

Successful Citizen Activism

Against Expanded U.S. Plutonium Pit Production

- highlighting the activities of Nuclear Watch New Mexico •

Dedicated to Leroy Moore, activist with the Rocky Mountain Peace and Justice Center

and

J. Carson Mark, retired director of Los Alamos Lab's Theoretical Division
and ardent arms control advocate

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 1996 the Department of Energy sought to reestablish limited production of up to 20 pits per year at the Los Alamos National Laboratory (LANL). Since the turn of the century 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.

Plutonium pits are the fissile cores of modern nuclear weapons ("fissile" means capable of sustaining a nuclear reaction). When a nuclear weapon is detonated, the plutonium pit is explosively compressed into a critical mass that instantly begins atomic fission. In modern two-stage weapons, plutonium pits act as the primaries (or "triggers") that initiate nuclear fusion in uranium "secondaries," creating the immense destructive power of thermonuclear weapons. Plutonium pits are also atomic bombs in their right, as demonstrated by the Nagasaki bomb (the Hiroshima bomb was a uranium weapon). Plutonium weapons are generally preferred by the military because of their greater compactness, making them easier to deliver by both bombers and missiles.

Not only has LANL been limited since 1996 to 20 pits per year (a rate which the Lab has never come close to achieving), but is in fact not currently producing any pits for the nuclear weapons stockpile, nor are any scheduled. Future plutonium pit production rates will be driven by "Life Extension Programs" for existing nuclear weapons, and these programs are experiencing massive cost overruns and delays. Nuclear Watch New Mexico believes that production of stockpile plutonium pits at LANL will remain zero for the foreseeable future. This is a largely unheralded victory for a potential future world free of nuclear weapons. It will require ongoing citizen vigilance to safeguard it.

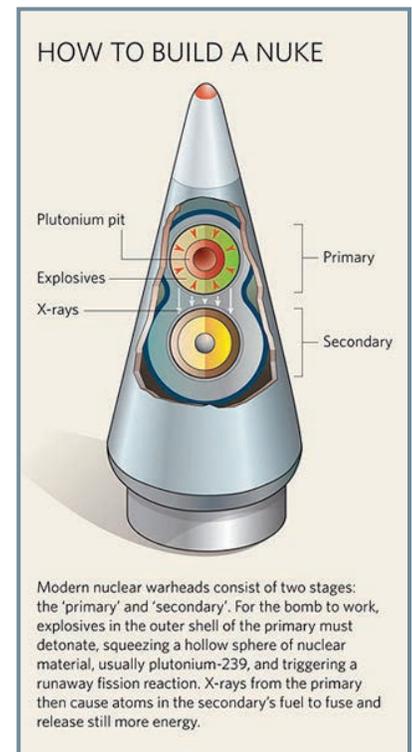


image credit: [Nature](#)



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Timeline: U.S. Plutonium Pit Production History

July 16, 1945: The atomic age is ushered in with the Trinity Test near Alamogordo, NM, which detonated a plutonium pit developed by the WW II Manhattan Project at Los Alamos, NM (later to become the Los Alamos National Laboratory (LANL)).

August 6, 1945: Little Boy, a uranium atomic weapon, destroys Hiroshima.

August 9, 1945: Fat Man, a plutonium atomic weapon, destroys Nagasaki.

July 10, 1951: Ground is broken for the first building at the Rocky Flats Plant in Colorado, which scaled up Los Alamos Lab's original plutonium pit production mission. The number is classified, but Rocky Flats produced many tens of thousands of pits during its 36 years of operations.



Hiroshima

September 11, 1959: A major plutonium fire occurs in Rocky Flats Building 771 (often called the most dangerous building in America) and releases plutonium to the atmosphere.

May 11, 1969: Brave Rocky Flats firemen, helped by plain dumb luck, prevent catastrophic plutonium contamination of the Denver metro area during the "Mother's Day Fire" (see *The Day They Almost Lost Denver*). This was the costliest industrial accident in U.S. history up to that time.

