

"The real purpose in making the bomb was to subdue the Soviets.' Now it's happening again. Why?"

Discussion with Peter Kuznick and Greg Mello, Los Alamos, July 22, 2023

Only he who knows the empire of might and knows how not to respect it is capable of love and justice...Thus it is that those to whom destiny lends might, perish for having relied too much upon it.

Simone Weil

It is not "can any of us imagine better?" but, "can we all do better?" The dogmas of the quiet past, are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise -- with the occasion. As our case is new, so we must think anew, and act anew. We must disenthrall ourselves, and then we shall save our country.

Abraham Lincoln

A new generation will have to be taught a new way of harmony, mutual respect, common interest, and love for each other and the planet.

Herman Agoyo, Ohkay Owingeh

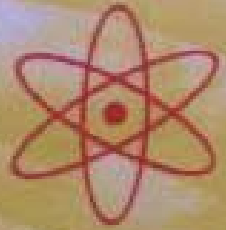
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Welcome to New Mexico

America's Nuclear Weapons Colony

www.lasg.org

Our Simple Agenda

1. Welcome, logistics

2. Peter Kuznick, 30 minutes, primarily historical

3. Questions, answers, discussion, 30 minutes

4. Greg Mello, 30 minutes, primarily current

5. Questions, answers, discussion, 30 minutes

6. Informal discussions and networking, cleanup as needed

Briefest overview of U.S. warhead plans, focusing in on plutonium pit production

CURRENT			NEAR FUTURE		
Delivery System		Nuclear Weapon (Bomb or Warhead)	Delivery System		Nuclear Weapon (Bomb or Warhead)
Platform	Vehicle		Platform	Vehicle	
SEA					
Ohio-class SSBN	Trident II D5 LE1 SLBM	W76-0 , W76-1, W76-2, W88	Columbia- class SSBN	Trident II D5 LE2 SLBM	W76-1, W76-2, W88 W93? (later)
			TBD	SLCM	TBD ? Doubtful
LAND					
MMIII ICBM		W78, W87-0	GBSD		W87-0, W87-1
AIR					
B-2A Bomber		B83, B61-7/11	B-21 Bomber	LRSO	B61-12, W80-4 B83?
B-52H Bomber	AGM-86 ALCM	W80-1	B-52H Bomber	LRSO	W80-4
DUAL-CAPABLE AIRCRAFT					
F-15E DCA		B61-3/4	F-35A DCA		B61-12

US Nuclear Weapons,

from DoD, *Nuclear Matters 2020 Handbook*, updated as shown

The best overviews of U.S. nuclear weapons we can offer are:

- New: Congressional Budget Office, “[Projected Costs of U.S. Nuclear Forces, 2023 to 2032](#)”
- Hans Kristensen and “[United States Nuclear Weapons, 2023](#),” Jan. 15, 2023
- [US nuclear weapons since 2020: continuity & change](#), Dec 7, 2021
- [Update on US Nuclear Weapons Modernization for the International Disarmament Community](#), May 13, 2020

