Commentator: Excuse me. I'm sorry.

The Facilitator: Sure.

The Commentator: Since I'm not going to get up to speak, I would like to hear some more of Marylis Kelley, what she -- it seemed to me that she didn't quite get out what she wanted. I was wondering if I could donate my time to see that she could speak.

The Facilitator: Do you have more that you'd like to say?
All of these kinds of things need to be analyzed, and these are all new since 1992. And the National Ignition Facility, again, is going to add tritium, other radioactive wastes, other contaminants, even during routine operations. And that needs to be looked at carefully with respect to other Lab operations, not just sort of on its own, the way that it's been analyzed before. Livermore Valley wines, according to the Livermore Lab's annual environmental monitoring reports, routinely show elevated levels of tritium. And these are Livermore Valley wines that the Lab takes off the shelf in the supermarket. So this may certainly be less tritium than the grapes right across the street where I live on East Avenue because, you know, you mix grapes together when you make wine. And in 1989 Livermore Valley wines taken off the shelf had four times the tritium of other California wines. It's not like a 10 percent kind of an increase. And we've taken a look at the DOE's own figures. We have a DOE document where they look at the annual releases that they know about from
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March 1999

If they're not absurd, don't be afraid of them.

Ms. Marik: Thank you.

The Facilitator: Anyone else?

Well, thank you very much. I appreciate it.

I'll just remind you there is a comment form, if you want to grab one of these on the table before you leave.

I wish to thank you everybody, including the stenographer reporting and the people over here. Thank you very much.

There's a meeting again at 6:00 tonight if any of you would like to return.

(Whereupon, the briefing proceedings concluded at 3:32 p.m.)

STATE OF CALIFORNIA

I, LETICIA A. RALLS, a Certified Shorthand Reporter in and for the State of California, do hereby certify:

That said proceedings were reported by me at said time and place, and were taken down in shorthand by me to the best of my ability, and were thereafter transcribed into typewriting, and that the foregoing transcript constitutes a full, true and correct report of comment and question portion of the proceedings which took place.

I further certify that I am not of counsel nor attorney for either or any of the parties hereto, nor in any way interested in the outcome of the said briefing.

In Witness Whereof, I have hereunder subscribed by hand this 15th day of February 1999.

LETICIA A. RALLS, RPR
CSR, NO. 10670

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3.5 Document 4: Briefing Transcript, Livermore, February 11, 1999, 6:00 p.m.
TRANSCRIPT OF COMMENT AND QUESTION PORTION
OF PUBLIC BRIEFING

Regarding:
DRAFT SUPPLEMENT ANALYSIS
FOR
CONTINUED OPERATION OF
LAWRENCE LIVERMORE NATIONAL LABORATORY AND
SANDIA NATIONAL LABORATORIES, LIVERMORE

Proceedings before: BARRY LAWSON, Facilitator

Thursday, February 11, 1999

6:00 p.m. session

Taken by Leticia A. Ralls,
a Certified Shorthand Reporter,
in and for the State of California
CSR No. 10070

PROCEEDINGS

THE FACILITATOR: Thanks.

Now, let's start our comment period.

I invite you to go one at a time for an
initial period of a maximum of about five minutes
either asking questions or making comments
regarding the Supplement Analysis.

Please introduce yourself and affiliation,
if you'd like, and indicate before you start
whether you're asking a question or making a
comment. That will help our notetakers.

If you're closing in on the five-minute
mark, I will request that you conclude your
comments as gracefully and graciously as possible.
Remember, you'll have a chance to supplement those
later in the evening.

Oh, yes. If you have some written comments
that you would like to leave with us, you're
certainly welcome to do it, and you don't have to
feel that you have to read the whole thing to which
you can summarize the oral comments and submit the
written ones for the record. Written and oral
comments will receive the same attention.
MR. LACARDO: I think what he's looking for specifically is why do we need 40 tons -- it's really 40 tons of uranium in Building 490? Why such a large amount?

I think we'll give you a specific response to that. What the programs need to require the 40 tons of uranium in Building 490? Is that essentially --

THE COMMENTOR: Yeah, that will do.

MR. LACARDO: -- the question that you have?

THE COMMENTOR: Yeah.

THE FACILITATOR: Somebody else?
The second is that, by asking your comment or asking a particular question -- for instance, if you wanted to ask the question, "Why doesn't this take place at Los Alamos?" somebody will have to answer that question. It may not be the right answer that you want, but they probably will give you an answer in writing.

THE COMMENTOR: I also understand that Los Alamos is about as big as Livermore, and they would have the same complaints that we have here.

THE FACILITATOR: Right.

THE COMMENTOR: It's just moving it from us to them. I don't consider that fair, but it seems like there's some wonderful places in the middle of nowhere that this could be done and not bothering anyone. And that concerns me.

THE FACILITATOR: Thank you for your comment.

Anyone else care to go? Yes, sir.

THE COMMENTOR: Yes. I related to the same questions that were just coming along in there. Part of my question would be: When he asked, "why here," is part of the answer "why here" because -- and I'll break it apart for a moment here.

I remember during the Star Wars history a
illegal for you to write letters and talk on the telephone.

Mr. Taylor: To inform Congress when they request.

The Commentator: Lobbying and -- the money part is what makes it illegal.

I'm sorry. I didn't mean to interrupt you.

Previous Commentator: That's quite all right.

The Facilitator: May I ask for your name?


The Facilitator: Do you want to continue?

The Commentator: Yes. Well, I was questioning them about this because what you're saying is that the resolution to this thing, if we wanted to change it, is then for us as citizens to lobby Congress directly against this ongoing procedure here.

The Facilitator: That's one --

Mr. Taylor: That's right.

The Facilitator: That's one road that you could take.

Mr. Taylor: Your representatives represent you and...
MR. TAYLOR: If I could maybe give you my concept.

THE COMMENTOR: Well, do it in terms of basketballs. Can you help me with it in terms of basketballs?

MR. TAYLOR: If we do the -- enriched uranium is, I think, what DUE is more concerned about because it's a higher hazard to the public. Depleted uranium is in airplane ballasts and a lot of places -- sailsboats. So it's out in the public.

So that 3,000 kilogram that we're talking about there is depleted natural uranium that you would find in nature or, like I said, in ballasts and that. So what we're actually saying is: We could have had 300 kilograms of enriched uranium in that facility; we would like to raise that from 300 to 500. So, that, in your basketball analogy, you know, that's -- 300 is 1 basketball, so we're going one plus one and three-quarter basketballs, or something like that -- say two basketballs of highly-enriched uranium. So hopefully -- rather than 12 basketballs of highly-enriched uranium which is much more hazardous.

THE COMMENTOR: May I ask a quick question?

MR. TAYLOR: It's in the 80- to 90-percent enrichment, where natural and depleted is less than one percent enrichment. So there's a tremendous spread there. It's weapons-grade, and that type of materials, yeah. Weapons-grade, reactor-grade, at that level.

THE COMMENTOR: You made reference to some of this material being stored. Where is it being stored? Locally? Elsewhere?

MR. TAYLOR: It's being stored within the building, but it's not at risk at any one time because the operations aren't being performed on it. It's in storage.

It's not considered -- it's not considered feasible to have an accident scenario that covers all material that's in storage. You analyze accidents for the material that's being operated on and that you -- as a foreseeable accident scenario.

If anybody wants to expand?

MR. TAYLOR: I guess, it's -- it's stored in the vault, in the answer to the question, in sealed cans. And they put those in a -- like a regular -- like, you know, safety deposit-type vault. So that's where it's stored and it's only brought out when they're going to use it.

THE COMMENTOR: But then it's still on premises.

MR. TAYLOR: Yes, it is.

THE COMMENTOR: Part of the way I understood your answer is, "Well, we're using none of it, but the rest is somewhere else in storage. But we..."
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1. still have all of this material here within the confines of the Lab."

2. MS. MARIK: Yes.

3. THE COMMENTOR: I was in Harrisburg, Pennsylvania, in March 1979. And all of their material that was stored at Three-Mile Island was in a safe way with regard to any foreseeable accident.

4. MS. MARIK: That was an operating reactor plant.

5. THE COMMENTOR: Yes, it was.

6. MS. MARIK: Right. It's --

7. THE COMMENTOR: And what you're suggesting is that you've foreseen everything that's possible in your program, and, therefore, there's no possibility that any accident could ever involve the material in the vault; it's only what you actually have in your hands at the moment that's -- that's possible to have an accident. Because if we do have a big accident with that, what's the possibility that the stuff in the vault becomes involved also? Like Reactor 2 and Reactor 1 on Three-Mile Island. If Reactor 2 had gone, Reactor 1 would have gone also.

8. MS. MARIK: Do you want to explain the

9. And that's what was assessed in this document, the release of the material during the -- during the experiment which could -- could be released to the environment; whereas, the material that's stored in these sealed sources, the probability of a release to the environment would be extremely small. It would be incredible for that to happen.

10. Do you have to look at it from a risk perspective. It's a very minute risk with respect to this large amount of material that's in storage versus the amount that's actually being worked with.

11. THE COMMENTOR: I hear, you know, a lot of sensible talk coming over here from the end of the table, but I also know -- and I'll follow it over the years -- different problems that are related with the situation.

12. And you sound like very responsible people, yet both this Main Site and Site 300 are on the Superfund cleanup, meaning that they're on the major contaminated areas in the entire country. That tells me that somebody's not doing their homework; somebody's not doing their cleanup. That tells me that accidents happen and that people don't have sloppy and that you're not taking the proper precautions.

13. MS. MARIK: Well, one of the important things to note is that the regulations have changed over the years. And over the years, it's been an ongoing process of getting smarter about releases into the environment and the impacts that those have at our sites.

14. And some of those issues are difficult to deal with because I consider them to be legacy issues. In the case of releases to groundwater and everything, we didn't have regulations that required things to be disposed of in containers, or we weren't aware of the issues that, you know, were happening within the environment.
And all I can really say as a result of all this is that it's always the full intent of the Department of Energy to ensure that we perform operations safely both for the safety of our workers as well as the safety of the public and the environment.

And other than that, I --

THE COMMENTOR: Where do you live, say I ask?

MS. MARX: I live in Fairfield.

THE COMMENTOR: Well --

MS. MARX: I can't afford to live in Livermore.

THE COMMENTOR: So what you're saying is that some of these things have happened because they are unforeseen. And what assurance can you give us that there are not new problems with the work going on that have yet not been foreseen and that were not -- we still have to reclaim all those plumes of pollutants under the ground that have gone beyond the perimeter of the Laboratory, gone into private residential areas. We still have to pull all that back.

What can you tell us -- what can you do for us to really assure us? I mean, is there pull all that back.

THE COMMENTOR: C-ent &Out your TepOrt or Br. Falk?

THE FACILITATOR: It seems like that's a very reasonable question. It probably involves some other people besides these folks to answer that. But I think the questions that you asked -- and you would address that in your public response document, would you not?

MS. MARX: Yes.

THE FACILITATOR: I mean, I've tried this in many other places. This is a tough question to answer. There's no doubt about it. It's a good question to raise.