April 28, 1979: An estimated 15,000 citizens protested nuclear weapons production at the gates of Rocky Flats, with numerous speakers including poet Allen Ginsberg and musicians Jackson Browne and Bonnie Raitt. The next day 286 protesters, including Daniel Ellsberg (leaker of the Pentagon Papers), were arrested for civil disobedience.



Allen Ginsberg, Peter Orlovsky and fellow meditators block the supply rail for Rocky Flats nuclear weapons production facility, June 1978. photo: Joe Daniel

Throughout the 1980's: Thousands of citizens repeatedly demonstrated at the Rocky Flats Plant to protest Cold War plutonium pit production. In 1983 an estimated 17,000 people encircled Rocky Flats' 17-mile perimeter while holding hands. Our colleagues at the Rocky Mountain Peace and Justice Center in Boulder, CO, played a vital role in public organizing, in particular Dr. Leroy Moore.

June 6, 1989: A dramatic FBI raid investigating environmental crimes abruptly ends plutonium pit production at Rocky Flats. A federal judge seals the subsequent grand jury report (still sealed to this day), and the U.S. District Attorney quashes criminal indictments against the Rockwell Corporation (Rocky Flats' manager) and responsible Department of Energy officials.



Rocky Flats nuclear weapons facility, 1983. People circle the facility in protest.

November 1989: The Berlin Wall falls, signaling the end of the Cold War. At the same time U.S. nuclear weapons production is being forced to ramp down because of long ignored environmental and safety issues.

Spring 1990: Rising citizen activism in the Santa Fe, NM area, and demands for a full environmental impact statement under the National Environmental Policy Act by Concerned Citizens for Nuclear Safety (CCNS) and the Los Alamos Study Group (LASG) lengthen the required public review process for a new plutonium facility at LANL. The “Special Nuclear Materials Research and Development Lab,” which would have been LANL’s largest capital project up until that time, was to replace the Chemistry and Metallurgy Research (CMR) Building that directly supports pit production. [At that time Nuclear Watch NM Director Jay Coghlan was working for CCNS.] During the resulting half-year delay Congress decided to not fund the new plutonium facility because of the end of the Cold War.

October 5, 1991: The Soviet Union announces it will suspend nuclear testing (plutonium pits are generally the most important nuclear weapons components to test). Following that, Rep. Mike Kopetski (D-OR), elected with support from citizen peace organizations, introduces the “Nuclear Test Moratorium Act” in the U.S. House of Representatives.

Sept. 13, 1992: A sustained, months-long national grassroots lobbying campaign led by citizens’ disarmament, environmental, and religious groups spurs the U.S. Senate to adopt an amendment calling for a 9-month U.S. testing moratorium.

October 3, 1992: George Bush Sr. reluctantly signs a testing moratorium banning nuclear weapons explosions. In following years, Bill Clinton steadily increases nuclear weapons funding for DOE’s so-called “Stockpile Stewardship Program” in the hopes of winning a Comprehensive Test Ban Treaty (CTBT). The Program’s claimed rationale is to enable annual certification of the stockpile in the absence of testing. However, full-scale tests weren’t really about reliability (which would have little statistical meaning given 1,000’s of nuclear weapons), and instead advanced new weapons designs, particularly plutonium pits. Nevertheless, the Senate rejected the CTBT in 1999 while the weapons labs kept (and still receive) tens of billions in Stockpile Stewardship Program money.

November 1994: LASG and CCNS sue the Department of Energy over its planned Dual-Axis Radiographic Hydrodynamic Testing Facility (DARHT) at LANL without a required environmental impact statement (the facility was designed to blow up surrogate plutonium pits in open-air tests). In pre-litigation negotiations the two groups demanded that DOE:

1) Complete a legally required Stockpile Stewardship and Management Programmatic Environmental Impact Statement (SSM PEIS);

2) Complete a DARHT environmental impact statement;
and

3) Stop construction while completing a DARHT EIS. DOE readily agreed to the first two demands, but refused to halt construction, absurdly arguing that continuing construction would not bias the agency toward operating the facility. DOE lost in court, and a federal judge enjoined DARHT construction while the EIS was being completed.