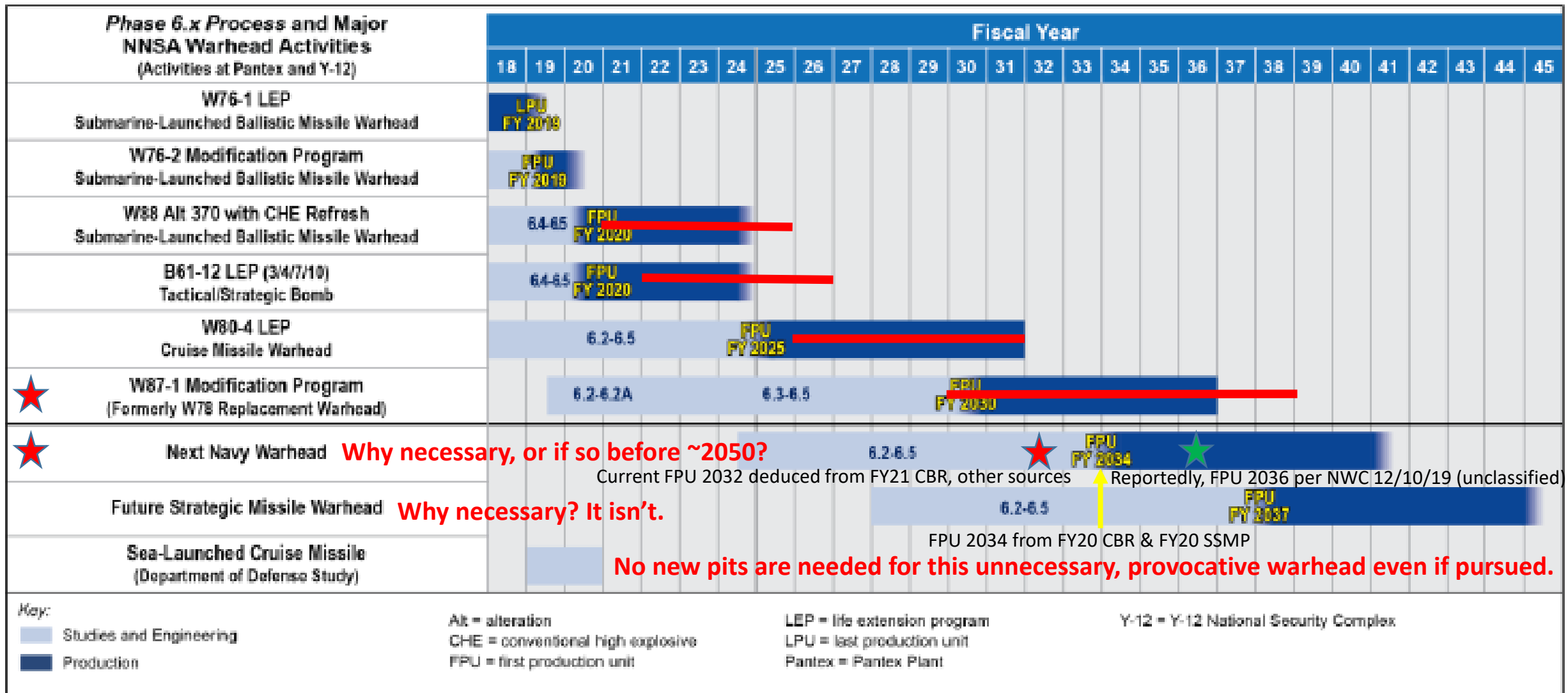


Figure 2-2. NNSA warhead activities²

From NNSA [FY2020 SSMP](#), July 2019. Red bars are production schedule as of May 2020, from LASG sources and [GAO-20-573R](#) (p. 16). FPU dates in the 2030s are now classified and/or uncertain.