THE COMMENTOR: Well, I don't see facilities like this going up like in Beverly Hills. I don't see facilities like this going up in Manhattan. I don't see facilities like this going up in downtown San Francisco.

So it seems to me that selections are being made where people are maybe not as well organized and don't have as much money to resist this kind of operation.

THE FACILITATOR: Okay. Comment taken.

Understood.

Mr. Falk?

THE COMMENTOR: Comment about your report or whatever this is, Draft Supplement Analysis.
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THE FACILITATOR: Are you saying you'll try
to be consistent?

THE COMMENTOR: -- is that what you said?

MS. MARIE: I'll try to make it clearer.

THE COMMENTOR: Well, it's confusing to some
pretty well-educated readers. Reasonably well-read
in science, too.

4-16 cont.

PREVIOUS COMMENTOR: If we're going to talk
about powers of 10 in one paragraph, then they
should continue in powers of 10 in the others.

LAZARO: Your comment is well-taken.

THE COMMENTOR: One in a million changes.

that's as the gentleman represents.

MS. MARIE: We will try to make that
clearer.

LAZARO: That's an easy fix.

THE COMMENTOR: And why not -- why not also
put beside these curies the equivalent in
becquerels and tell them exactly the meaning of
that because I don't know how many people know what
a curie is.

It's a word related to some woman, but I
don't know they know the value of that. That's a
big, big number when you talk about 3.7 times 10 to
the 16th. That's a whopping -- that's comparable
to the number of stars in our galaxy. You see?

They don't have a feel for that kind of
thing. So talk about something that -- tell them
about the number of disintegration per second.

They'll catch onto that damn quick if you don't
confuse the issue. And that's what you should use
anyway, you see.

Those are so-called what? International
units? Do it.

MS. MARIE: Your comment is noted.

THE FACILITATOR: Good. Anyone else?

THE COMMENTOR: Well, I'd just like to say
that, again, over the years -- I should mention, by
the way, that I've lived in the community for 25
years. And sometimes that number, just like this
gentleman was saying, you know, if you don't deal
in the same relative conversion tables, sometimes
that doesn't mean anything.

To me, 25 years means a quarter of a
century. A quarter of a century. And I've lived
here and I've watched over the years the reports
coming in of all the various problems that we have
had with non-compliance with safety regulations,
non-compliance with a number of issues in here
that have led to these accidental leaks of

plutonium, tritium, the PCBs and other things and,
furthermore, very clearly -- although I didn't
realize that you would deny it -- the overt
attempt to cover up all of this until it gets out,
until some newspaper digs up the story, until some
insider, some whistleblower gives the information.
But I have -- for a quarter of a century, I
have been watching, hearing, and reading the
insidious way and the arrogance of the people who
are here that feel that they can do whatever they
want to do in quest of knowledge, in quest of
science, but they don't give a damn about how they
involve us, how they endanger us. They don't give
a damn about the democratization of the process.
You're all on some sort of a high-flying
loop about the quest of knowledge. But you're
endangering all of us: my life, my children's life,
my grandchildren's life.

And you don't live here, and you're not
part of it. And that's part of what this community
resentment is about.

And over the years, there have been
countless examples of accidents, of leakages, of
ventings. The places where our children go to
play, the parks and all of that. you have the

higher plutonium levels. And you don't live here,
and you don't pay that price, but we do.

And I want you to know that -- I mean,
we're part of a community in here that are getting
a little bit fed up with this, and we want to hold
you and we intend to hold you to a higher standard.
And one of you mentioned reference to, well,
if we're not happy with it, we can sue you. And
there have been suits being brought lately. And
there have been some very, very significant results
coming out of that thing.

And I want you to know, I mean, speaking for
myself but there's many other people in here, that
we're a little bit tired of this process. And it's
very easy -- I'm thinking right now -- has nothing
to do with us.

A year or so ago, the federal government
decided to set up a waste incinerator plant over
there in the Ward Valley area in an Indian
reservation area. Right?

Nobody's going to stand up to fight to that.
You go where the people don't have the ability to
organize themselves, don't have to money the resist
this. But the things are getting better
publicized, and there's a better accounting going
And even though you live in Chicago or New York or D.C., the time will come that we hold you accountable to these very sensible explanations that you're giving. And so when you go back home, you better make sure you've got the right liability insurance.

THE FACILITATOR: One thing that could be done is to explain in the comment response document just what provisions are out for letting people know if there's a problem with the site. This is something — it probably is done within that analysis, but it could be included.

Thank you.

MR. ZAHN: I might also invite the readers and the commentors, too, to refer to our annual — site-wide annual environmental report which does summarize each year many of the mission histories or event-type of events that do occur that you may be concerned about.

And they're published annually, and they do give trending information. And I think you'd find in many cases — most of the cases that you're speaking of that we actually have a good track record.

works and functions properly for the full year and it is monitored and whatnot correctly and does its job properly, if you take the numbers in that environmental report collected from a man who's been out there for the full year, he breathes — only in the air now — enough tritium in a year to have beta disintegration in every cell of his body.

You do the arithmetic.

I'll tell you that the number of cells in your body is approximately 10 to the 13. You pick your own numbers and do it.

Now, that's not what I call "no health threat." And that's the vocabulary that's used in things that are stated around here. "Our yearly report shows there is no" — the word "no" keeps showing up — "no health threat." No means zero.

It's been known for 30 years there is no such thing as a safe dose of ionizing radiation. And, furthermore, only one cell needs to become an outlaw to form cancer.

And cancer is only the tip of the iceberg if there's any damage from this stuff. If you have immune depression, you've got so many different DNA damages of which cancer is only the one. And you like to keep talking about cancer because you know it's a multi-factorial thing that takes from three to seven injuries of the same cell to get the show on the road.

Now let's talk about immunity. Why don't you talk about immunity? I object to you using the word "no health threat." That is a scientific deception on people that don't know that — zero.

"No" means zero to me. I assume it means zero to everyone else.

Say that that is "small" not "no" threat.

THE FACILITATOR: Okay.

THE COMMENTOR: Now, you do the arithmetic on tritium only in the last couple of years of the environmental report. Since you're part author, do it. See if I'm wrong. Call me up. My phone number is in the book.

THE FACILITATOR: Please. Sir?

THE COMMENTOR: Are there no reports are a valuable asset for the public readership, written to be well-understood, and they do reflect the true monitoring progress here at the Laboratory.

THE COMMENTOR: It seems to me that information comes out only when it's forced.

For example, after the 5.5 earthquake that we had here in Livernore, there were several leaks that the Lab remained absolutely silent about until the information began to leak out from insiders. That does not give me any confidence in the reports that you're citing.

THE FACILITATOR: Okay. Yes, sir?

THE COMMENTOR: Talking about the environmental reports you put out, are you involved in it?

MR. ZAHN: Are I involved in it?

THE COMMENTOR: Yeah, the yearly report?

MR. ZAHN: Yes. I have a small portion that's in there that represents some of those —

THE COMMENTOR: Let's talk about that a minute.

Now let's talk about the tritium monitor that's sites out here by Zone 7 Plant. Assuming that it...
THE COMMENTOR: You have no concern over what happened to these or how it might affect us or concern us, right? It's their personal rights?

MR. TAYLOR: We explained the details of what happened and that it happened to a certain number of people and exactly what happened to those people, but the medical records are not --

THE COMMENTOR: I don't think we even know exactly what happened to those people. We do know about the accident. What did happen to those -- what was the outcome of those people? Without giving us names, what did happen to those four people that were involved, if that was -- if that was the number?

MR. TAYLOR: If you could -- if you could give me the accident you're referring to, you know, I don't know if I'm talking about the same one you're talking about.

THE COMMENTOR: You know perfectly well.

MR. TAYLOR: If you can tell us the accident you're referring to, we could get you the report. You know, you could read that report. It explains what happened.

THE COMMENTOR: I'll give you my name and card, and you can send it to me.
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Are we going to have a great many more experiments going on? Is that the reason why we need to have more material in storage?

Ms. Maris: At any given time, we don't expect to have more experiments going on. But the programmatic activities at the site --

The Commentator: What does that mean?

"Programmatic activities at this site"? Say that in English. Something about the programmatic activities.

Ms. Maris: The research and development projects. And, like I said, in this particular example, we've listed what the -- what the projects that -- the amount of material that we're proposing that is on page 6-5 of the document, and those are the programs that will be supported.

So this is like a list of the different research and development programs.

The Commentator: You've said there will not be any more research going on, but there is a need for more material in storage.

Ms. Maris: No. You asked about an increased number of experiments. And what I'm saying is at any given time, there won't be any more material at risk. You can only have a certain amount of material out at any given time.

But the different -- the different programs that will be going on at that time -- I mean, there are the programs' activities -- I'm just taking myself here --

The Commentator: Let me see if I paraphrase that then and say that there will be more programs going on that are using the material than there is presently.

Mr. Lazaroff: Let me give you a concrete example. If you look at chapter 6 or Section 6.2 of the document, it talks about about Building 332 and the programs that would be driving the need for more uranium to be stored in the vault in Building 332.

What Lois is trying to tell you is: Okay, you have these individual experiments; the amount of material that would be at risk at any one time would not change.

However, your question is: Why do you need more material in the vaults? What does change is the frequency. You're going to have more experiments that are going to be conducted than we've had in the past. So the frequency is going to increase.

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out from other people what can be done and what is being done now.

And I think that's as far as we're going to go with it tonight. They have some limitations here. We're talking about a Supplement Analysis.

THE COMMENTATOR: I know, but there's a chance someone who has something to do with the environmental report diddling it out properly for the people here. That's all.

THE FACILITATOR: Okay. That's fair enough.

THE COMMENTATOR: Do the rest of it that way, see? Then you'll get the confidence of people.

Once you do these things properly and explain it to them, then you'll get more confidence.

THE FACILITATOR: I think that's the major point, that you want to see the people have more confidence in what's going on.

Anyone else?

THE COMMENTATOR: I --- just reviewing in my mind some of the information I heard earlier, I wanted to ask for a clarification.

Talking about the experiments that are going on and the amount of material that is here, it's going to be in storage; it's not going to be actively involved in research projects.
THE COMMENTOR: I don't understand what you're getting at... how do you account for that? Why can't these HEPA filters be exchanged or replaced? What's going on?

MR. TAYLOR: It's a cumulative problem. We can exchange the HEPA filters at this rate, we have a limited lifetime and subject to damage by moisture and excessive heat, excessive cold, and a limited time before they have to be exchanged.

THE COMMENTOR: I'm not sure if I understand all of that. What was the last accidental release of plutonium that was had at the Lawrence Livermore Lab occurred in 1980. So I think that we have a pretty good record. And if anybody has any other information or think that there's other issues, let me know.

But that is the last release that we had of plutonium, and it was 1980. Was that last accidental release of plutonium that we had at the Lawrence Livermore Lab occurred in 1980? So I think that we have a pretty good record. And if anybody has any other information or think that there's other issues, let me know.

THE COMMENTOR: Was that what got vented or put into the sludge that citizens over here took home and put into their gardens? That Livermore Lab handed out and gave out to citizens to take home to nurture their soil? And it had plutonium in it?