Open air explosive test at DARHT

October 1995: LASG and CCNS persuade J. Carson Mark to submit a declaration supporting plaintiffs' opposition to DOE's (ultimately successful) effort to dissolve the injunction against DARHT construction. J. Carson Mark was the director of the Lab's famed Theoretical Division that created the Hiroshima and Nagasaki bomb designs and all later nuclear weapons designs. He became an ardent arms control advocate after retirement. Mark testified that "the information that hydrodynamic facilities such as DARHT have provided in the past has been useful in the design of nuclear weapons, but of little use in assuring the safety and reliability of weapons," thus directly contradicting the government's claimed need for the facility.

Crucially, Mark told Coghlan that LANL had set aside plutonium pits decades ago for the express purpose of studying aging effects that could affect reliability. He said that "the big news is no news" --that there weren't any aging effects affecting reliability, contradicting the government's claimed need for re-establishing pit production. Coghlan filed a Freedom of Information Act request for these "set aside experiments." DOE's rejection letter admitted the experiments existed but denied release because the information was classified. Nevertheless, Mark's tip later inspired Nuclear Watch to successfully request Congress to require an independent life study of plutonium pits (see below).

On plutonium pit aging:

**"The Big News
is No News"**

--J. Carson Mark, 1995

December 1997: DOE formally decides to relocate production to LANL, birthplace of plutonium pits. That decision was fortunately elevated to public debate by the legally required Stockpile Stewardship impact statement process. Unfortunately, though, the real decision had already been made, as some Rocky Flats personnel, plutonium and equipment had previously been transferred to Los Alamos. However, pit production was formally capped at 20 per year, mostly because of the increasing deterioration of the Lab's CMR Building.

December 1999: Ex-CCNS staff and board members, including Jay Coghlan, form [Nuclear Watch New Mexico](#), in part to focus efforts on U.S. weapons policies. CCNS continues with its valuable regional environmental advocacy and public outreach, frequently collaborating with NWNM.

March 2000: In response to the Wen Ho Lee security scandal at LANL, Congress (strongly pushed by NM's Senator Pete Domenici) creates the National Nuclear Security Administration (NNSA), a semi-autonomous nuclear weapons agency within DOE. Wen Ho Lee is subsequently vindicated after pleading guilty to one misdemeanor. He had served six months in solitary, for which a federal judge apologized. Soon the Lab had a string of real security crises, such as "the missing tapes" and classified documents found in a local mobile home shared with a meth addict.

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 aimed to build up to 450 pits per year, a throwback to Cold War levels that NNSA never could justify. When questioned by Congress, the agency then lowered its claimed need to 250 pits per year. Finally, NNSA dropped MPF altogether after a groundswell of formal citizen comment against it from across the nation.



•Echoing the Special Nuclear Materials Research and Development Lab at LANL, nixed by Congress back in 1992, NNSA releases an environmental impact statement for the Chemistry and Metallurgy Research Replacement (CMRR) Project, intended to directly support expanded pit production.

Modern Pit Facility protest
source: the Santa Fe New Mexican

•Also in the pivotal month of May 2003, Nuclear Watch asks Senator Jeff Bingaman (D.-NM) to require independent expert review of plutonium pit lifetimes. The requirement was successfully added as a floor amendment to the 2004 Defense Authorization Act (see November 2006).

February 2004: NNSA issues a Record of Decision to proceed with construction of CMRR's Phase 1 "Radiological Laboratory," which was completed in 2011. However, it's very unlikely that the CMRR's second phase, the ~\$6 billion "Nuclear Facility," will ever be built (see more below).

September 2005: Via negotiations over an air permit for CMRR regulated by the New Mexico Environment Department, Nuclear Watch and six other local groups reach a legal settlement with NNSA requiring semi-annual public meetings. For over seven years these meetings dramatically increased project transparency and produced valuable public information on construction cost increases and schedule delays, seismic requirements and claimed needs for pit production, laying the groundwork for the CMRR-Nuclear Facility's eventual deferral in 2012.