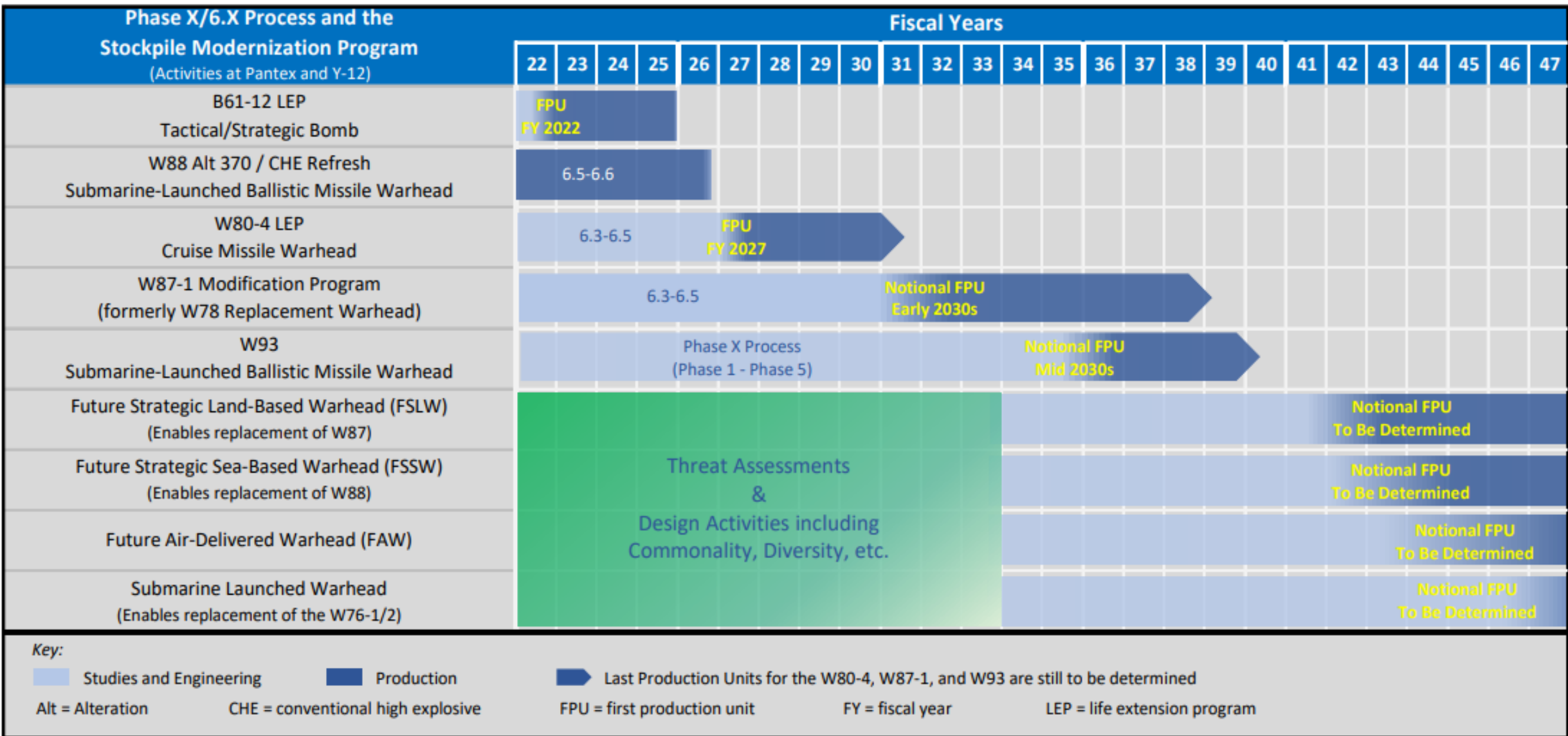


Figure 2–2. DOE/NNSA Warhead Activities

**Ground Based Strategic Deterrent (GBSD) “Sentinel” system.
Deployment 2030-2037. A \$85-140+ billion program plus warheads,
according to DoD’s Cost Analysis and Program Evaluation (CAPE). 400
deployed, MIRV-capable (3 per missile for some fraction of 400,
perhaps 200 as at present). To be armed with new W87-1 warheads
(W87-0s initially). Some 250-1,500 new-pit W87-1s are desired,
starting in 2030.**



**This is the sole planned
use for LANL pits during
the 2020 and pre-SRPPF
2030s.**



Mark 21/W87 on single RV MM III bus, the present deployment configuration.

This RV is too wide and heavy for MIRVing MM III.

MM III in operation.

Result.

New silo-based missiles are to be the destination for new plutonium pits.



W87-0 in Mark 21 reentry vehicles (RVs), shown here in (retired) MX missile configuration. Circular error probable (CEP) is classified but say ~100 m, with “smart” fuzing. Yield is 300 kilotons (kt), with a 475 kt variant optional. It is pits of this type which LANL is tasked to make.

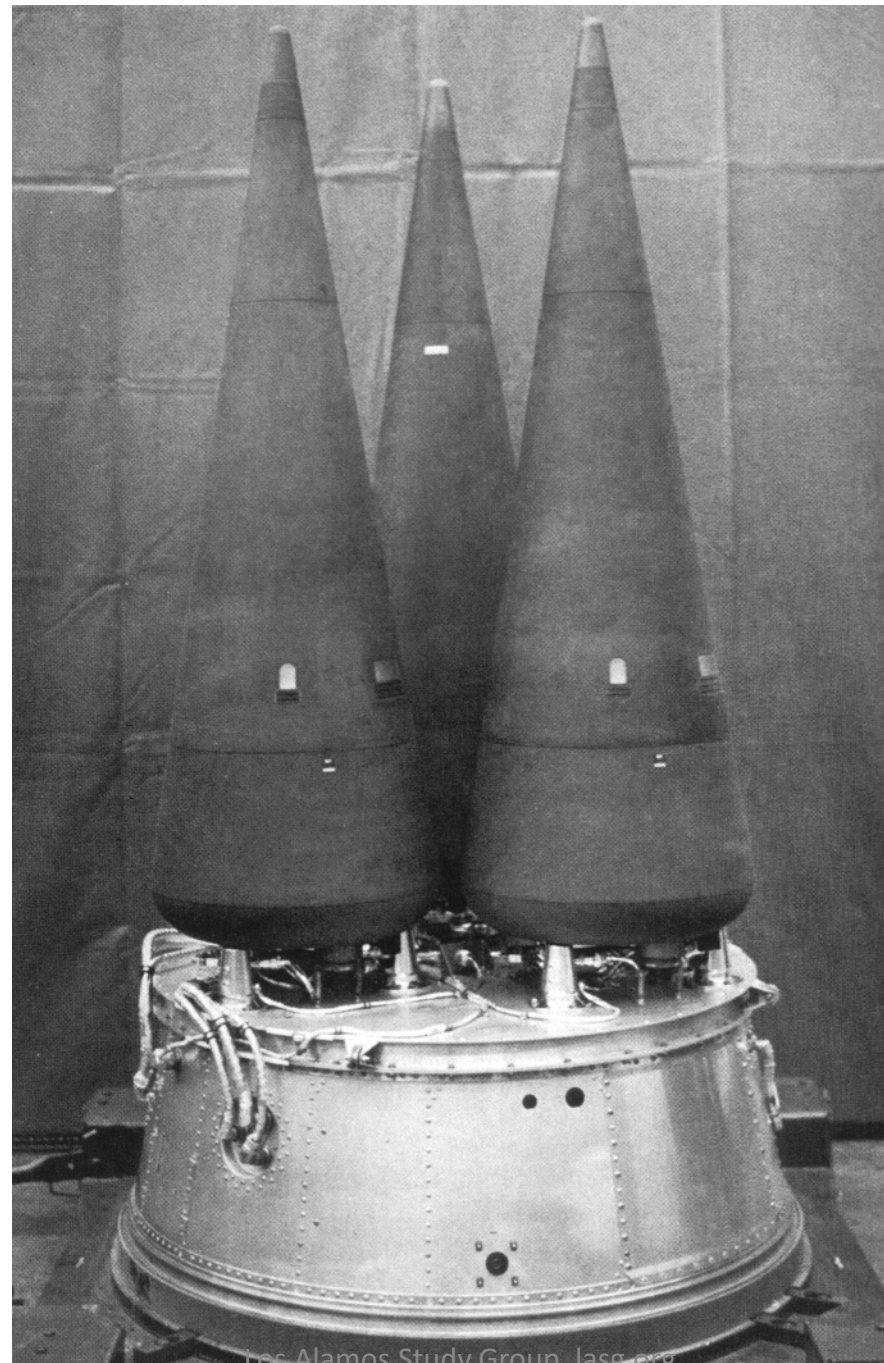
The US possesses ~ 540 (490?) W87s, in addition to ~780 W78s in Mark 12A RVs (CEP ~720 ft) for the same 450 Minuteman III missiles (400 deployed). At present, ~200 MM IIIs could be returned to multiple independent RV (MIRV) status with 3 W78 warheads each.

