Depleted Uranium at LANL

What is Depleted Uranium (DU)?

DU is a byproduct of the enrichment process of naturally occurring uranium for nuclear reactors and nuclear weapons. Natural uranium is processed and concentrated through enrichment.[1] DU emits 60% as much alpha radiation, 85% as much gamma radiation and about the same beta radiation as naturally occurring uranium.[2]

DU is a dense metal. It is so strong that it can penetrate steel and bunkers and has been used around the world in new weapons. DU is currently used in bullets, armor and missiles. Furthermore, being the byproduct of uranium enrichment, it is essentially a waste. DU is available in abundant amounts and virtually free in cost. DU can ignite upon impact when used at temperatures exceeding 600 degrees Celsius.[3] Upon impact, DU aerosolizes into a plume of fine particles. Some of those particles have the potential to catch fire in air.[4] "DU particles can travel at least twenty-five miles on air currents, and can re-suspend into the air years later when disturbed by wind, people, or machinery."[5]

Health Effects of DU:

The health effects of DU have been mired in a serious political debate and require more research by independent scientists and experts. Below are a variety of opinions on the health effects of DU:

***Military Toxics Project Report:**
"Tiny dust-like DU particles- formed when shells impact and burn- can be inhaled and lodge in the lungs, bones, and kidneys, where they damage cells and organs through radiation or toxic effects. Human and animal studies have linked DU exposure and damage to the kidneys, immune, nervous, respiratory, and reproductive systems, and to cancer and genetic mutation."[6]

***World Health Organization:**
"…because DU is only weakly radioactive, very large amounts of dust (on the order of grams) would have to be inhaled for the additional risk of lung cancer to be detectable in an exposed group. Risks for other radiation-induced cancers, including leukemia, are considered to be very much lower than for lung cancer."[7]

***U.S. Department of Energy Office of Environmental Management:** "… if allowed to enter the body, depleted uranium, like natural uranium, has the potential for both chemical and radiological toxicity with the two important target organs being the kidneys and the lungs. The most likely pathways by which uranium could enter the body are ingestion and inhalation. The relative contribution of each pathway to the total uptake into the body depends on the physical and chemical nature of the uranium, as well as the level and duration of exposure."[8]

Why Is This Important To YOU?

For over 30 years, LANL had been conducting up to 383 open burn and open detonation (OB/OD) activities per year under a state permitting process that did not require an opportunity for public participation at 3 technical sites, TA-11, TA-16 and TA-36. These activities include 1,584 lbs. of DU, 3,717 lbs. of high explosives (HE), 91,000 lbs. of wood, and 800 gallons of diesel or jet fuel. In 2003, CCNS supported the New Mexico Environment Department Air Quality Bureau (AQB) before the New Mexico Environment Improvement Board to ensure that there was an opportunity for public comment on these permits.

LANL states that the levels of these contaminants released to air, water and soil are so small that they are virtually insignificant to health and environmental impact. However, the closest air monitoring stations to these sites were recently shut down by LANL despite the fact that one monitor measured the highest reading of DU on-site.

CCNS is extremely concerned about the accumulation and impacts of these toxics over the last 63 years in our bodies and environment. In the 1979 Final Environmental Impact Statement for LANL, it states "[a]n estimated 100,000 kg (220,000 lb.) of natural and depleted uranium have been used in dynamic experiments during the history of [LANL]."[9]

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[1] World Health Organization fact sheet No. 257. Depleted Uranium. Revised January 2003. http://www.who.int/mediacentre/factsheets/fs257/en/ Retrieved on September 8, 2005.
International Atomic Energy Agency. Depleted Uranium. http://www.iaea.org/NewsCenter/Features/DU/du_qaa.shtml Retrieved on September 8, 2005.
[2]Military Toxics Project. June 2003. "Depleted Uranium Munitions: Nuclear Waste as a Weapon. http://www.miltoxproj.org/DU%20Fact%20Sheet.htm Retrieved September 8, 2005.
[3] World Health Organization fact sheet No. 257. Depleted Uranium. Revised January 2003.
[4] International Atomic Energy Agency. Depleted Uranium.
[5] Military Toxics Project. June 2003. "Depleted Uranium Munitions: Nuclear Waste as a Weapon.
[6] Id.