MR. TAYLOR: What was that? That was the last accidental release of plutonium that we had at the Lawrence Livermore Lab occurred in 1980. So I think that we have a pretty good record. And if anybody has any other information or think that there's other issues, let me know.

THE COMMENTOR: Was that what got vented or put into the sludge that citizens over here took home and put into their gardens? That Livermore Lab handed out and gave out to citizens to take home to nurture their soil? And it had plutonium in it?

THE FACILITATOR: I suggest that you take the comment and that you explain it clearly to the audience. You do probably in Section 4-5 just the number of experiments the next day and so forth. It's going to vary throughout the year. But the total number for the entire year is going to go up a fractional amount because of some of those programs.

For example, the NOX program was mentioned as one of the drivers in here. So there's going to be some additional experiments that would be needed to conduct the NOX program, and you'll have more operations in the glove box associated with that program.

Does that answer your question?

THE COMMENTOR: I think it answers the question. It certainly raises another one. That number of experiments is going up a "fractional amount." I think I heard you say that.

MR. LAZARO: It's going up more -- I can't give you an exact number.

THE COMMENTOR: What's the fraction of 13 divided by 1, which is the increase in the amount of material? That's hardly --

MR. LAZARO: It's not going to go up the same proportion as the increase in the amount of material. I could tell you that.

THE COMMENTOR: Then why increase the material to that level? If you're going to increase your experimental rate by 25 percent or 75 percent, why multiply the amount of material by 12?...
phenomenon. That work area and going through the filters.

Chips from machining -- any time that burns, it
produces a high population of tenth-micron
particles.

Burning both uranium metal now -- you
understand what I'm saying. If you burn either
plutonium or the uranium metal, the metal fumes
from that, the metal oxides produce them.

Just like when you burn a ribbon of
magnesium oxide? You see that big smoke? A lot of
tenth-micron particles are produced there, too.

But when you burn uranium and plutonium, there's a
high population of tenth-micron particles.

THE FACILITATOR: Okay. Any other comments?

Well, if not, I want to thank you all for
your time tonight and remind you about the comment
form, which I've lost. Here it is. Here it is.

And I'll remind you that the end of the
comment period is February 25th. And you can get
your comments in either written form, or I suppose
you can call them in or fax them in if you'd like.

And then we'll be looking forward to the comment
response document which will be done subsequent to
that and then a final determination.

Thank you very much. Sorry about my -- my
stuttering -- whatever you want to call --
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STATE OF CALIFORNIA ) ss.

I, LETICIA A. RALLS, a Certified Shorthand
Reporter in and for the State of California, do
hereby certify:

That said proceedings were reported by me
at said time and place, and were taken down in
shorthand by me to the best of my ability, and were
thereafter transcribed into typewriting, and that
the foregoing transcript constitutes a full, true
and correct report of the comment and question
portion of the proceedings which took place.

I further certify that I am not of counsel
nor attorney for either or any of the parties
hereto, nor in any way interested in the outcome of
the said briefing.

IN WITNESS WHEREOF, I have hereunder
subscribed by hand this 15th day of February 1999.

LETICIA A. RALLS, RPR
CSR. NO. 10070

March 1999
4 RESPONSES TO COMMENTS

4.1 RESPONSE TO COMMENTS FROM DOCUMENT 1: LETTER DATED FEBRUARY 10, 1999, FROM TRI-VALLEY CARES

Comment Code 1-1
Response:
DOE disagrees that a new EIS/EIR is needed because LLNL, since 1992, has “continued to have environmental concerns.” DOE’s evaluation of the environmental impacts of LLNL operations, considering changes since 1992 and new projects or proposals to be implemented by 2002, indicates they would remain within the envelope of environmental consequences established in the 1992 EIS/EIR. The SA concludes that either the projected impacts are within the bounds of the 1992 EIS/EIR analysis, or that the incremental differences are not significant. See the responses to comments below and also Common Issue 2.1, Supplement Analysis Process, above, for further discussion.

Comment Code 1-2
Response:
DOE disagrees that a new EIS/EIR is needed because both the Livermore Site and Site 300 are on the National Priorities List. The Livermore Site and Site 300 were placed on the NPL in 1987 and 1990, respectively, primarily as a result of trichloroethylene contamination in the groundwater. A discussion of the level of contamination was presented in the 1992 EIS/EIR (section 4.17), as were the proposed remediation program and the status of the review and approval of the appropriate Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) documentation.

For a discussion of the NEPA process, see Common Issue 2.1, Supplement Analysis Process.

Comment Code 1-3
Response:
DOE agrees it has exceeded National Pollutant Discharge Elimination System permit values at LLNL 14 times since January 1996, with two of those exceedances resulting in Notices of Violation (NOV); no fines were assessed. In response to the releases that occurred in 1996-1997, LLNL increased its employee awareness and source control efforts. These have been effective. The last release to the sanitary sewer that exceeded LLNL’s permit limits occurred in December 1997. In September 1998, LLNL completed the installation of its upstream triggers pH-monitoring station. In the past, pH releases outside of permit conditions were detected and diverted to the Sewer Diversion Facility by the Building 196 monitoring station. Building 196 generally took about two minutes after initial detection to confirm that a release was occurring
and activate this diversion. Thus, the first few hundred gallons of a release were not captured. This new station remedies that situation. It is located upstream of Building 196 and is configured to detect and divert a pH release to the Sewer Diversion Facility before any of the release can leave the site.

Comment Code 1-4
Response:

DOE disagrees that LLNL has a history of recent, frequent accidents. The Laboratory has implemented programs, policies, and procedures to manage industrial and nuclear safety. In the event of an occurrence, the Laboratory or DOE investigates the incident, determines the root-cause, develops corrective actions, monitors their implementation, and disseminates lessons learned to ensure the recurrence of similar incidents is prevented.

As an example, in January of 1997, a gas sensor detected the presence of chlorine gas in a cabinet containing a pressurized cylinder of chlorine. The sensor automatically sounded an alarm and shut off the flow of chlorine from the cylinder. No detectable gas concentration reached the inhabited portions of the building, although the building was evacuated for 15 minutes in response to the alarm. The cause of the leak was a defective commercial chlorine gas pressure regulator that had just been placed into use in the gas cabinet. The defective part was immediately fixed. Several elements of the LLNL defense-in-depth program were displayed here. An alarm notified personnel to evacuate until the level of concern could be identified. The automatic shutoff system worked and prevented further release. The location of the gas cabinet in the building gas vault prevented general release of the gas at a detectable concentration. This incident yielded no detectable chlorine concentrations within the inhabited portions of the building and was within the bounds of potential impacts from an accidental 100-pound release of chlorine gas presented in the 1992 EIS/EIR.

Another example is the July, 1997 “shredder accidental exposure” in which workers shredding used air filters were radioactively contaminated. One worker was contaminated with curium, an alpha emitter, on his chest, face, and in his nostrils. A DOE report credited inadequate safety procedures for this accident. This incident was investigated by DOE. The report, “Type B Accident Investigation Board Report of July 2, 1997 Curium Intake By Shredder Operator At Building 513 Lawrence Livermore Laboratory,” dated August 1997, was the result of a detailed investigation into the events that led to the exposure. The investigation resulted in several corrective actions called Judgments of Need (JON). The JONs were designed to eliminate any future accidents of this nature. LLNL’s corrective action plan, which consisted of 47 separate actions, was accepted by DOE Oakland Operations Office (DOE/OAK) and a Headquarters DOE Price Anderson Amendment Act audit panel. LLNL has demonstrated to DOE, through an assessment of its corrective action implementation, that it has met the requirements of the JONs.
Comment Code 1-5
Response:

DOE acknowledges that in a facility with a large number of employees and operations, such as LLNL, it is possible to operate with an occasional employee failing to observe a procedure, such as inattention, miscommunication, or lack of discipline. However, DOE and LLNL take these failures seriously, recognizing that one reason for following a procedure is to prevent accidents and to protect the worker and the public. Every failure that crosses a reporting threshold is reported to laboratory management, to the DOE site/area office, and to DOE Headquarters through the formal “Occurrence Reporting and Processing System.” Each report includes a root cause analysis and a corrective action to prevent it or similar recurrences. Lessons learned that could be of value elsewhere are distributed throughout DOE contractors. DOE program managers also trend these occurrence reports, and when a pattern or specific process or facility appears to be having a generic problem, formal action is taken by DOE management. Accidents that exceed certain thresholds are formally investigated by formal Accident Investigation Boards. Incidents that violate Nuclear Safety Requirements (e.g., 10 CFR 830 and 10 CFR 835, and their implementation plans) are investigated by an independent office in DOE Headquarters, and if that incident reflects a pattern or carelessness, formal enforcement actions are pursued under 10 CFR 820, which may result in fines and even imprisonment, and have resulted in fines at this laboratory. The commenter has identified two notable examples (the curium accident and the infractions in Building 332) for which DOE has launched formal investigations and enforcement actions, even extending to mentoring programs to improve the safety culture in Building 332.

When the July 1997 criticality infractions occurred in Building 332, the Laboratory management took an immediate action to place the facility into “STANDBY MODE.” This decision was made without influence of the DNFSB. These criticality infractions were related to the fact that workers failed to follow approved procedures containing criticality controls. The infractions were self-reported by the facility workers and, most importantly, no radioactive materials were released and no worker contamination occurred. Furthermore, the Criticality Safety Group conducted thorough evaluations of both infractions and concluded that neither infraction, even if not identified, would have led to any criticality events, even under the most conservative of assumptions.

Work in the Plutonium Facility has been restricted since July 1997. During this time, the safety processes and procedures used in the Plutonium Facility have been extensively modified, workers re-certified, and work conducted to assess the viability of these changes. DOE and LLNL believe these changes have corrected the fundamental causes leading to the criticality infractions. In the course of the resumption process, DOE HQ, DOE/OAK, and the DNFSB have been exercising close oversight roles in enhancing Building 332’s safety culture.
Comment Code 1-6
Response:

DOE disagrees that LLNL has a history of "receiving Notices of Deficiency (NOD) and NOVs from the California Department of Toxic Substances Control (DTSC)." DOE believes that LLNL operates safe, environmentally sound, and regulatory compliant waste management facilities for all its hazardous and mixed waste activities. Specifically, there were no violations with significant impacts to human health or the environment during the 1991 through 1994 annual DTSC inspections of LLNL. All violations during this period were corrected in a timely manner. No violations of the regulations were found during the 1995 and 1996 inspections. During the 1997 inspection, DTSC cited LLNL for handling "combined waste." Combined wastes are radioactive wastes that contain California-only hazardous constituents. The citations stemmed from a disagreement between DTSC and DOE over regulatory status and DTSC's jurisdictional authority over the waste streams; the citations did not stem from unsafe handling of the wastes and did not pose a threat to human health or the environment. These waste streams are being handled as LLW under the requirements of the DOE. The DTSC and the DOE are in discussions regarding the regulatory status of these wastes and are in the process of negotiating a Memorandum of Agreement. LLNL was also inspected in 1998; however, the report of that inspection has not yet been finalized.