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 weapons called Reliable Replacement Warheads (RRWs). This proposal goes nowhere after hundreds of citizen activists testify at public scoping meetings across the country.

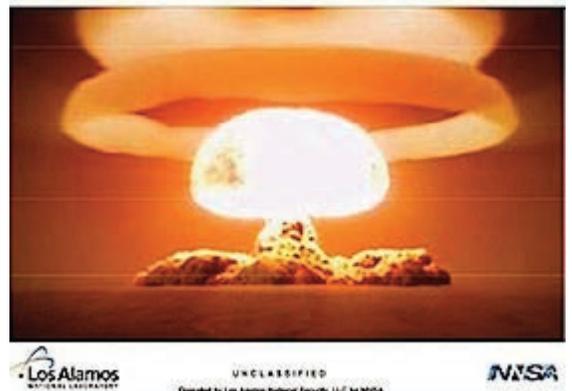
November 2006: The JASONs (independent consultants to the U.S. government) release the pit life study required by Sen. Bingaman at Nuclear Watch's request. They concluded that pits have reliable lifetimes of at least 85 years, roughly double NNSA's previous estimates. This dramatically undermined the 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 Rocky Flats 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 repackages Complex 2030 as "Complex Transformation," releasing a draft programmatic environmental impact statement that gets more than 100,000 public comments, overwhelmingly against it. This "Transformation" called for an expanded production rate of 50-80 pits/year at LANL, enabled by construction and operation of the CMRR-Nuclear Facility.

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

Central Mission of Los Alamos National Laboratory



December 2008: NNSA's Complex Transformation Record of Decision designates LANL as the nation's sole site for plutonium pit production. It also reaffirms the "need" for the CMRR-Nuclear Facility, but is 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.

March 2010: Under questioning by Nuclear Watch and others at a CMRR settlement agreement public meeting, NNSA admitted that increasing seismic concerns would require large changes to the planned CMRR Nuclear Facility, which would also inevitably drive up costs.

May 2010: Nuclear Watch demands that NNSA complete a supplemental analysis for the 2003 CMRR environmental impact statement because of the many proposed changes, which NNSA agrees to in June, and which legal requirements support. In August, LASG sues for a "new" EIS, which a federal judge rules moot given NNSA's decision to furnish a supplemental EIS.

Amazingly, the new CMRR supplemental environmental impact statement explicitly stated that, despite a \$6 billion price tag, the Nuclear Fa-



*LANL's existing plutonium pit production facility on right, the newly built CMRR Rad Lab on left, with premature excavation for unbuilt Nuclear Facility behind it.
source: Nuclear Watch New Mexico*

cility would create no new permanent jobs; it would merely relocate existing Lab jobs. Nuclear Watch heavily publicizes that admission to counter the "jobs, jobs, jobs" argument, a hot issue at that moment given the ongoing New Mexico Senate race.

October 2011: NNSA issues a Record of Decision on the final supplemental CMRR environmental impact statement to proceed with the revised CMRR-Nuclear Facility. Pit production is still held to 20 per year.

November 2011: Martin Heinrich (D.-NM) wins Jeff Bingaman's old Senate seat. During his campaign he was relatively low-key in his declared support for the CMRR Nuclear Facility, unlike his opponent--former Congresswoman Heather Wilson, who attacked him for insufficient support of the nuclear weapons labs. Documents later obtained by Nuclear Watch under the Freedom of Information Act showed that Wilson started being paid \$10,000 a month by the Sandia Labs the day after she left Congress, for consulting contracts that had no written work requirements (she also had similar contracts for \$10,000 a month with LANL).

February 2012: The Obama Administration "defers" funding the CMRR Nuclear Facility for at least five years in its FY 2013 Congressional Budget Request. That decision was based on:

- 1) the lack of clear need for expanded plutonium pit production, in large part as shown by the independent 2006 pit life study requested by Nuclear Watch;
- 2) the project's ten-fold jump in estimated costs while federal budget constraints were increasing;
- 3) NNSA's higher priority of building a ~\$6 billion Uranium Processing Facility at the Y-12 Plant in Tennessee. (A new estimate puts the UPF at \$12 billion!)