[7] World Health Organization fact sheet No. 257. Depleted Uranium. Revised January 2003.
[8] U.S. Department of Energy Office of Environmental Management. Depleted Uranium Health Effects. http://web.ead.anl.gov/uranium/guide/depletedu/health/index.cfm Retrieved September 9, 2005.
[9] Final Environmental Impact Statement, Los Alamos Scientific Laboratory Site, U.S Department of Energy, 1979, p. 4-43.

If we add the activities at TA-11, TA-16 and TA-36 from 1970 to present, LANL has potentially exploded and burned 55,440 lbs. of DU, 130,095 lbs. of HE, 28,000 gallons of diesel fuel and over 3 million lbs. of wood. The accumulated numbers of these activities over the years are staggering. That would make the potential release of DU in the history of LANL at over 275,000 lbs., or over 135 tons. Furthermore, these activities have been allowed to occur *without* clean up because the sites are still functioning.

Let's compare some numbers to give some perspective to this situation.

It is reported that DU munitions used by the United States and the United Kingdom in warfare are:

*286,233 kg (629,712 lbs.) of DU in the First Gulf War in Iraq and Kuwait in 1991,

*3,260 kg (7,172 lbs.) in Bosnia in 1994-1995,

*9,450 kg (20,790 lbs.) of DU in Kosovo in 1999, and

*an estimated 118,000 to 136,000 kg (259,600 to 299,200 lbs.) as reported in 2004 in the current Iraq war. [10]

How does this compare to Los Alamos? In LANL's 1999 Site-Wide Environmental Impact Statement it states "(c)ontaminants such as DU, beryllium, lead, copper, and others are produced at firing sites and are of potential concern for deposition in sediments and soils."[11]

DU and HE does NOT just disappear. As stated above, DU aerosolizes and transforms into a plume of fine dust that travels easily and settles. The World Health Organization reports that DU "…contamination normally becomes dispersed into the wider natural environment by wind and rain."[12] In New Mexico we experience high winds, monsoon rains and snowmelt. If the accumulated DU settles on the open ground and can be picked up by the wind on any given day… it has the potential to travel to any area within 26 miles of the Pajarito Plateau. That's right… land grants, pueblos, the state capitol and everywhere in between.

In 2004, open burning of your own backyard trash was deemed illegal in the State of New Mexico because of environmental and health impacts. The NMED stated that "(b)ackyard trash burning is far more harmful to our health than previously thought. The pollutants produced by backyard trash burning can increase the risk of heart disease, aggravate respiratory ailments such as asthma and emphysema, and cause rashes, nausea, or headaches."[13] Is it not equally or more hazardous to the environment and to our health to allow LANL to openly burn and detonate toxics? If New Mexicans must adhere to regulations against burning trash, shouldn't LANL also have to adhere to regulations that would forbid them to continue these activities and furthermore conduct an extensive clean up?

Action!

Legal Means:

For one of the first times since OB/OD operations began at LANL, the public has the opportunity to participate in the permitting process. Recently, the New Mexico Environment Department (NMED) issued two new permits for the continuation of OB/OD at three sites. CCNS, Tewa Women United and the Embudo Valley Environmental Monitoring Group have appealed the decision of these permits to the New Mexico Environmental Improvement Board. We have been granted a formal public hearing on December 6th and 7th to address these permits. We are currently researching the best possible medical and technical experts to testify at the hearing.

Educational Opportunities:

We have launched an educational campaign for the public including presentations, media facets, panel discussions and conference opportunities in order to engage the broadest constituency of people possible.

The Democratic Process:

In addition, we have launched a huge postcard campaign in preparation for the hearings. Postcards allow for the public to engage in the dialog of these issues and express their objections and concerns to decision makers. Furthermore, postcards represent one of the oldest and strongest democratic processes. Our postcard campaigns have proven immensely effective in demonstrating social expression of issues.

You can be involved in this process. You can join in the above initiatives. Your voice makes a difference. You can volunteer to help CCNS, join our email list, or mailings to keep posted on upcoming events. Network within your circle of friends and family. Activate the grassroots! True change begins from the root up.

[10] Fahey, Dan. The Emergence and Decline of the Debate Over Depleted Uranium Munitions 1991-2004, (2004). Page 8

[11] Site-Wide Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory, Volume I, Main Report, U.S Department of Energy, 1999, p. 5-41.

[12] World Health Organization fact sheet No. 257. Depleted Uranium. Revised January 2003.

[13] New Mexico Environment Department Air Quality Bureau. http://www.nmenv.state.nm.us/aqb/projects/openburn/openburning_index.html Retrieved September 9, 2005.