As part of LLNL Resource Conservation and Recovery Act (RCRA) Part B permit application, on March 1997, DTSC issued a NOD. The NOD are DTSC's comments and questions to clarify and complete the information in the LLNL application and are not considered violations of regulations. This is a routine part of the review of a Part B application by DTSC for any facility and is not specific to the LLNL Part B application.

Comment Code 1-7
Response:

DOE agrees that there is still contamination of the groundwater at LLNL. However, significant improvements have been made over the last few years. In 1997 LLNL found hazardous levels of mercury in soils cleaned out of a single stretch of storm drain. That soil was removed as hazardous waste and the storm drain lined. Following this activity, LLNL detected mercury downstream of this location in a single storm water sample. This was the first detection of mercury in LLNL storm water runoff since 1994. Mercury has not been detected in subsequent samples.

The groundwater tritium plume at Site 300 extends about 9,500 ft from its sources at landfill Pits 3 and 5 and the Building 850 firing table. No part of the plume extends offsite and no human receptors are threatened. Maximum current groundwater tritium activities are about 475,000 pCi/L. The majority of the plume is in a laterally extensive perched water-bearing zone. Radioactive decay reduces the activity of tritium by one half every 12.3 years. Time-series plots of total tritium in groundwater have generally shown a decline in total tritium activity with time, resulting from both radioactive decay and dispersion. Until recently, the total tritium activity in the plume has generally decreased at a rate similar to or greater than the radioactive decay rate.
Despite occasional slug releases from the landfills, the horizontal extent of the Pits 3 and 5 portion of the tritium plume has not increased during the 1986-98 time period, thus supporting that natural attenuation by radioactive decay and dispersion is occurring. From 1985-98, the horizontal extent of the Building 850 portion of the tritium plume has increased only along its distal edges; the extent of the 20,000 pCi/L contour (which is the State and Federal Maximum Contaminant Level) has markedly retreated. Using conservative assumptions and hydraulic parameters, fate and transport modeling indicates that when the tritium plume reaches the northern Site 300 boundary, the tritium activities will be at background levels (100 pCi/L). Modeling indicates that tritium activities at the southern Site 300 boundary will also be low, around 1,000 pCi/L. There are no contaminant transport pathways to humans on or offsite, and thus there is no risk to humans. The issue of tritium in Site 300 groundwater in the Pits 3 and 5 areas, and at Building 850 Firing area, was discussed extensively in both the 1992 EIS/EIR (Section 4 and Volume IV). This issue has also been discussed in the Site Annual Environmental Reports.

To address the rise and fall of groundwater levels at Site 300, LLNL had installed, by April 1992, an interceptor trench system upgradient of the west firing area landfills at Site 300. The trench was constructed as part of the RCRA capping of landfill pit 7. The purpose of the interceptor trench system was to intercept shallow subsurface groundwater flow and divert it away from landfill pit 7. This trench has reduced the amount of water available to get into the pit. In addition, by the summer of 1999, LLNL will sample and calculate the inventory of tritium in landfill pits 3 and 5. Computer modeling of the tritium values will be conducted to determine if this source of tritium contamination to the groundwater could potentially present a risk to human health and the environment. Should such a potential risk be identified, then source isolation technologies would be implemented to prevent risk to human health and environment from tritium.

Comment Code 1-8
Response:
DOE believes it has managed sewer system problems at LLNL in a responsible and proactive manner. During the period of 1992-1995, LLNL investigated over 22,000 source connections (including approximately 7000 drains) and their respective destinations. Approximately 150 of these sources required some form of repair. These repairs were complete at the end of 1995. During the same interval approximately 24,000 linear feet of sewer line was relined using an in-situ form liner to endure the integrity of the sewer system. LLNL’s source control effort has proven effective. There has not been a discharge from the sanitary sewer that exceeded permit conditions since December 1997.

After signing the CERCLA ROD in 1992, new innovative technologies have been employed to accelerate cleanup in a more cost-effective manner. LLNL has implemented a strategy called Engineered Plume Collapse (EPC). EPC utilizes the appropriate technologies needed to cost-effectively achieve the required remedial objectives and increase contaminant mass removal. Mass removal rates at the Livermore Site have more than tripled since the
implementation of EPC in 1997. An additional example is that rather than constructing seven permanent groundwater treatment facilities as outlined in the CERCLA ROD, LLNL has developed alternative treatment units to accomplish site cleanup. Currently, LLNL is operating 4 permanent groundwater treatment facilities, 2 vapor extraction facilities, 10 portable treatment units, 1 mini treatment unit, 1 in-situ catalytic reductive dehalogenation unit, and 1 solar powered groundwater treatment unit.

Rather than extracting groundwater from 18 initial locations, LLNL currently treats groundwater from 60 extraction wells at 16 locations in 11 separate areas, treating approximately 725,000 gallons of groundwater per day or about 22 million gallons per month. Most groundwater treatment is accomplished by air stripping, with some ion exchange where needed. Remediation of the one area at the site that contained fuel hydrocarbons was completed in 1995 and resulted in a determination of No Further Action by the regulatory agencies in 1996. Hydraulic collapse of the western offsite contaminant plumes has been dramatic, resulting in pull-back of one plume by more than 1000 feet and a decrease in volatile organic compound (VOC) concentrations by an order of magnitude. Currently, VOC concentrations offsite are generally below 50 parts per billion (ppb) and are approaching the Maximum Contaminant Level of 5 ppb. The affected groundwater is not used by the public, and therefore the risk to the public is minimal.

See also the response to comments 1-2, 1-3, and 1-7, above.

Comment Code 1-9
Response:
DOE disagrees that “LLNL has a history of being out of compliance with safe storage requirements.” DOE and LLNL conduct all waste management activities in compliance with the applicable regulations. All hazardous and mixed waste are managed in accordance with the California Code of Regulations Title 22 and CFR Title 40. In addition, the treatment and storage facilities used for regulated wastes will comply with a RCRA permit that will incorporate an approved operations plan.

DOE and the State DTSC have entered into an agreement dealing with mixed waste, pursuant to the Federal Facilities Compliance Act of 1992. This agreement has resulted in a Site Treatment Plan that addresses all mixed waste streams, describes the treatment process planned for them, and gives dates for completion of treatment. Regular reports are required and have been provided by LLNL. DOE believes DTSC has a thorough understanding of how LLNL manages its mixed wastes, combines waste, and manages issues regarding cross-contamination through inspections and the permitting process.

In 1998, LLNL provided DTSC with a list of Satellite Accumulation Areas. LLNL has never refused accessibility of inspectors to areas within the laboratory or within buildings that house Satellite Accumulation Areas.
DTSC is aware of how LLNL treats its hazardous and mixed waste. The regulated waste operations during “interim status” are outlined in the interim status documents. Interim status documents for hazardous and mixed waste operations at LLNL include the approved August 1996 (revised January 1997) Part A and the interim status document dated May 16, 1983. Currently, LLNL hazardous and mixed waste operations are annually inspected by the DTSC against the hazardous waste regulations and the interim status documents. LLNL does not employ waste treatment and handling activities other than the ones authorized by the DTSC. LLNL has also explained in detail its future hazardous and mixed waste operations in the Part A and Part B permit application. The permit application has been reviewed by the DTSC and has been deemed complete. LLNL is required to label mixed waste as such. The labels for mixed waste include the words “Hazardous and radioactive mixed waste”.

In 1990, there were questions concerning one shipment of waste to the Nevada Test Site (NTS). Once the waste reached NTS, the generator belatedly informed Hazardous Waste Management (HWM) that there might have been some Kimwipes (paper tissues) which may have been used in conjunction with solvents to degrease radioactive components. LLNL suspected the waste was mixed waste. LLNL representatives went to NTS and were able to verify, through the paperwork, that 12 of the containers did not contain the Kimwipes but that 18 may have contained Kimwipes. The containers could not be opened at NTS without the proper facilities; therefore, the containers were returned to LLNL for additional characterization.

**Comment Code 1-10**  
**Response:**  
DOE acknowledges that there have been problems with the use of HEPA filters at LLNL. However, DOE and LLNL disagree with the comment that the nuclear safety program and the safety of the public have been compromised by LLNL operations. As safety concerns are identified, corrective actions are developed and implemented in a timely manner. As an example, the Facility is in the process of replacing aging HEPA filters, starting with systems relied on to provide confinement of nuclear materials. The Facility expects to be complete with the replacement of the confinement HEPA filters by the end of fiscal year 1999.

See also, Common Issue 2.4, Concerns With HEPA Filters.

**Comment Code 1-11**  
**Response:**  
DOE does not believe that there are “significant new circumstances or information relevant to environmental concerns… since the 1992 EIS/EIR for LLNL, thus requiring a new EIS/EIR.” Operations at Building 332 are included in the analysis of the 1992 EIS/EIR.

See Common Issue 2.1, Supplement Analysis Process, Common Issue 2.2, Proposed Changes in Administrative Limits, and Common Issue 2.4, Concern with HEPA Filters, above. See also the response to comments 1-1 and 1-5, above.
Comment Code 1-12
Response:

DOE agrees that plutonium has been found in Big Trees Park at concentrations above those that can be attributed to worldwide fallout, but DOE disagrees the plutonium came from an airborne pathway or is related to the HEPA filtration issues for Building 332. After finding a sample with 1.02 pCi/g in 1995, the laboratory has taken a large number of samples in 1998 to determine the degree of and extent of the plutonium levels, and to determine the source. The data establish that the elevated plutonium is generally confined to the southeast corner of the park, and is not found outside the park or above background levels at the adjacent school. Because of the nature of atmospheric dispersion, it is not possible that such a very limited distribution could have resulted from an airborne pathway, such as from a building release or re-suspension of contaminated soil by wind or human activity. The deposition pattern from an airborne pathway would most likely be cigar- or fan-shaped, with increasing concentrations extending back nearly to its source.

The laboratory considered whether there might have been an aquatic pathway. The park contains a filled, former channel of Arroyo Seco, which in the past received runoff water from LLNL. However, sampling along that channel between LLNL and the park, as well as within the park to the depth of the former channel, did not detect plutonium above 0.043 pCi/gm, which is near the upper range of fallout background.

The soil samples with plutonium above fallout levels are nearly all within the treewells and in the immediate proximity of ornamental trees planted in the 1970s. These soil samples also had higher level of metals. The laboratory believes that the plutonium must have come to the park in sewage sludge used as an amendment or mulch during and/or after planting of the trees. The City of Livermore treats sanitary sewage from the laboratory. The levels and locations of the plutonium and its association with metals strongly suggests that past releases of plutonium to the sewer about 1967 may have become mixed with the sludge at the Livermore Water Reclamation Plant.

The 1998 samples were collected under the observation of state and federal regulatory agencies, and about 10% of the samples were separately analyzed by three different certified analytical laboratories, with good agreement. The highest concentrations found in the 1998 sampling was 0.774 pCi/g, which is less than a third of the EPA residential screening level of 2.5 pCi/g, at which further assessments of health risk are suggested. The data can be found on the web at http://www-erd.llnl.gov/bigtrees/, and will be included in the 1998 SAER.