MK 12A RE-ENTRY VEHICLE



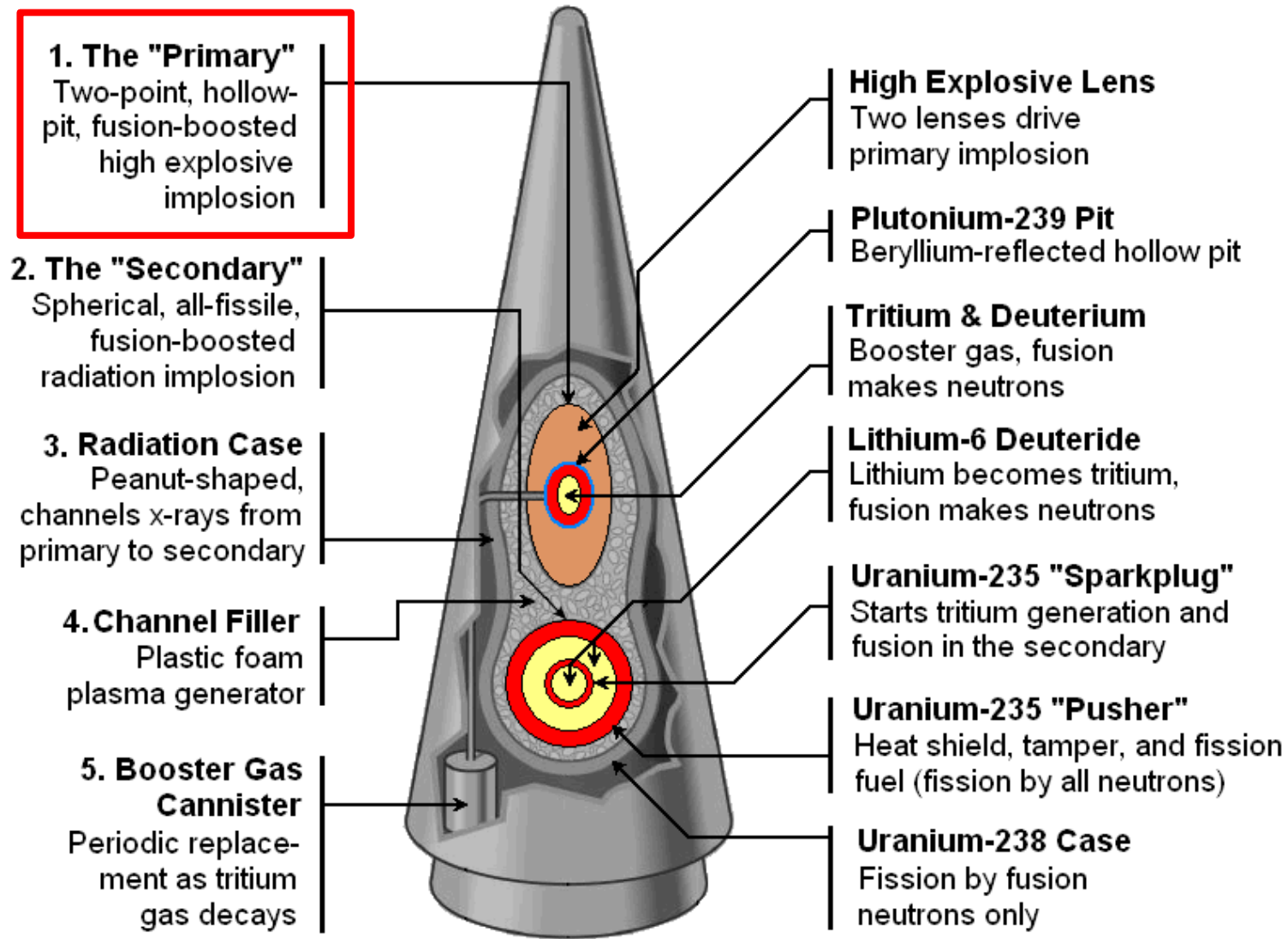
Skinnier,
lighter, less
accurate RV
for the W78.
Both the RV
and the
warhead are
to be
retired.