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, possibly using secondaries from yet a fourth type of warhead. However, this proposal is starting to fall apart under deepening scrutiny from activists and Congress, again leaving the basic fact that there are no plutonium pits now scheduled for stockpile production.

July 28, 2012: NNSA's most famous security incident occurs when three protesters, including an 82-year-old nun, penetrate a highly secure area storing highly enriched uranium at the Y-12 Plant.

June 2013: Major plutonium operations at LANL are stopped due to criticality safety concerns, which could cause dangerous spontaneous neutron fluxes. Full operations have yet to be phased back in.



Trinity Test, July 16, 1945
"No one who saw it could forget it, a foul and awesome display."
--Kenneth Bainbridge, physicist

June 4, 1996.
In an emotional ceremony, U.S. Secretary of Defense William Perry and his Russian and Ukrainian counterparts planted sunflowers on the site of a former Soviet missile silo, symbolically saluting Ukraine's new status as a nuclear weapons-free state.

source: CNN World News

Current Status of Plutonium Pit Production

Where do we stand now? Plutonium pit production is and has been the choke point for resumed U.S. nuclear weapons production. No pits for the nuclear weapons stockpile are currently being produced, nor are any scheduled for the foreseeable future. This is a largely unheralded victory for a future world free of nuclear weapons, brought about by repeated citizen success against government proposals for new-design nuclear weapons and expanded plutonium pit production.

But ongoing vigilance will be required to safeguard this victory. Weapon designers now seek to incrementally achieve their goals of new military capabilities for existing nuclear weapons. They want to do this through so-called "Life Extension Programs" which will also require expanded plutonium pit production. The good news is that the Walmart-sized CMRR-Nuclear Facility, whose main mission is to support production of up to 80 pits per year, will almost certainly never be built. The bad news is that NNSA and LANL are now considering small, underground modular facilities that could expand production capability to 30 pits per year or more.

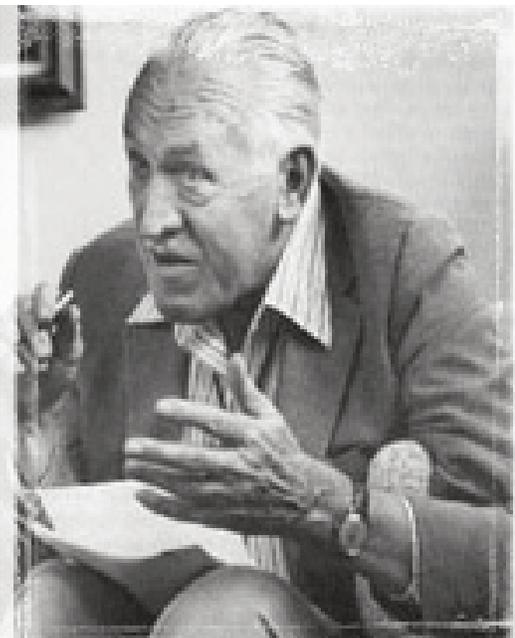
Therefore, we cannot be complacent. But we can take strength and use our experience from a proven history of citizen success. We can go on to struggle and win against the inevitable future attempts to expand plutonium pit production, knowing that we are a crucial part of the march toward a world verifiably free of nuclear weapons.

December 9, 2013

Author: Jay Coghlan

Layout: Sasha Pyle

with gratitude to activists everywhere who work to protect our world from nuclear weapons



J. Carson Mark, head of LANL's Theoretical Division 1947-1973, ardent arms control advocate after his retirement.



LeRoy Moore, PhD, a founder of Rocky Mountain Peace and Justice Center, is a full-time consultant who concentrates primarily on the local hazards of the still-contaminated site of the defunct Rocky Flats nuclear weapons plant near Boulder. A lay specialist on radiation health effects, he retired in 1996 from years of teaching courses at the U. of Colorado on nonviolent social change. He is the father of three and grandfather of five.