The EPA, California Department of Health Services, DTSC, and the Agency for Toxic Substances and Disease Registry all agree that the levels do not present a health hazard and that cleanup is not warranted. In view of the comprehensiveness of the sampling program and the low levels observed, no further sampling expeditions are planned.
Comment Code 1-13
Response:
   DOE disagrees that the proposed change in plutonium and uranium limits pose a significant increase in the operational impacts at LLNL. These changes are mostly in the allowable quantities of storage and not in the material at risk.

   See Common Issue 2.2, Proposed Changes in Administrative Limits.

Comment Code 1-14
Response:
   DOE is still committed to reducing the total amount of plutonium at LLNL to 200 kg when feasible. This issue was addressed in the 1992 EIS/EIR. However, DOE is still analyzing the issue of surplus plutonium disposition throughout the DOE complex.

   See also the response to comment 1-13, above.

Comment Code 1-15
Response:
   DOE disagrees that the proposed changes in uranium limits require the preparation of a new EIS/EIR. The need for enriched uranium (greater than 1% U-235) derives primarily from projected near-term projects involving the Dual Revalidation Program, a portion of the Fissile Materials Disposition (Immobilization) Program, and the Advanced Recovery Integrated Extraction System (ARIES) R&D work (a total of approximately 200 kg). Most of this need occurs in Fiscal Years 1999 and 2000 and most of this material will not remain at LLNL, but will be shipped to other DOE facilities prior to Fiscal Year 2002. The Dual Revalidation Program will assess the status of the LLNL and LANL stockpiled weapons. The Immobilization Program will evaluate the option for long-term disposition of surplus plutonium to immobilize it in either glass or ceramic for disposal in a geologic repository or for long-term safe storage. The ARIES project will recover plutonium from old weapons; the LLNL work will focus on pit disassembly and converting plutonium into an oxide form for disposition.

   A portion of the need for additional natural or depleted uranium (less than 1% U-235) stems mainly from the Fissile Materials Disposition (Immobilization) related R&D projects which will involve approximately 700 kg of natural or depleted uranium, most of which will be shipped to other DOE facilities by Fiscal Year 2003 as the R&D progresses.

   The additional portion of the need for natural or depleted uranium would derive from Mixed Oxide (MOX) Lead Test Assembly work currently being considered for implementation at LLNL in the Draft Surplus Plutonium Disposition EIS. As in the other projects, natural or depleted uranium would be brought in for the work, but would also be shipped out as work is incrementally completed, so that only an additional approximately 1000 kg would remain onsite.
after Fiscal Year 2003. The MOX Lead Test Assembly project at LLNL will fabricate nuclear fuel rods for nuclear power plants by using surplus weapon plutonium (PuO$_2$) and vendor supplied (UO$_2$); this process will convert surplus plutonium for peaceful applications.

As discussed in Section 6 of the SA, administrative limits are established to administratively control maximum quantities of radioactive materials in Buildings 332 and 334. These limits reflect program needs. Postulated accident analyses associated with radioactive materials are documented in the 1992 EIS/EIR (including this SA) and the SAR for each facility.

For Buildings 332 and 334, LLNL proposes to increase the current administrative limit for uranium from 300 kg (depleted, natural, and enriched) to 500 kg of enriched uranium and 3,000 kg of natural and depleted uranium. It is known that natural and depleted uranium do not pose significant hazards as compared to enriched uranium. There is considerable natural uranium in the LLNL region; the significant consideration is the increase in the administrative limit from 300 kg to 500 kg, since the majority of current inventory in Building 332 is enriched uranium. In addition, hazards resulting from a proposed Building 332 administrative limit of 3,000 kg of uranium with less than 1% enrichment of U-235 would be bounded by that from the Building 493 administrative limits for natural and depleted uranium of 80,000 kg (Table 4.15-1 of the 1992 EIS/EIR).

The proposal to increase the administrative limit for uranium does not change the restriction on the maximum material at risk imposed on workstation or glovebox operations. As an example, the quantity of fissile material, including uranium, will still be limited to 20 kg in each of laboratory rooms with the exception of the vaults. Only the amounts in storage will be increased, not the working inventories.

**Comment Code 1-16**
Response:
The “Green Book” is the program plan that describes DOE’s strategy to ensure high confidence in the safety and reliability of the nuclear weapons stockpile. As part of the weapons complex, LLNL continues to have a role in the stockpile stewardship program, confirmed in the ROD for the Stockpile Stewardship and Management Programmatic EIS (SSM PEIS). While DOE is charged with maintaining the capability for research and development of nuclear weapons, the Department of Defense has no requirements for new nuclear weapons and DOE is not developing new weapons.

**Comment Code 1-17**
Response:
The SA is correct in stating that the increased administrative limits for uranium are partly required to support the research and demonstration work for the MOX fuel project. This is part of DOE’s program for disposition of surplus plutonium as a result of the downsizing of the nuclear weapons stockpile. Also, the R&D-related work on the projects cited above is considered within
the scope of operations and potential impacts of ongoing programs at LLNL encompassed by the 1992 EIS with the exception of the Lead Test Assembly work, which is an alternative that is being considered by DOE for assignment to LLNL through the vehicle of a DOE Programmatic EIS currently in process. If LLNL is selected to perform this activity, an appropriate project-specific NEPA review will be conducted.

The increased administrative limit for uranium in Buildings 332 and 334 is not to support the Atomic Vapor Laser Isotope Separation (AVLIS) follow-on program.

Comment Code 1-18
Response:
DOE does not agree that there is "a plethora of new and/or significantly changed programs at LLNL since 1992." DOE considers NIF, AVLIS Integrated Process Demonstration (IPD) follow-on activities, subcritical nuclear tests, and the Advanced Design and Production Technology (ADAPT) work at LLNL to be projects that represent variations of existing programs at LLNL. AVLIS is a technology which can selectively separate the isotopes of uranium to enrich the product stream in U-235, thus generating a product that is commercially valuable for fabrication of fuel for nuclear power reactors; the IPD at LLNL is intended to support the confirmation of technical performance and validation of economic projections. The ADAPT Program is a DOE-wide effort to develop technologies for new processes and practices to enable cost-effective production of stockpile weapon components; the enduring stockpile, as well as workforce skills, will be maintained by a combination of repairs, refurbishments, and as needed replacements. Where there was a need for more project-specific impact analysis, it was provided.

Comment Code 1-19
Response:
DOE disagrees that "a new or, at a minimum, a supplemental EIS is required" due to "clearly significant new circumstances or information relevant to environmental concerns." DOE'S evaluation of the environmental impacts of LLNL operations, considering changes since 1992 and new projects or proposals to be implemented by 2002, indicate they would remain within the envelope of impacts established in the 1992 EIS/EIR.

See also the response to comments 1-1 and 1-2, above. Also, see Common Issue 2.1, Supplement Analysis Process, and Common Issue 2.2, Proposed Changes in Administrative Limits.
4.2 RESPONSE TO COMMENTS FROM DOCUMENT 2: LETTER DATED FEBRUARY 25, 1999, FROM U.S. ENRICHMENT CORPORATION (USEC)

Comment Code 2-1
Response:
Comment acknowledged.

Comment Code 2-2
Response:
Comment noted. Changes were incorporated as suggested by the commentor.

4.3 RESPONSES TO COMMENTS FROM DOCUMENT 3: PUBLIC BRIEFING, LIVERMORE, FEBRUARY 11, 1999, 2:00 P.M.

Comment Code 3-1
Response:
See the response to comment 1-1, above.

Comment Code 3-2
Response:
See the responses to comments 1-2 and 1-8, above.

Comment Code 3-3
Response:
See the response to comment 1-1, above. Also, see Common Issue 2.1, Supplement Analysis Process.

Comment Code 3-4
Response:
See the response to comments 1-3, 1-7, and 1-8, above.

Comment Code 3-5
Response:
See the response to comments 1-4 and 1-5, above.
Comment Code 3-6
Response:
See the response to comments 1-5, 1-6, and 1-9, above.

Comment Code 3-7
Response:
See the response to comment 1-7, above.

Comment Code 3-8
Response:
See the response to comment 1-8, above.

Comment Code 3-9
Response:
See the response to comment 1-9, above.

Comment Code 3-10
Response:
See Common Issue 2.1, Supplement Analysis Process, and Common Issue 2.2, Proposed Changes in Administrative Limits. Also, see the response to comments 1-1 and 1-19, above.

Comment Code 3-11
Response:
See Common Issue 2.3, Concerns With HEPA Filters, and Common Issue 2.2, Proposed Changes in Administrative Limits. Also, see the response to comments 1-1 and 1-19, above.

Comment Code 3-12
Response:
See the response to comments 1-15 and 1-16, above.

Comment Code 3-13
Response:
See the response to comments 1-15 and 1-16, above. Also, see Common Issue 2.3, Opposition to Nuclear Activities.
Comment Code 3-14
Response:
See the response to comment 1-15, above. The AVLIS project is not a driver for the increased limits; see also the response to comment 3-25, below.

Comment Code 3-15
Response:
See the response to comments 1-1 and 1-19, above. Also, see Common Issue 2.1, Supplement Analysis Process.

Comment Code 3-16
Response:
DOE believes that the current rate of processing plutonium or uranium to their oxide forms at LLNL does not exceed the rates analyzed in the 1992 EIS/EIR.

Several programmatic operations at LLNL generate quantities of plutonium and uranium that are in the form of chips, fines, or thin layers deposited by vapor deposition. Programmatic operations that generate these materials are nuclear material machining and grinding operations, casting operations, and vapor deposition (AVLIS and other programs). Both uranium and plutonium in the form of finely divided dust or chips, or in the form of thin metal sheets are potentially pyrophoric and can spontaneously ignite and burn in the presence of air or oxygen. The pyrophoricity is highly dependent on the fineness of the material, surface condition, temperature, humidity and atmospheric composition. The equipment that generates these fines or sheets is usually enclosed in either a glovebox, hood or vacuum chamber from which air or oxygen is (usually) excluded. Once generated, potentially pyrophoric fines or other metal forms are expeditiously transported in closed containers or enclosures to designated workstations (hoods or gloveboxes depending on the material and quantity) where they are oxidized. Finely divided quantities of fissile material (plutonium or enriched uranium) are oxidized in small batch sizes due to criticality safety requirements. The oxidation process is always carried out in a manner designed to minimize dispersal of the material. In the case of plutonium, the oxidation is usually carried out in small furnaces. Once oxidation is complete, the material is in a very stable chemical form and can then be packaged for storage or other disposition depending on the nature and value of the material. In all cases, the oxidation processes for these metals are carried out in enclosures equipped with redundant HEPA filtration to prevent any dispersal of material to the environment. In addition, care is taken to minimize the handling or any other step that would lead to dispersal of the material within the enclosures. Since long-term storage of pyrophoric, unoxidized fines would create a significantly greater hazard than the above oxidation process, oxidation is routinely used to render any potentially pyrophoric uranium or plutonium safe for storage, transport, or other disposition.
Plutonium and uranium in liquid solution are also converted to oxide when the value of the material or disposition pathway requires it. This is typically accomplished though precipitation of the material from solution, filtration, and then furnace oxidation.

In addition to the oxidation of programmatically generated plutonium or uranium fines, LLNL is also processing material in storage to meet the requirements of the DNFSB’s Recommendation 94-1.