Minuteman III Mk-12 MIRV Warheads (W78s)

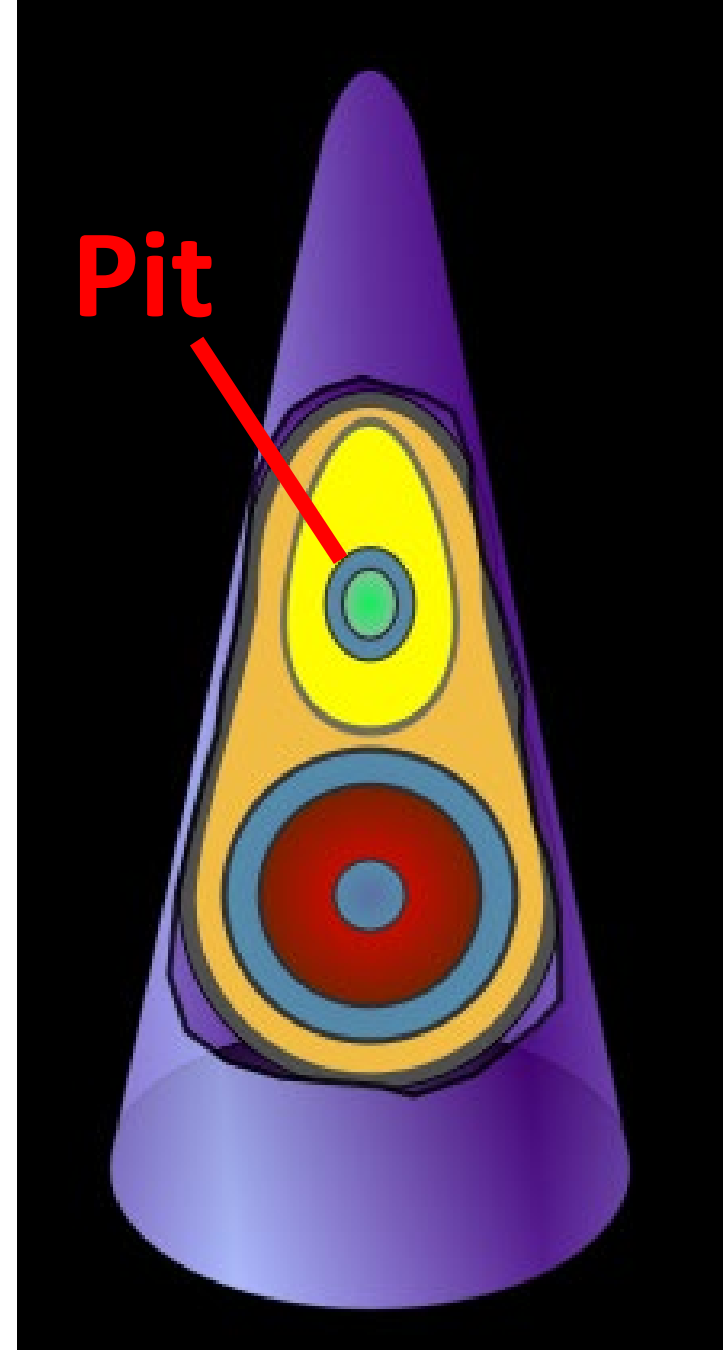


Modern U.S. ballistic missile warhead, late 1980s

W88 Warhead for Trident D-5 Ballistic Missile



Sources for illustrations: Wikipedia



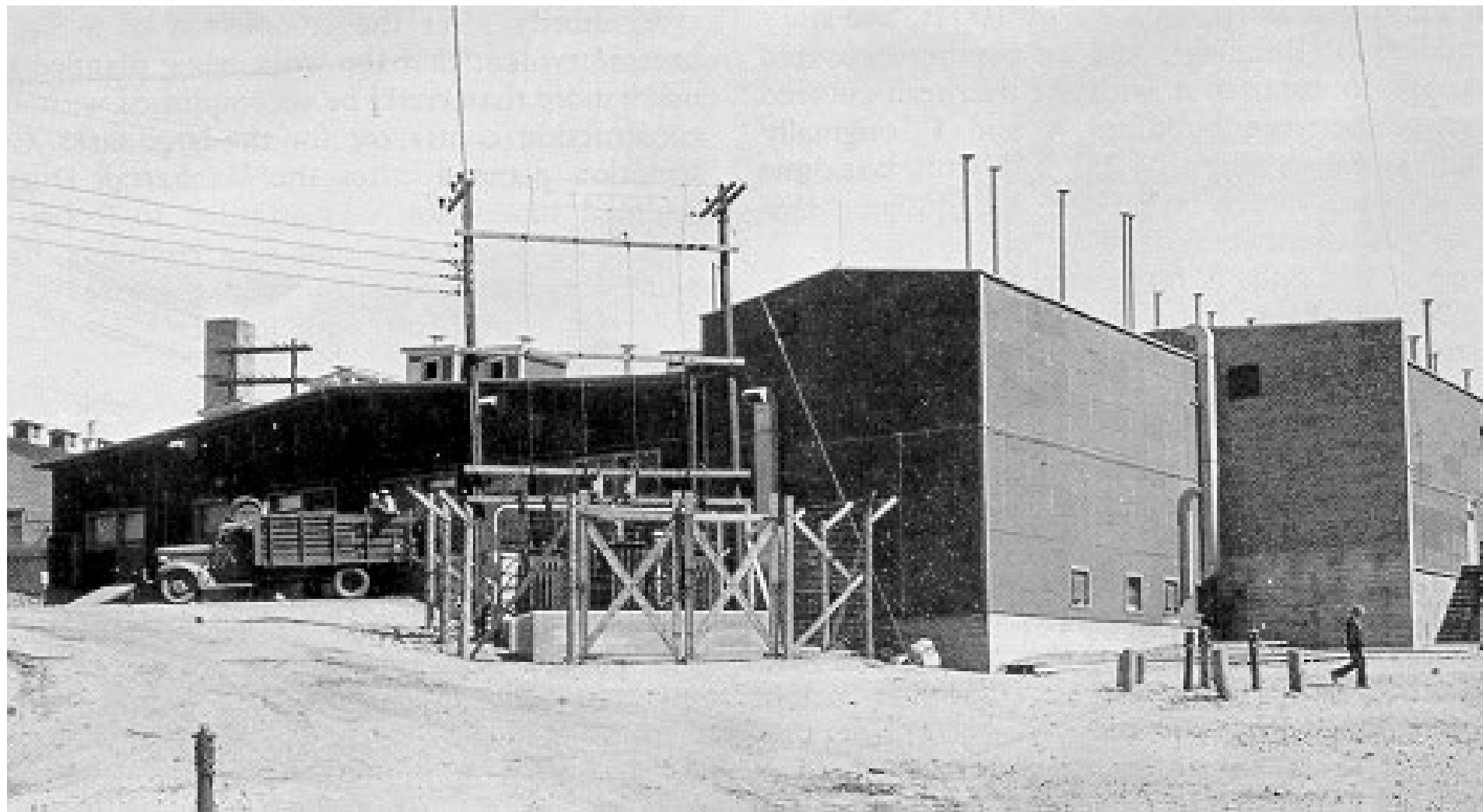
Early plutonium pit and bomb production at LANL and elsewhere

Year	Stockpile	Notes
1945	2	DP facilities first operation Oct. or Nov. 1945; design began in Jan or Feb 1945; first bombing plan against Soviet cities delivered to Groves by end of August 1945
1946	9	7 of these usable; 2 lacked initiators. "Pincher" war plan against Soviets June 1946, LANL managers petition MED to get rid of all production work
1947	13	"One operable bomb in Jan. 1947," D. Lilienthal, AEC, Truman was stunned
