

Plutonium warhead factory: it's about new missiles, an arms race, greed, & domination

More warheads would increase threats, keep military spending high, and maintain "unwarranted influence"

As discussed last week (<https://lasg.org/advertising/SFR-ad-13Dec2023.pdf>), a plutonium warhead core ("pit") factory is under construction at Los Alamos National Laboratory (LANL). At \$20 billion, it is the largest capital project in New Mexico history — but it has nothing to do with our welfare.

It is already having significant local impacts on workforce availability, housing costs, traffic, and nuclear waste generation, cleanup, and disposal.

This giant project has nothing at all to do with "maintaining a nuclear deterrent." Instead, it has everything to do with enabling an arms race in which the U.S. cannot possibly keep up, increasing military spending, and maintaining nuclear and military dominance over other government priorities.

\$2+ trillion for nuclear weapons: assuring destruction forever

The U.S. has a huge nuclear arsenal about 5,244 warheads and bombs, of which about 3,708 are deployed or ready to deploy. They are deployed on ballistic missile submarines, on bombers, and on intercontinental ballistic missiles (ICBM) in underground silos in 5 states (CO, NE, WY, MT, & ND).

Every warhead, bomb, delivery system, and factory for nuclear warheads is being replaced or upgraded while also continuing existing deployments, at a 30-year cost of more than \$2 trillion, including environmental cleanup.

Every warhead and bomb has a pit. They last a long time but not forever. For now, warheads with existing pits can be modified and upgraded, but no all-new warheads can be produced until the U.S. has an operating pit factory.

Four attempts to build a LANL factory have failed. Local citizen opposition played a large role in at least two of these failures. Past efforts in Texas and South Carolina also failed.

LANL's plutonium facility is too old and crowded to undertake pit manufacturing alone, if at all. It is 9 years away from completing its transformation into a factory, although some pits are likely to be made before then.

A safer, larger, and newer pit factory in South Carolina, also under construction, aims to begin production by 2036.

Multiple independently-targeted warheads from a single missile



Missile madness: more accurate warheads & more of them

Until at least 2036, LANL's pits are needed to build a new variety of warhead, to be deployed on a very expensive new ICBM, called "Sentinel." The missiles, plus refurbishing the silos, may cost as much as \$150 billion or more — official estimates are rising very fast.

The explosive yield of this new warhead would be roughly 300 kilotons (kt), 20 times that of the Hiroshima bomb. Thirty-three of them would release the same energy as all the explosives used in World War II.

LANL pit production would jump-start the production of these warheads. It is not needed for maintaining any existing warheads, nor would it be used for that.

The Air Force already has about 540 modern, very accurate, long-lived warheads for its Sentinel missiles, more than enough for all 450 of them. What LANL pit production would provide is the means to start deploying up to 3 independently-targeted new warheads on each missile, and to start doing so in the early 2030s.

At present, only half of the 400 deployed U.S. ICBMs can carry modern, very accurate warheads, at one warhead per missile. The other 200 missiles can carry up to 3 warheads but they are older, far less accurate, can't be upgraded, and will be retired.

Augmented with new warheads built with new pits, the Sentinel fleet could carry up to 1,350 highly accurate warheads, more than tripling the "hard-target kill" capability of current U.S. ICBMs.

One bomb would ruin your whole day

Even experts can be in denial about how destructive nuclear weapons are. As the graphic above shows, one 800-kiloton (kt) Russian warhead detonated at LANL at ground level would not only destroy all the lab and town, but also kill most people downwind in Santa Fe or Taos or wherever the wind is blowing.

The same 800-kiloton warhead, detonated above a city during average weather, would simultaneously ignite fires over an area of 100 square miles or more. These fires would combine to form a gigantic nuclear firestorm. No living thing in the fire zone would survive.

A nuclear war involving cities would loft gigantic amounts of soot into the stratosphere, above the weather, blocking the sun and lowering temperatures to far below those necessary for agriculture, for many years. Oxides of nitrogen created by the explosions would destroy the ozone layer, blinding humans and animals. Most people and animals would die. Ecosystems would die.

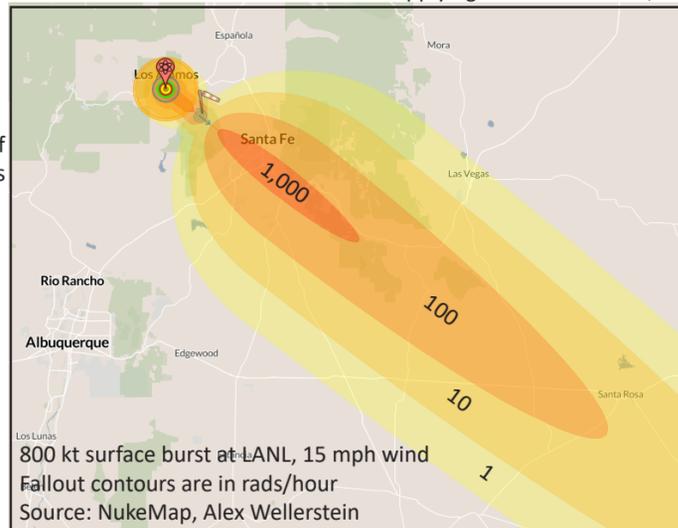
Just a handful of nuclear weapons detonated at high altitude would be sufficient to take out the entire U.S. electric grid, which likely could not be repaired for a year or longer. Most critical national infrastructure would be inoperable including ground, sea, and air transportation, fuel and food distribution, water and sanitation systems, telecommunication and banking, and the safety systems at nuclear power plants. Few would survive.

For these reasons and others, nuclear weapons are illegal

The International Court of Justice (ICJ), in a landmark 1996 decision, unanimously determined that the U.S., as well as other nuclear states, has a positive obligation under international law to negotiate complete nuclear disarmament.

This obligation is largely based on the Treaty on the Nonproliferation of Nuclear Weapons (NPT), which, under the U.S. Constitution, is part of "the supreme Law of the Land."

While condemning the threat or use of nuclear weapons as virtually impossible to reconcile with the laws applying to armed conflict, the ICJ declined to rule whether



800 kt surface burst at LANL, 15 mph wind
Fallout contours are in rads/hour
Source: NukeMap, Alex Wellerstein

there might be some occasions where the use of nuclear weapons *might* be legal, if (and only if) the very existence of a country was at risk.

These legal constraints and obligations were enshrined in a resolution passed by the City of Santa Fe in 2005 (https://lasg.org/MPF2/SantaFeResolution_2005-39.pdf).

Staggering opportunity costs

To illustrate the costs involved, the \$20 billion required to start LANL pit production

would be enough, at \$4 per installed watt, to provide an ample solar system for every single household in New Mexico. With DIY training and help, costs would be less, so we could throw some home weatherization and an electric bike into the equation.

The point is, just this one stupid program uses up enough capital to make an enormous contribution to well-being and slowing climate change. Instead of hurting the state, it would really help.

Realistically, that capital would only become available if the iron grip of the nuclear-military complex were loosened nationwide and scarce capital redirected to rebuilding and repairing our society. Cutting back our "defense" budget to the per-capita scale of most other countries would liberate many trillions of dollars for badly-needed investments here at home, and the meaningful, productive jobs that go with them.

Conversely, if we cannot quickly make a transition away from what amounts to runaway militarism, our downfall is at hand, with or without the mushroom cloud. Without ending U.S. militarism, there is no hope of transitioning to a sustainable economy.

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ICBM warhead as currently deployed