See also the response to comment 3-51, below.

Comment Code 3-17
Response:
See the response to comment 3-16, above.

Comment Code 3-18
Response:
See Common Issue 2.4, Concerns With HEPA Filters. See also the response to comments 1-5 and 1-11, above.

Comment Code 3-19
Response:
DOE and LLNL will continue to manage wastes in accordance with the RODs (RODs have not yet been issued for LLW and LLMW) for the Waste Management Programmatic Environmental Impact Statement (WM PEIS) (DOE/EIS-0200-F) and the 1992 EIS/EIR. As discussed in Section 7 of this SA, LLNL has implemented a transuranic waste certification program to ensure that transuranic waste generated and packaged by LLNL can be certified for acceptance by WIPP. Transuranic waste will continue to be stored at LLNL until WIPP opens or another disposal option is identified by DOE.

Comment Code 3-20
Response:
See the response to comment 1-12, above.

Comment Code 3-21
Response:
DOE disagrees that the Plutonium Facility was shut down as a result of a recommendation by the DNFSB. In July 1997, LLNL placed Building 332 into “Standby Mode” under which programmatic operations (machining, processing, etc.) with fissile, radioactive, or hazardous materials were suspended while transfer, handling, sampling and/or storage of the
materials were allowed. Stringent compensatory measures (e.g., increased oversight and review of all activities) were imposed on any work to be performed. By October 1997, all activities associated with materials transfer were under close scrutiny; senior management approval was required before such activities could be conducted.

In February 1998, a resumption plan was developed by LLNL with concurrence by the DOE/OAK and input from the DNFSB. Upon approval of this process, Building 332 started preparation of the resumption activities. LLNL completed resumption activities by February 1999. In March 1999, the final phase of the resumption process is under review by a team of LLNL and DOE/OAK staff. Based on the assessment and recommendations from this team, LLNL senior management, with DOE/OAK concurrence, will determine whether Building 332 will resume normal operations.

Also, see the response to comments 1-5 and 1-11, above.

Comment Code 3-22
Response:
See the response to comment 1-15, above.

Comment Code 3-23
Response:
See the response to comment 3-60, below.

Comment Code 3-24
Response:
The cumulative impacts of continuing to operate LLNL and SNL-L are presented in section 9 of the SA, including the impacts of the proposed projects through 2002. Section 9 was revised to update water and electrical usage, and airborne radionuclide emissions. Based on the level of emissions of existing and planned facilities and proposals, the impacts from these operations would be below limits and guidelines and within the envelope of the 1992 EIS/EIR, and are not considered significant.

Comment Code 3-25
Response:
The AVLIS program is proceeding as planned. The scope of current work for the LLNL operation of the AVLIS project is covered by the Environmental Assessment (EA) for the AVLIS IPD, USEC/EA-96001, January 1996. This document was finalized by the U.S. Enrichment Corporation (USEC) in January 1996, under an interagency cooperative agreement that
designated USEC as the lead agency and DOE as the cooperating agency for all environmental reviews at the LLNL site.

Based on the analyses in the EA, both USEC and DOE determined that the IPD scope of work was not a major action significantly affecting the quality of the human environment, and that preparation of an Environmental Impact Statement was not required. USEC and DOE jointly issued a Finding of No Significant Impact (FONSI) for the AVLIS IPD. Copies of the EA and FONSI were transmitted to all appropriate regulatory agencies and to the Western States Legal Foundation and other interested parties.

The AVLIS project is in the process of conducting the IPD phase. These demonstrations are planned to be completed by the year 2000. After IPD, AVLIS uranium operations through 2002 would continue within the scope of existing NEPA documentation. Any future AVLIS work at LLNL that is outside of the scope of the January 1996 USEC EA or the 1992 EIS/EIR would be subject to additional NEPA reviews.

A copy of the Terascale Simulation Facility (TSF) Conceptual Design Report has been placed in the LLNL public reading room for review. The potential impacts of construction and operation of the TSF at LLNL are being analyzed in an EA currently being prepared. Preliminary projections of water and electrical energy usage are included in section 2.10 and section 9 of the SA.

See also the response to comment 1-15, above.

Comment Code 3-26
Response:
See the response to comments 1-1, 1-11, and 1-18, above.

Comment Code 3-27
Response:
The 1992 EIS/EIR was issued when DOE was considering reconfiguration of the nuclear weapons complex; thus, Chapter 1 of the EIS/EIR acknowledged that potential changes in missions and activities resulting from this reconfiguration would be reviewed against the EIS/EIR. Since the issuance of the 1992 EIS/EIR, DOE has prepared the SSM PEIS, addressing the downsizing of the nuclear weapons complex. The SSM PEIS addressed the impacts of proposed actions on various DOE sites, including LLNL. Appendices to the SSM PEIS include specific NEPA analyses of two such long-term projects that were proposed for LLNL: the Contained Firing Facility and NIF.

This SA has systematically reviewed the ongoing and projected activities at LLNL through the year 2002 to identify significant changes from the 1992 EIS/EIR. This process of
identifying changes is described in Section 1.4 of the SA. The key projects identified in this process were evaluated to see if their impacts were outside the envelope of consequences established in the 1992 EIS/EIR, and whether, if exceeded, these impacts were significant. The remainder of the SA presents the results of that evaluation. As a result of this review, DOE has concluded that no supplementation of the 1992 EIS/EIR is required. As other new projects are proposed in the future, their potential impacts will also be evaluated against the analyses and bounding impacts outlined in the 1992 EIS/EIR and, if necessary, separate NEPA reviews will be undertaken.

Also, see Common Issue 2.1, Supplement Analysis Process.

Comment Code 3-28
Response:
See the response to comment 3-27, above. Also, see Common Issue 2.3, Opposition to Nuclear Activities.

Comment Code 3-29
Response:
The NIF was evaluated in the 1992 EIS/EIR in the Proposed Action and Alternatives (section 3.0). Appendix A of the 1992 EIS/EIR discussed the proposed project and discussed risks to workers and the public from routine radiological operations and waste generation. Additionally, the SSM PEIS Project Specific Analysis for the NIF, Appendix I, SSM PEIS, September 1996, DOE/EIS-0236, evaluated the siting, construction and operation of the NIF. As indicated in Appendix I, “The purpose of this project-specific analysis is to assess the environmental impacts of construction and operation of NIF. This document describes the project and its purpose and need, considers site alternatives and project design options, delineates the affected environments, assesses potential environmental impacts, and suggests mitigation measures.”

As a result of the Memorandum Opinion and Order on Count II of the Second Amended Complaint issued by the U.S. District Court for the District of Columbia under Civil Action No 97-0936 (NRDC v. Peña), DOE is required, no later than January 1, 2004, (1) to determine whether any or all experiments using plutonium, other fissile materials, fissionable materials other than depleted uranium, lithium hydride, or a Neutron Multiplying assembly, shall be conducted in the NIF; or (2) prepare a Supplemental SSM PEIS, in accordance with DOE NEPA Regulation 10 CFR 1021.314, analyzing the reasonably foreseeable environmental impacts of such experiments.
Comment Code 3-30
Response:

The United States, consistent with Article VI of the Nuclear Nonproliferation Treaty, is continuing negotiations on the elimination of nuclear weapons. The U.S. Senate voted to give its advice and consent to ratification of the START II, which awaits action by the Russian Duma and the Federation Council to enter into force. In 1997, the President and President Yeltsin reached an understanding to begin negotiations on START III immediately after START II enters into force.

Meanwhile, however, a credible nuclear deterrent remains a cornerstone of U.S. national security policy. In President Clinton's September 22, 1997 letter transmitting the CTBT to the Senate for its advice and consent to ratification, he reiterated that “I consider the maintenance of a safe and reliable nuclear stockpile to be a supreme national interest of the United States.”

LLNL performs activities in support of DOE’s national security mission, which is assigned to DOE through Presidential Decision Directives and congressional actions. As required in 10 CFR 1021.330(d), the SA addresses the adequacy of the 1992 EIS/EIR for ongoing and projected activities through the year 2002. These activities reflect the current mission assignments to LLNL; Section 1.4 of the SA describes the process that DOE used to identify these activities and evaluate changes from the 1992 EIS/EIR. It is not reasonable for the SA to consider alternatives that are inconsistent with current national security policy.

Also, see Common Issue 2.3, Opposition to Nuclear Activities, and Common Issue 2.1, Supplement Analysis Process.

Comment Code 3-31
Response:

LLNL has published data on the distribution of plutonium in the local environment. These data come from the comprehensive environmental monitoring program where all potentially affected environmental media are monitored for plutonium, including air, water, soils, and individual facility potential emission points. The data are published each year in the SAER. In addition, LLNL conducts computer dispersion modeling, based on both actual and potential emissions and actual meteorological data collected from our on-site meteorological tower.

See also the response to comments 1-5 and 1-12, above, and Common Issue 2.4, Concerns With HEPA Filters.
Comment Code 3-32
Response:
The public dose from normal operations of LLNL and SNL-L, as well as the public dose from potential accidents evaluated in this SA take into account the densely populated area surrounding LLNL and SNL-L.

Very low levels of plutonium have been found in at least one area offsite. The plutonium is part of the legacy of past operations of LLNL. Practices that might have resulted in past plutonium releases to offsite areas are no longer allowed today. Cleanup of plutonium involves remediation activities and consultation with appropriate authorities under CERCLA.

Also, see Common Issue 2.4, Concerns With HEPA Filters.

Comment Code 3-33
Response:
See the response to comment 3-19, above.

Comment Code 3-34
Response:
DOE believes that continued operation of LLNL and SNL-L is within the impacts analyzed in the 1992 EIS/EIR and is consistent with the analyses present in the SSM PEIS, WM PEIS, and other NEPA documents.

Comment Code 3-35
Response:
The water use for TSF at LLNL is not as high as that projected for the Los Alamos National Laboratory. The total water use for LLNL in 2002, counting all users including NIF, is approximately the same amount projected for the year 2002 in the 1992 EIS/EIR. This projected amount can be provided with the current infrastructure and supply. Section 9 of the SA was revised to include the most recent cumulative water use projections for the TSF at LLNL.

Comment Code 3-36
Response:
The electrical use, including NIF and part of TSF, is expected to increase beyond levels originally projected in the 1992 EIS/EIR, but these increases would not have significant impacts since infrastructure and suppliers currently have the capacity to handle the projected use and peak load.
Comment Code 3-37
Response:
Now that the U.S. Enrichment Corporation has been privatized, DOE is responsible for NEPA reviews for new, future AVLIS operations at LLNL. However, the most recent NEPA document, Environmental Assessment for the AVLIS Integrated Process Demonstration, USEC/EA-96001, was completed by the USEC in January 1996. This EA was prepared under an interagency cooperative agreement that designated USEC as the lead agency and DOE as the cooperating agency. A FONSI was signed by USEC and DOE on January 3, 1996. As indicated in the FONSI, “On the basis of the analysis in the EA, the Proposed Action to conduct the Integrated Process Demonstration at LLNL would not constitute a major action significantly affecting the quality of the human environment. Therefore, an Environmental Impact Statement is not required.” Copies of these documents were provided to the public for review and comment during the review process.