1948	50	Sandstone X-ray 4/14/48; Mk III (Fat Man) production immediately halted, switched to Mk IV; Sandia bomb assembly facility opened 9/1/1948, continued as primary assembly site through 1952
1949	250	Hanford took over pit production July 1949; no significant hitches
1950	450	
1951	650	
1952	1,000	Rocky Flats opened, Hanford continues pit production also
1953	1,350	

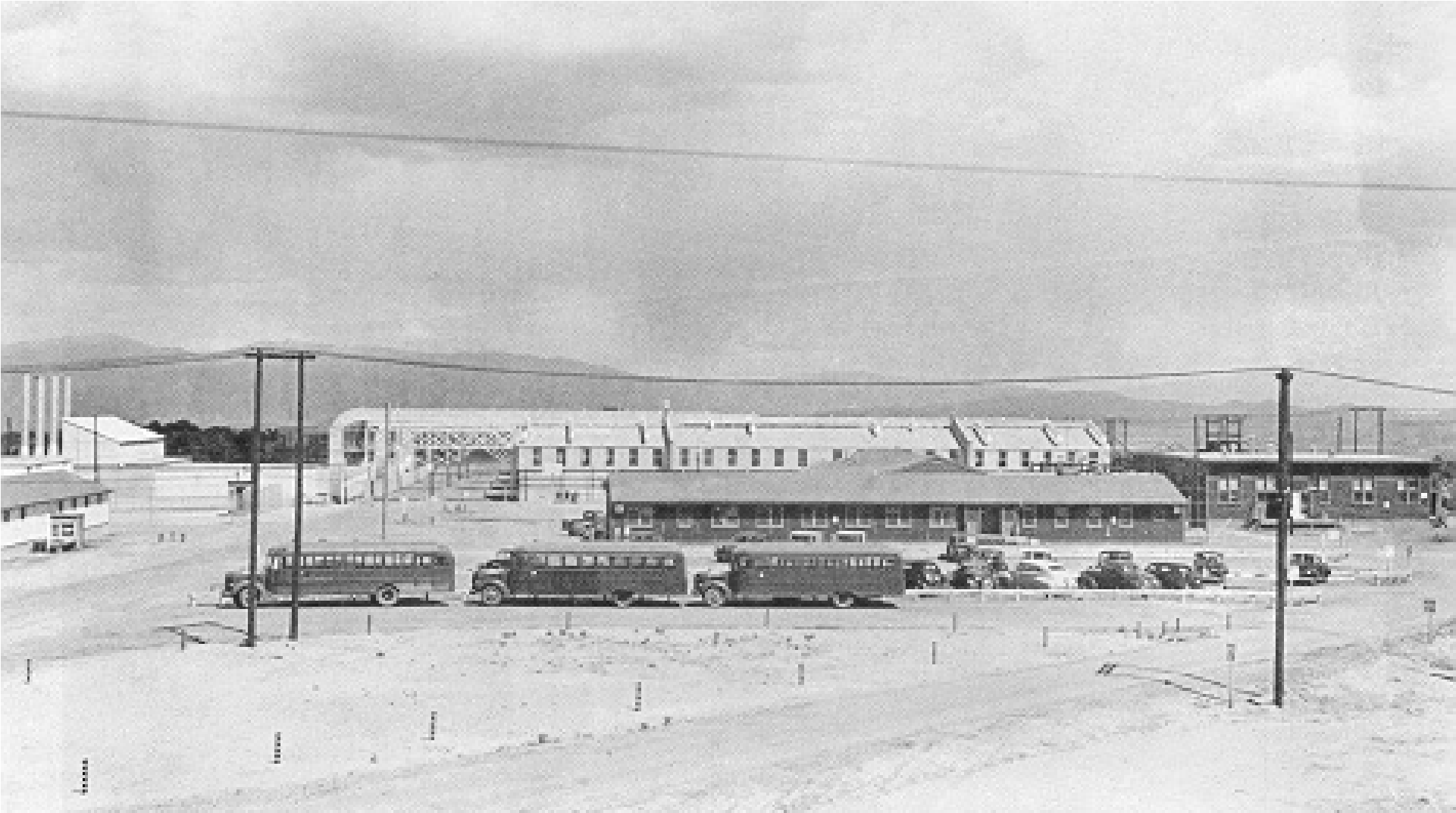
David Rosenberg, *Bull. Atom. Sci.* May 1982 pp. 25-30; Chuck Hansen, *US Nuclear Weapons, the Secret History*, 1987, <https://www.sandia.gov/about/history/1940s/>, Gregg Herken, *The Winning Weapon*; DOE *Linking Legacies*; "The Postwar Laboratory," Bradbury et. al, 1946 LA-UR-16-28879.



