

# Livermore Lab Health and Environmental CONSEQUENCES

## Plutonium Soil Contamination

Livermore Lab released weapons grade plutonium to the city sewage plant for decades from about 1958 to 1974. Reports indicate that plutonium soil contamination may be spread among Livermore households due to the distribution of plutonium laced sludge. Residents were encouraged to come pick up the free sludge for lawns and gardens. In November 2002, the California Department of Health Services issued a study concluding that the sludge posed an unknown level of health risk. The agency recommended further sampling and research. Weapons grade plutonium has a radioactive half-life of 24,000 years. Plutonium is extremely poisonous. Death can result if a minute quantity enters the body; one ten thousandth of a gram inhaled can cause cancer. Other negative health outcomes, including suppressed immune system, have been associated with plutonium exposure.

## Groundwater

There is severe soil and groundwater contamination at the Livermore Lab main site, as well as its site 300 testing range in nearby Tracy. Both locations are on the Environmental Protection Agency's "Superfund" list of the most contaminated sites in the country due to the toxic stew of pollutants ranging from chemical solvents to radioactive debris. If groundwater is not cleaned up, the EPA estimates cancer risks in Livermore as high as one in every thousand residents. The EPA's estimated cancer risk for one of the contaminated areas at site 300 tops one in one hundred. Clearly, the utmost effort must be made to clean up polluted soil and groundwater at Livermore Lab. Tri-Valley CARES is working to ensure that the Department of Energy adheres to legally binding cleanup agreements and standards that will protect our health and communities.

## Childhood Cancer Study

In 1995, the California Department of Health Services' investigation of childhood cancer incidents among Livermore children and young adults found 6 times the incidence of malignant melanoma in children and young adults born in Livermore, and elevated levels of brain cancer in children born in Livermore in the 1960's.

## Tritium Releases

Since the 1960's, the Livermore Lab has released approximately one million curies of radiation into the environment, roughly equivalent to the amount of radiation deposited by the US atomic bombing of Hiroshima. Much of the airborne contamination has been tritium, which is a radioactive form of hydrogen. Tritium has a radioactive half-life of 12 years and has been associated with a wide range of health problems, from cancer to birth defects to reduced sperm count in males. Lab documents disclosed that Livermore Valley wines have contained up to 4 times the amount of tritium of other California wines. Rainfall at the Lab has been found to contain tritium concentrations seven times higher than the state and federal maximum limit for drinking water. Basically, that is radioactive waste falling from the sky.

## **Worker Exposures**

Over 3000 claims have been filed by the Livermore Lab employees, former employees, and employee family members for compensation due to the illness or death caused by on the job exposure to radiation, beryllium, and a myriad of other poisonous substances. In spite of these dire health problems, the federal compensation program is saddled by bureaucratic roadblocks. Many people die before receiving any medical or wage compensation benefits. Further, workers tell us that exposures continue up to the present day. Tri-Valley CAREs facilitates a support group for workers made ill by on the job exposures.

## **Stockpile Stewardship**

Due to continuous nuclear weapons development at Livermore Lab, new releases of plutonium, tritium, and other toxic substances add to the burden of past releases into the community. New and modified nuclear weapons design, testing, and deployment is part of a current US nuclear policy, which is deceptively named "stockpile stewardship." The US is spending approximately \$6.5 billion each year on this program. This is more than was spent per year during the cold war.

## **NIF's Radioactive Materials**

Livermore Lab announced that it completed construction of a giant megalaser in 2009. It's called the National Ignition Facility (NIF). What most people do not realize is that NIF experiments will use plutonium, the radioactive core in nuclear bombs.

NIF will also use radioactive tritium. NIF's deuterium-tritium targets will be produced at the Lab. These activities will result in airborne contamination and nuclear waste. NIF's mission is to train the next generation of nuclear bomb designers. Only 15% of its experiments will be available for non-weapons related purposes, according to the Government Accountability Office and DOE. Tri-Valley CAREs believes that Livermore should be turned into a "green lab" focused on civilian science projects like global warming and non polluting energy research.

## **Mixing Bugs and Bombs**

This plan mixes bugs and bombs at Livermore Lab. It calls for collocating an advanced biowarfare agent research facility with nuclear weapons activities in a classified area at Livermore Lab. The DOE proposes genetic modification and aerosolization (spraying) tests with live anthrax, botulism, plague, and other deadly pathogens on site at Livermore. Tri-Valley CAREs has filed litigation in federal court to stop DOE from operating this new facility without a thorough environmental review and public hearings. Tri-Valley CAREs is committed to preventing new threats to our health as well as ensuring a complete cleanup of existing contamination.

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