Also, see the response to comment 3-25, above.

Comment Code 3-38
Response:
The MOX Lead Test Assembly work is currently being considered for implementation at LLNL in the Surplus Plutonium Disposition EIS. The MOX R&D work would require natural or depleted uranium which would be brought into Building 332, but would also be shipped out as work is incrementally completed, so that only an additional approximately 1000 kg would remain onsite after Fiscal Year 2003. This work would remain well within the proposed 3000 kg administrative limit for natural or depleted uranium for Building 332. The MOX program is expected to generate small quantities of transuranic waste (such as transuranic-contaminated glovebox gloves, bags, empty bottles, analytical waste, etc.) and LLW (such as wipes, gloves/shoe covers, decontamination wastewater, etc.). These wastes are not expected to significantly increase the waste streams at LLNL. The accident risk from performing the R&D activities of the MOX program will be within the envelope of accident impacts outlined within the 1992 EIS/EIR and this SA.

Comment Code 3-39
Response:
The program drivers for the higher tritium inventory limit are the Army Tritium Recovery/Recycle Project, Mound Tritium D&D support, and NIF target development and loading capability. The Army recycle work involves accepting shipments containing several grams (5 - 10 grams) of tritium, followed by a processing period, then transfer offsite. This sequence will occur repeatedly, occasionally with new shipments arriving before shipment of previous accumulations. An inventory of up to 20 grams could occasionally develop as a result of this activity, but only for the next 2 - 3 years when the Army change-out of tritium illumination devices will be the most intense. In assisting the Mound site with ongoing D&D activities it may become necessary to accept (and process for recycle) tritium storage vessels, beds or traps. The
shipments could contain as much as 5 grams. Finally, the NIF developmental target work will require an inventory of several (2 - 5) grams. Follow-on installation of a target loading station will add an additional 5 grams or more to the maximum inventory requirement, but not for 3 - 4 years. The combined tritium requirements of these programs shows that a 30 grams inventory limit is appropriate and would provide sufficient flexibility if carefully managed.

Comment Code 3-40
Response:
A biohazard level III facility is not currently planned for LLNL. Nevertheless, if programmatic needs change, appropriate NEPA and safety reviews would be undertaken before such a facility is established at LLNL.

Comment Code 3-41
Response:
There are no classified annexes to the 1992 EIS/EIR or the SA.

Comment Code 3-42
Response:
Natural and depleted uranium consist of several isotopes, each with its own specific activity and very long half-life. The dominant isotope is U-238 (99.3%). The U-235 isotope decays about 6 times faster than U-238. Uranium with an increased proportion of U-235 (enriched) is used in reactor fuels and weapons. All uranium is toxic, as well as radioactive, although at a low level compared to many other radionuclides. The real difference in the isotopes of uranium is the ability of U-235 to fission.

DOE and LLNL make every effort to produce fact sheets and disseminate information to the public and media that is accurate.

Comment Code 3-43
Response:
See Common Issue 2.4, Concerns With HEPA Filters.

Comment Code 3-44
Response:
See Common Issue 2.4, Concerns With HEPA Filters.
Comment Code 3-45
Response:
   See Common Issue 2.2, Proposed Changes in Administrative Limits.

Comment Code 3-46
Response:
   DOE agrees an analysis is necessary to support the need for increased administrative limits for operations proposed in the Superblock Complex. The SA explains the results of such analyses but relies on the supporting documentation contained in SARs.

Nuclear SARs are prepared in accordance with DOE Order 5480.23. Contractors who are responsible for the design, construction, or operation of DOE nuclear facilities are required to perform safety analysis that develops and evaluates the adequacy of the safety basis for each such facility. The safety basis to be analyzed includes management, design, construction, operation and engineering characteristics necessary to protect the public, workers, and the environment from the safety and health hazards posed by the nuclear facility.

SARs have been prepared for all the nuclear facilities contained within the Superblock Complex and for the Nondestructive Test Facility, Building 239. These documents contain the analyses that support continued safe operations within the facilities.

Comment Code 3-47
Response:
   The environmental justice section of the SA (section 8) has been revised to include Site 300. This site is located in a census block that is greater than the state average for minorities, but not for low income. Because impacts at Site 300 are within the bounds of 1992 EIS/EIR and are considered low or negligible, there would be no disproportionately high and adverse impacts near Site 300. The tritium-contaminated groundwater plume is within the site boundary and is receding due to ongoing remediation activities. This plume is not expected to affect onsite water users. See also the response to comment 1-7, above.

Comment Code 3-48
Response:
   DOE provides information in English about Site 300 to interested stakeholders. However, no information is prepared in Spanish at this time.
Comment Code 3-49
Response:
Mitigation measures consisted of alerting LLNL programs of exclusion zones around each nest site until the young had fledged and were independent. These mitigation measures were developed in conjunction with the U.S. Fish and Wildlife Service. There has been a steady increase in nesting activity at the Livermore Site over the last 4 years. In 1998, 6 nesting pairs of kites were successful in fledging 14 young. Additional information is provided in the LLNL SAERs.

Comment Code 3-50
Response:
See Common Issue 2.4, Concerns With HEPA Filters.

Comment Code 3-51
Response:
DOE proposes that the existing administrative limit of 700 kg for plutonium at Buildings 332 and 334 be retained, primarily to accommodate the plutonium already on site, which cannot be relocated to other DOE facilities, as described in section 1.4.2 of the SA. There are various physical and chemical forms in the laboratory, as expected in a research environment. In 1994 several cans containing plutonium ash residue (oxides) were found to be bulging. This resulted from internal pressure from gases slowly created by the plutonium irradiating organic materials (such as plastic bags) also in the sealed cans. This pressurization would not cause them to explode, but rather was of concern because a sudden release of pressure could have caused a puff of airborne particles. Nonetheless, building confinement filters would have prevented an environmental release. The cans were punctured to release any pressure, and they were over-packed in cans having a carbon frit-filtered vent. A program is underway to stabilize this plutonium residue so that it can be stored in sealed containers for many decades.

Comment Code 3-52
Response:
See the response to comment 3-25, above.

Comment Code 3-53
Response:
See the response to comment 3-25, above.
Comment Code 3-54
Response:
The cumulative impacts for site operations from 1998 to 2002 are addressed in Section 9 of this SA.

See also the response to comment 3-24, above.

Comment Code 3-55
Response:
The issue of water use by the site has been added to Section 9 on cumulative impacts, section 2.10 and section 9. Recent investigations on the effects of buried capacitors on groundwater are discussed in Section 2.4.

See Common Issue 2.1, Supplement Analysis Process. See also the response to comments 1-7 and 3-24, above.

Comment Code 3-56
Response:
LLNL work to support the subcritical testing program involves routine operations that are within the scope of its continuing mission activities as assessed in the 1992 EIS/EIR.

Comment Code 3-57
Response:
Current AVLIS activities were evaluated in Chapter 4 of the 1996 USEC EA. It was indicated that there would be releases to the environment from AVLIS operations. However, as indicated in the EA, programs have been established to minimize the amount of hazardous materials released to the environment. Regular monitoring is done as required under the Bay Area Air Quality Management District and the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations. Data are reported annually in LLNL’s NESHAP report to the EPA. The AVLIS emissions are expected to be well below the threshold levels and are within conditions specified in permits.

See also the response to comment 3-25, above.

Comment Code 3-58
Response:
The AVLIS operations have been, and will continue to be, within the envelope described in the 1996 USEC EA, the 1990 DOE AVLIS EA, and the 1992 EIS/EIR.
See also the responses to comments 3-25 and 3-56, above.

**Comment Code 3-59**

Response:

See also the response to comment 3-29, above.

**Comment Code 3-60**

Response:

DOE does not believe that the level of tritium in the grapes in the local area have significantly higher levels of tritium than those used for wines in the Livermore Valley. The nature of atmospheric dispersion is such that higher concentrations are expected closer to the release point. However, four times a small number is still a small number, and it does not correlate to potential health impacts.

The information on tritium in Livermore Valley wine is discussed in the 1992 EIS/EIR. The amounts of tritium in wine are determined using highly sophisticated technology (helium-3 mass spectrometry). Such a sensitive technique allows one to detect differences between Livermore wines and others, but use of commercially available techniques would likely not be able to detect tritium in any samples, including those from Livermore. The tritium-in-wine data are published and placed in proper context each year in the SAER. That is, the data are evaluated using accepted and conservative dose models that indicate that while Livermore Valley wines do indeed contain more tritium than wines from other areas, the impacts are negligible. The dose to a consumer, assuming a relatively high 2-liter-per-day wine consumption at the highest tritium level detected in Livermore wines during 1997, would have been 0.0099 mrem. This dose is very small in comparison with the 10 mrem per year public exposure limit mandated in EPA regulations for the air pathway. That 10 mrem is conservative relative to the 100 mrem recognized internationally as providing adequate public protection from all pathways. And it is low compared to other radiological doses to persons in the vicinity of LLNL, including doses from naturally occurring radon, uranium, medical x-rays, cosmic rays, etc.

It is generally true that when tritium usage at LLNL is reduced, there are fewer operational emissions, and therefore smaller amounts detected in the environment. However, attempts to mathematically correlate annual tritium emissions with the measured concentrations of tritium in Livermore Valley wines have been unsuccessful. Although tritium rapidly diffuses in air and slowly permeates through most materials, the conversion rate of elemental gaseous tritium to a water form is relatively slow. Canadian field experiments show that the atmospheric conversion is on the order of 0.5% to 1% per hour (article by R. M. Brown, et al, in Health Physics 58:171-181, 1990).

While it is true that nearly a million curies of tritium have been released from LLNL over its history, it should be noted that over 700,000 of these curies were released in two events (1965 and 1970) in the form of elemental tritium gas. Tritium gas is known to have a significantly
lower dose impact than tritiated water or water vapor; in fact, the dose is 25,000 times lower from exposure to tritium gas. Much of the remainder of the releases (about 50%) were also tritium gas releases. Therefore, the dose consequences of most of the tritium releases from LLNL have been negligible. In addition, LLNL’s environmental monitoring program measures tritium impacts in all affected environmental media and reports those data annually in the SAER.

The potential for tritium to be released from routine NIF operations has been assessed in its project-specific environmental analysis at Appendix I of the DOE SSM PEIS. The amount of incremental tritium emissions from NIF will be much smaller than present emissions from the Laboratory, and thus have no additional environmental or public health effect. Continuous stack monitoring will be installed at NIF.

See also, the response to comment 3-29, above.

Comment Code 3-61
Response:
See the response to comment 3-29, above.

Comment Code 3-62
Response:
The intent of the programmatic environmental document (such as the 1992 EIS/EIR) is to provide an impact analysis baseline that bounds the impacts from ongoing and future proposed projects. Most of the larger new facilities at LLNL that have been completed, are underway, or are proposed for construction by year 2002 were mentioned as proposed projects in the 1992 EIS/EIR. Although these facilities were mentioned as proposed projects, their specific, detailed design and process information were not available to conduct an environmental analysis at the time of completion of the 1992 EIS/EIR. As their design information became available, project-specific NEPA analyses were completed as committed in the 1992 EIS/EIR. The potential impacts of those new project-specific NEPA analyses (as noted in Table 1.1 of the SA) were compared with the bounding accident impact projections contained in the programmatic 1992 EIS/EIR. Completion of these projects should yield no significant unmitigated environmental effects and the 1992 EIS/EIR still remains adequate.