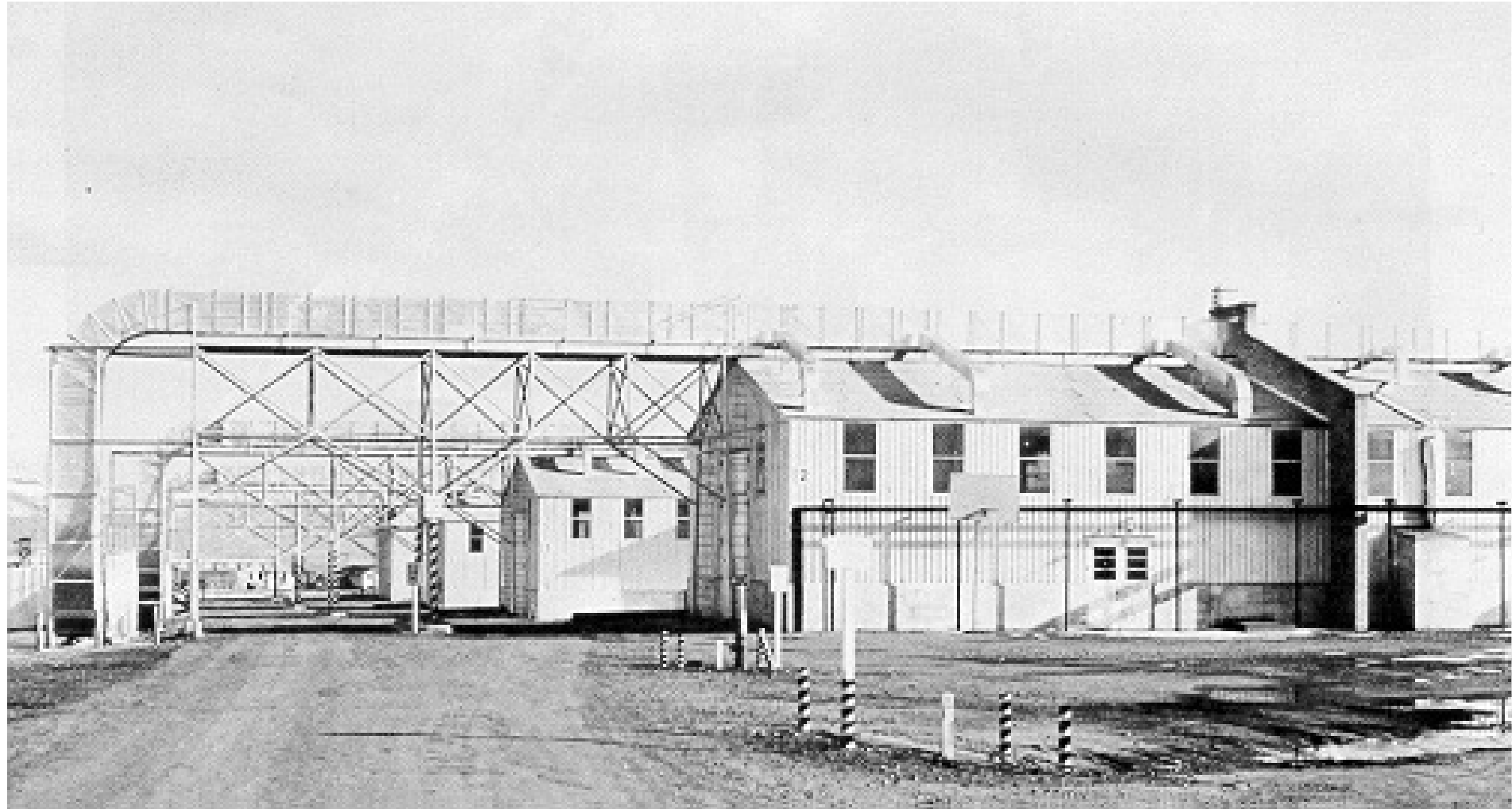
**Sandia
Bldg 904,
Weapons
Assembly
(sans pits)**



