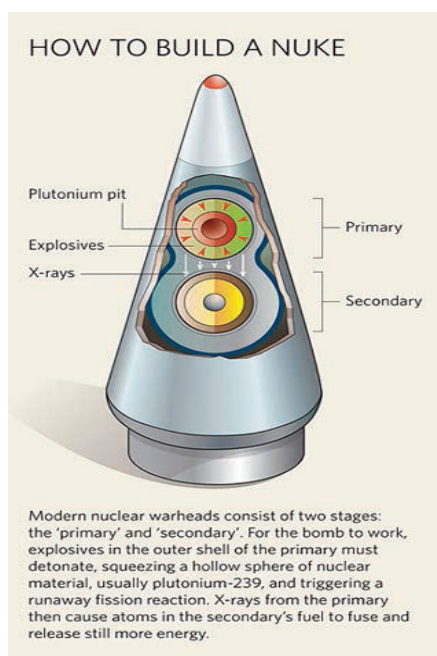


U.S. Plutonium Pit Production for Nuclear Weapons

In 1989, an FBI raid investigating environmental crimes abruptly stopped the annual production of hundreds of plutonium pits at the Rocky Flats Plant near Denver. In 1997 the Department of Energy reestablished limited production of up to 20 pits per year at the Los Alamos National Laboratory (LANL) in northern New Mexico. Since then, citizen activists have stopped the National Nuclear Security Administration (NNSA), a semi-autonomous nuclear weapons agency within the Department of Energy, in each of its four attempts to expand production far beyond just 20 plutonium pits per year. Plutonium pit production has always been the choke point for resumed U.S. production of new nuclear weapons.



Timeline of Reestablished Plutonium Pit Production History at LANL

December 1997: DOE formally decides to relocate production to LANL, the birthplace of plutonium pits. That decision was fortunately elevated to public debate by the legal requirements of the National Environmental Policy Act (NEPA), resulting in the Stockpile Stewardship and Management Programmatic Environmental Impact Statement. But unfortunately the real decision was predetermined, as some Rocky Flats personnel, plutonium and equipment had previously been transferred to Los Alamos. However, plutonium pit production was formally capped at 20 per year, mostly because of the increasing deterioration of the Lab's Chemistry and Metallurgy Research Building.
Schematic credit: *Nature*

May 2003: The NNSA releases a draft environmental impact statement for a "Modern Pit Facility" (MPF), to be located at one of five candidate sites, including LANL. The MPF was designed to produce up to 450 pits per year, a throw back to Cold War levels that NNSA never could justify. After questioning by Congress the agency lowered its claimed needed rate for future production to 250 pits per year. Finally, NNSA dropped the MPF altogether after a groundswell of formal citizen comment against it from across the country.

February 2004: NNSA issues a Record of Decision to proceed with construction of the Phase 1 "Radiological Laboratory" for the Chemistry and Metallurgy Research Replacement Project at LANL, which was completed in 2011. However, the CMRR's second phase, the ~\$6.5 billion "Nuclear Facility", has been canceled because of escalating costs. CMRR's original purpose was to support expanded plutonium pit production.

October 2006: NNSA announces its intent to prepare a programmatic environmental impact statement for "Complex 2030", the nuclear weapons complex it planned by that year. Complex 2030 includes a "Consolidated Plutonium Center" capable of producing 125

pits per year, explicitly linked to the production of new-design nuclear weapons called Reliable Replacement Warheads (RRWs), which were later rejected by Congress. This proposal is withdrawn after extensive citizen comment against it from across the country.

November 2006: The JASONS (independent consultants to the U.S. government) release a pit life study required by Sen. Jeff Bingaman at Nuclear Watch New Mexico's request. **The pit life study concluded that pits have reliable lifetimes of at least 85 years, roughly double NNSA's previous estimates.** This dramatically undermined the agency's claimed needs for new-design RRWs and directly related expanded plutonium pit production.

June 2007: LANL produces its first stockpile-qualified plutonium pit for the sub-launched W88 warhead (the W88 pit was in production at the Rocky Flats Plant when the 1989 FBI raid stopped it). This first pit was five years behind schedule and cost ~3 billion dollars, nearly triple original estimates.