Comment Code 3-63
Response:
The probability of one in one million per year is a generally accepted cut-off point used in determining when an event is considered credible (i.e., higher than one in one million per year) and subject to analysis, or is considered incredible (i.e., less than one in one million per year) and typically not analyzed.
4.4 RESPONSES TO COMMENTS FROM DOCUMENT 4: PUBLIC BRIEFING, LIVERMORE, FEBRUARY 11, 1999, 6:00 P.M.

Comment Code 4-1
Response:
Eighty tons of uranium is required for the AVLIS IPD series work outlined in the 1996 USEC EA. This quantity was also the administrative limit for the facility that was analyzed in the 1992 EIS/EIR.

Comment Code 4-2
Response:
See the response to comment 1-15, above.

Comment Code 4-3
Response:
DOE, in its NEPA reviews, must consider sites that are reasonable alternatives to perform the proposed action or work. Typically, only a few sites, such as LLNL, have the infrastructure and technical expertise to carry out the proposed work. DOE selects sites based on the lack of significant environmental impacts, as well as other factors such as costs, availability of facilities, technical expertise, etc.

Also, see Common Issue 2.3, Opposition to Nuclear Activities, and Common Issue 2.4, Concern with HEPA Filters.

Comment Code 4-4
Response:
See Common Issue 2.3, Opposition to Nuclear Activities. Also, see the response to comment 4-3, above.

Comment Code 4-5
Response:
See Common Issue 2.3, Opposition to Nuclear Activities. Also, see the response to comment 4-3, above.
Comment Code 4-6
Response:

Comment Code 4-7
Response:
See Common Issue 2.3, Opposition to Nuclear Activities. Also, see the response to comment 4-3, above.

Comment Code 4-8
Response:
See Common Issue 2.3, Opposition to Nuclear Activities. Also, see the response to comment 4-3, above.

Comment Code 4-9
Response:
See Common Issue 2.3, Opposition to Nuclear Activities. Also, see the response to comment 4-3, above.

Comment Code 4-10
Response:
This SA evaluates the increase in uranium limit for Buildings 332 and 334 from 300 kg (all types) to 3,500 kg (all types). Uranium is very dense (specific gravity about 19). About 7 cubic feet of uranium metals would weigh about 3200 kg. This is larger than a basketball: about the size of a microwave oven. Less than 1% enriched uranium metal is not highly radioactive and is used in a number of applications such as boat ballast, counterweights, and shielding for tanks and other military vehicles. See also the response to comment 1-15, above.

Also, see Common Issue 2.2, Proposed Changes in Administrative Limits.

Comment Code 4-11
Response:
The increased quantities of uranium would be stored locally at LLNL.
Comment Code 4-12
Response:
DOE analyzes all possible accident scenarios and screens out those considered incredible. For the vault, the series of events have a combined probability so low that it is considered incredible, that is, has a chance of less than one in one million per year of operations. In the case of the vault, the materials are in a sealed hardened source designed to withstand extreme events, such as a ground acceleration greater than 0.8g. There is no combustible material in the vault to feed a fire, and the vault is for all purposes impenetrable to external challenges. As a result of this, for a variety of scenarios, the probability of the material being released is calculated to be less than one in one million per year of operation. The possibility that an accident could release material from the vault to the environment is considered an incredible event or extremely improbable.

Comment Code 4-13
Response:
LLNL conducts a comprehensive environmental monitoring program that samples all parts of the environment to determine the impacts of LLNL operations on the environment and the public. The program includes direct monitoring of both Laboratory emissions (stacks and sewer) as well as surveillance monitoring of the environment surrounding the Laboratory. State-of-the-art monitoring equipment and analytical techniques are used to measure concentrations of potential pollutants at extremely low levels. The program has been evaluated by qualified peers and found to be extremely robust and comparable to any in the country or world. The results of the environmental monitoring program are published every year in the SAER.

See the response to comments 1-2, 1-4, 1-7, 1-12, 3-31, and 3-60. Also, see Common Issue 2.4, Concerns With HEPA Filters.

Comment Code 4-14
Response:
DOE does not believe that the continued operation of LLNL and SNL-L will pose a significant impact to the public or the environment.

See the response to comments 1-2, 1-3, 1-4, 1-5, 1-7, 1-8, and 1-12. Also, see Common Issue 2.4, Concerns With HEPA Filters.

Comment Code 4-15
Response:
See the response to comment 4-3, above. Also, see Common Issue 2.3, Opposition to Nuclear Activities, above.
Comment Code 4-16
Response:

The units have been changed to be consistent; the correct unit is one chance in one million per year. DOE has decided to continue the use of curies in the SA and not include the equivalent units in becquerels or disintegrations per second for ease of presentation.

Comment Code 4-17
Response:

See Common Issue 2.1 Supplement Analysis Process.

Comment Code 4-18
Response:

DOE has several programs for reporting incidents and accidents. The CAIRS system collects the widest range of data. CAIRS is a database used to collect and analyze DOE and DOE contractor reports of injuries, illnesses, and other accidents that occur during DOE operations in accordance with DOE Order 231.1. CAIRS reporting is managed by the Office of Occupational Safety & Health Policy (EH-51). Access to the CAIRS system is available through the internet at “www.tis.eh.doe.gov.”

Another level of reporting is covered under the Occurrence Reporting and Processing System (ORPS). DOE’s ORPS Program provides timely notification to the DOE complex of events that could adversely affect: public or DOE worker health and safety, the environment, national security, DOE’s safeguards and security interests, functioning of DOE facilities, etc. DOE analyzes aggregate occurrence information for general implications and operational improvements. The ORPS Program and its data system are described in DOE Order 232.1A and its associated Manual, DOE Manual 232.1-1A. DOE/OAK final occurrence reports are available to the public through the Energy Information Center or the Office of Public Affairs located at 1301 Clay Street, Oakland, California. These offices can be contacted for any information pertaining to injuries, illnesses or accidents involving LLNL.

Significant occurrences or accidents are analyzed in investigations termed Type “A” and Type “B.” A report is done on each of these accidents and is available to the public through the internet at “www.tis.eh.doe.gov.” Specific information pertaining to DOE/OAK accidents is available through the Energy Information Center or the Office of Public Affairs.

DOE is not aware of any releases or spills to the environment associated with a 5.5 earthquake in the recent past. There was a 5.5 seismic event in 1980 at Livermore. Several upgrades were made to the Laboratory’s infrastructure as a result of that event. The analysis in the 1992 EIS/EIR incorporates data and changes to facilities from the 1980 earthquake.
Comment Code 4-19
Response:
DOE and LLNL would report any accidents with the potential to impact the public or the environment, even if it occurred as a result of classified activities.

See also the response to comment 4-18, above.

Comment Code 4-20
Response:
See the response to comment 4-18, above.

Comment Code 4-21
Response:
The only criticality incident in the last four decades at LLNL occurred on March 26, 1963, in Building 261, during a criticality experiment. The occurrence of an excursion of $4 \times 10^{17}$ fissions was attributed to mechanical failure during the experiment. Exposure to personnel in or near the building was low and did not exceed 0.12 rem. Only small amounts of short-lived gaseous fission products were released from the experiment room.

Comment Code 4-22
Response:
DOE acknowledges that nearly a million curies of tritium have been released from LLNL over its history. However, it should be noted that over 700,000 of these curies were released in two events (1965 and 1970) in the form of elemental tritium gas. Tritium gas is known to have a significantly lower dose impact than tritiated water or water vapor. In fact, the dose is 25,000 times lower from exposure to tritium gas. Much of the remainder of the releases (about 50%) were also tritium gas releases.

The tritium in vegetation consists of that in “free water” and that which is in an organic molecules. In the 1997 SAER, LLNL included a discussion of organically-bound tritium doses, assuming that entire plants were made up of organically-bound tritium, and showed that the doses were negligible. Although the potential damage to human tissue of an organically-bound tritium molecule may be a factor of 3 to 5 higher than for a molecule in free water form, this organic portion is so small that that it is not considered a significant contributing factor. In the calculations of public dose, the assumptions as to intake of vegetation are very conservative (overestimated) that they outweigh any organically-bound tritium that could be separately measured. The direct monitoring of organically-bound tritium is difficult and expensive, and would not enhance public protection.
Comment Code 4-23
Response:

See the response to comment 1-15, above.

Comment Code 4-24
Response:

The SA (Section 6) notes that the methodology for assessing accidents used in the 1992 EIS/EIR employed a consequence assessment and not a risk assessment methodology. Consequence assessment approaches assume that the triggering event (e.g., earthquake) and resulting release of hazardous material have a 100% probability of occurring. Consequences (e.g., dose, exposure, and health effects) are therefore calculated as if the event and release occurred. The frequency of handling or use of a material would not factor into an approach employing a consequence assessment.

The probability of an accident that releases material to the environment is related to a limited extent to the number of operations with the material. Accidents also occur as a result of hardware failure (e.g., valves, fans) and building fires and natural phenomena (e.g., earthquakes). These accidents are independent of the operations, and the amount released and their consequences depend greatly on the amount of “material at risk” to the accident. The amount at risk is controlled by administrative limits for the amount of material in a container, glovebox, workstation, room, etc. Because of this, neither the probability, size of the release, nor the consequences increase proportionally with the increased inventory in the facility. In the 1992 EIS/EIR, and therefore in this SA, the consequences of “bounding accidents” are presented. Although the administrative limits are proposed to be raised, the bounding accidents in the 1992 EIS/EIS have been found by this SA to still apply.

Comment Code 4-25
Response:

There was one air plutonium release from the Plutonium Facility at LLNL in 1980 as a result of an incorrect changeout and sealing of HEPA filters. The amount released was monitored at the time. Ongoing, continuous monitoring of the plutonium facility, using methods sanctioned by the US Environmental Protection Agency, indicates that the HEPA filter systems are performing as intended.

DOE believes that worker safety and health monitoring is within established guidelines for exiting radioactive areas.

Also, see Common Issue 2.4, Concerns With HEPA Filters, above.
Comment Code 4-26
Response:

There was a release of plutonium to the sanitary sewer in 1967 at LLNL. Both the amounts of plutonium released and the resulting concentrations in the sludge at the Livermore Water Reclamation Plant (LWRP) have been estimated and discussed in the SAERs and the 1992 EIS/EIR. Although knowledge about where the affected sludge was ultimately utilized is uncertain, experiments using the contaminated sludge to grow a vegetable garden were conducted and the results published in the early 1970s; these experiments indicated there was no cause for health concern from the plutonium in the sludge. Furthermore, gardens of Laboratory employees who received contaminated sludge from the LWRP were sampled and these data also indicate no cause for public health concern. It is likely that the same is true regardless where this material was used. The nature and magnitude of the contamination does not warrant any cause for public health concern.

Also, see the response to comment 1-12, above.