January 2008: NNSA redubbed Complex 2030 as "Complex Transformation" and released a draft programmatic environmental impact statement that received more than 100,000 public comments overwhelmingly against it. Among other things, it proposed an expanded production rate of 50-80 pits per year at LANL, enabled by construction and operation of the CMRR-Nuclear Facility.

May 2008: NNSA releases a final Site-Wide Environmental Impact Statement (SWEIS) for Continued Operations at LANL, in order to implement the proposed expanded pit production level of 50-80 pits per year at the site-specific level. In both the Complex Transformation PEIS and the LANL SWEIS Nuclear Watch New Mexico and others argued that a decision to expand pit production should await the outcome of the Obama Administration's high-level Nuclear Posture Review in 2010. NNSA eventually agreed.

December 2008: NNSA's Complex Transformation Record of Decision designates LANL as the nation's sole site for plutonium pit production. It also reaffirmed building the CMRR-Nuclear Facility, but was forced to punt on the number of pits to be produced each year, leaving in place the existing production cap of 20 pits per year. **Bottom line: No legally required National Environmental Policy Act process has approved expanding plutonium pit production above the 20 pits per year cap established in 1997.**

June 2012: LANL completes its production campaign with a total of 30 W88 plutonium pits over 5 years. No other plutonium pits are currently scheduled for stockpile production (however, the Lab does periodically produce practice pits). LANL is now tooling up for future production of W87 plutonium pits for a so-called "interoperable" warhead that would replace the ICBM W78 warhead and sub-launched W88 warhead. However, the interoperable warhead has officially been delayed for 5 years, which in bureaucratic terms likely means its termination. **Bottom line: There are no plutonium pits scheduled for production, nor does the existing stockpile need any. Future plutonium pit production is for new-design nuclear weapons, created through "Life Extension Programs" that transform existing weapons and give them new military capabilities.**

June 2013: Major plutonium operations at LANL's Plutonium Facility-4 (PF-4) are stopped because of nuclear criticality safety concerns, which could cause dangerous spontaneous

neutron fluxes. Full operations have yet to be phased back in. **Bottom line: LANL is not currently capable of any plutonium pit production.**

February 2014: The Waste Isolation Pilot Plant is closed following contamination from a ruptured drum prepared by LANL using unauthorized radioactive waste handling procedures. WIPP is not expected to reopen until 2018 at the earliest (if ever), at a beginning estimated cost of \$1.5 billion. **Bottom line: Because of WIPP's closure caused by LANL, the radioactive transuranic wastes produced by plutonium pit production at LANL currently have no place to go.**

Current Status of Plutonium Pit Production at LANL

Plutonium pit production for the stockpile at LANL remains officially capped at 20 pits per year (this does not include practice pits). No pits for the nuclear weapons stockpile are currently being produced, nor are any scheduled for the foreseeable future. Nor is LANL currently capable of plutonium pit production or sending resulting radioactive wastes to a final repository.

Despite all this, the FY 2015 National Defense Authorization Act (NDAA) now requires:
SEC. 3112. PLUTONIUM PIT PRODUCTION CAPACITY.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) the requirement to create a modern, responsive nuclear infrastructure that includes the capability and capacity to produce, at minimum, 50 to 80 pits per year, is a national security priority;

(2) delaying creation of a modern, responsive nuclear infrastructure until the 2030s is an unacceptable risk to the nuclear deterrent and the national security of the United States; and
(3) timelines for creating certain capacities for production of plutonium pits and other nuclear weapons components must be driven by the requirement to hedge against technical and geopolitical risk and not solely by the needs of life extension programs.

(b) PIT PRODUCTION....

“(a) REQUIREMENT.—Consistent with the requirements of the Secretary of Defense, the Secretary of Energy shall ensure that the nuclear security enterprise—

“(1) during 2021, begins production of qualification plutonium pits;

“(2) during 2024, produces not less than 10 war reserve plutonium pits;

“(3) during 2025, produces not less than 20 war reserve plutonium pits;

“(4) during 2026, produces not less than 30 war reserve plutonium pits; and

“(5) during a pilot period of not less than 90 days during 2027 ..., demonstrates the capability to produce war reserve plutonium pits at a rate sufficient to produce 80 pits per year.

Two things are important to note here. First, the legislation divorced future expanded plutonium pit production from the actual needs of the stockpile, i.e., “not solely by the needs of life extension programs.” This is in keeping with the neoconservative nuclear views of the House Armed Services Committee, which proposed and drafted Sec. 3112. **Given its expense, the lack of clear need for expanded plutonium pit production may doom this requirement.** Second, the Armed Services Committees are authorizers, not appropriators. **If the money is not provided on a year-by-year basis by congressional appropriators for expanded plutonium pit production, it simply will not happen.** And expanded plutonium pit production will be expensive, very expensive.

Nevertheless, the National Nuclear Security Administration (NNSA) and LANL are preparing for expanded plutonium pit production. The NNSA's FY 2016 Congressional Budget Request mirrors the FY 2015 NDAA requirement by saying, "The major elements of the FY 2016 - 2020 request include:... Execut[ing] a plutonium strategy that achieves a 30 pit per year (ppy) capacity by 2026 and demonstrates, for a pilot period, a 50-80 ppy capacity from FY 2027-2029." The NNSA's FY 2016 Stockpile Stewardship and Management Plan echoes this as well, while providing further details.

Because of the cancellation of the CMRR-Nuclear Facility, NNSA and LANL propose to create the capability for expanded plutonium pit production by:

- 1) Raising the plutonium administrative limit for the Rad Lab from 8.4 grams of plutonium-239 equivalent to 36 grams. This will vastly increase the Rad Lab's capacity for analytical chemistry samples, used as quality control in direct support of plutonium pit production. Up to \$675 million is planned on additional equipment for the Rad Lab, far more than the original \$400 million to build and equip the facility to begin with.
- 2) Upgrading and extending the life of LANL's existing plutonium pit production facility, PF-4, which will cost up to \$1.6 billion.
- 3) Building "not less than two modular structures that will achieve full operating capability not later than 2027," expected to cost a billion each.

Bottom line: Given the usual cost overruns, eventual costs may meet or exceed the CMRR's estimated cost of \$6.5 billion when it included the Nuclear Facility.

Conclusion: The nonpartisan Congressional Budget Office has estimated that nuclear weapons "modernization" programs will cost \$335 billion over the next 10 years, and that costs will be even higher in the following two decades. Thus modernization programs will cost more than a trillion dollars over the next 30 years, including new missiles, subs and bombers. The Obama Administration is proposing a 10.5% net increase in FY 2016 funding for NNSA's nuclear weapons programs, despite the fact that its parent Department of Energy has been on the Government Accountability Office's High Risk List for 25 consecutive years.

Meanwhile, funding for cleanup programs remains flat, and there is concern that NNSA will cut LANL's cleanup funding by using it to pay for WIPP-related fines levied by the New Mexico Environment Department. Moreover, LANL plans to "cap and cover" some 200,000 cubic yards of radioactive and hazardous wastes at Area G (contiguous to San Ildefonso Pueblo "Sacred Lands"), leaving them permanently buried in unlined pits and trenches, above our groundwater aquifer, three miles uphill from the Rio Grande.

Nevertheless, expanded plutonium pit production for new-design nuclear weapons remains LANL's and NNSA's highest priority, even when there is no clear need for them. Technically, LANL is currently incapable of any plutonium pit production at all. Legally, LANL and NNSA must complete additional public review under the National Environmental Policy Act before plutonium pit production can be expanded above the current limit of 20 pits per year. Morally, **LANL and NNSA should put the \$4 billion to be spent on expanded plutonium pit production into cleanup instead. That would be a real win-win for New Mexicans, permanently protecting the environment and our precious water resources, while creating hundreds of high-paying jobs.**

This fact sheet is available at <http://nukewatch.org/facts/nwd/PitProductionFactSheet.pdf>