Building D, Los Alamos, circa 1944

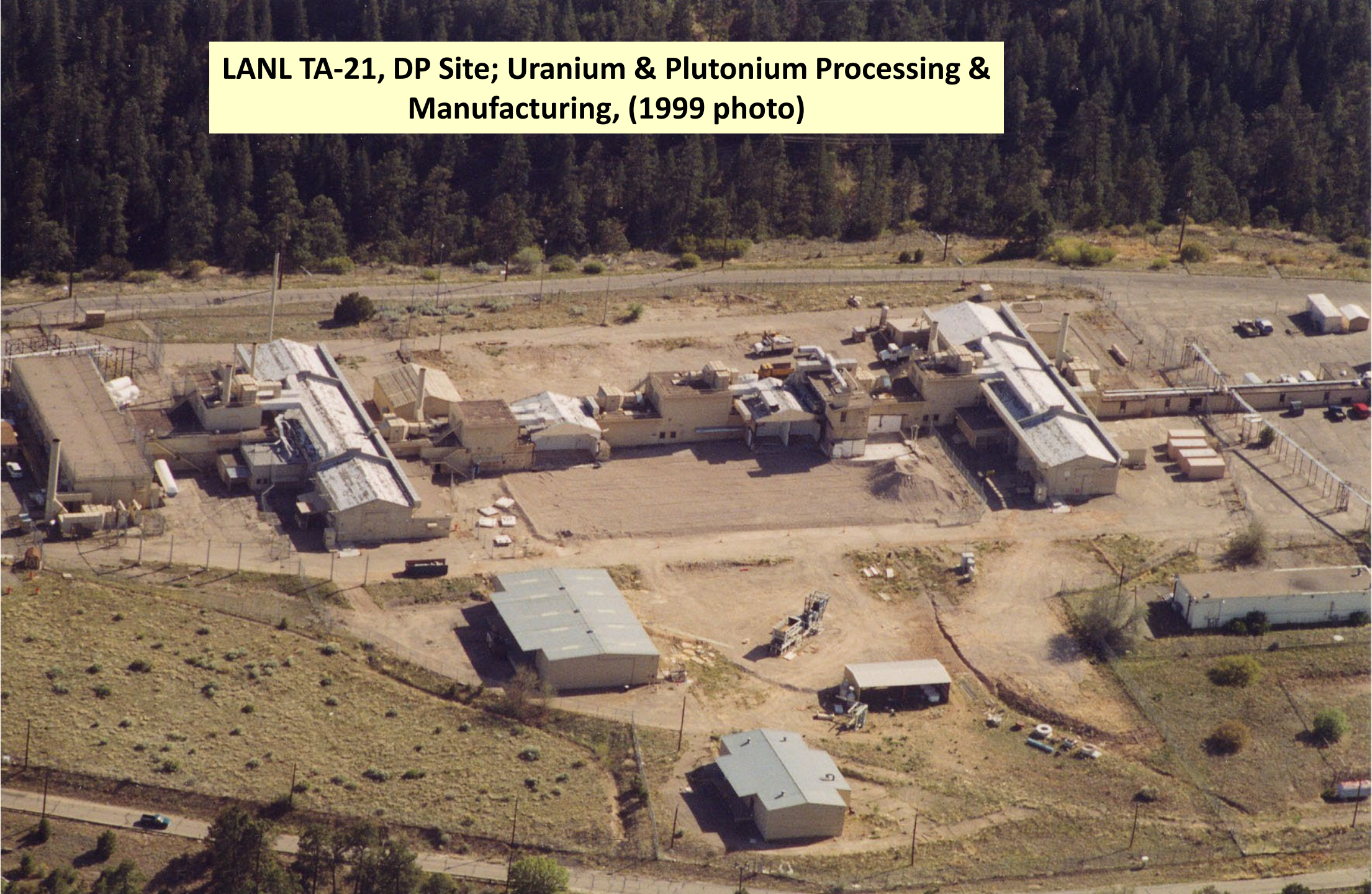


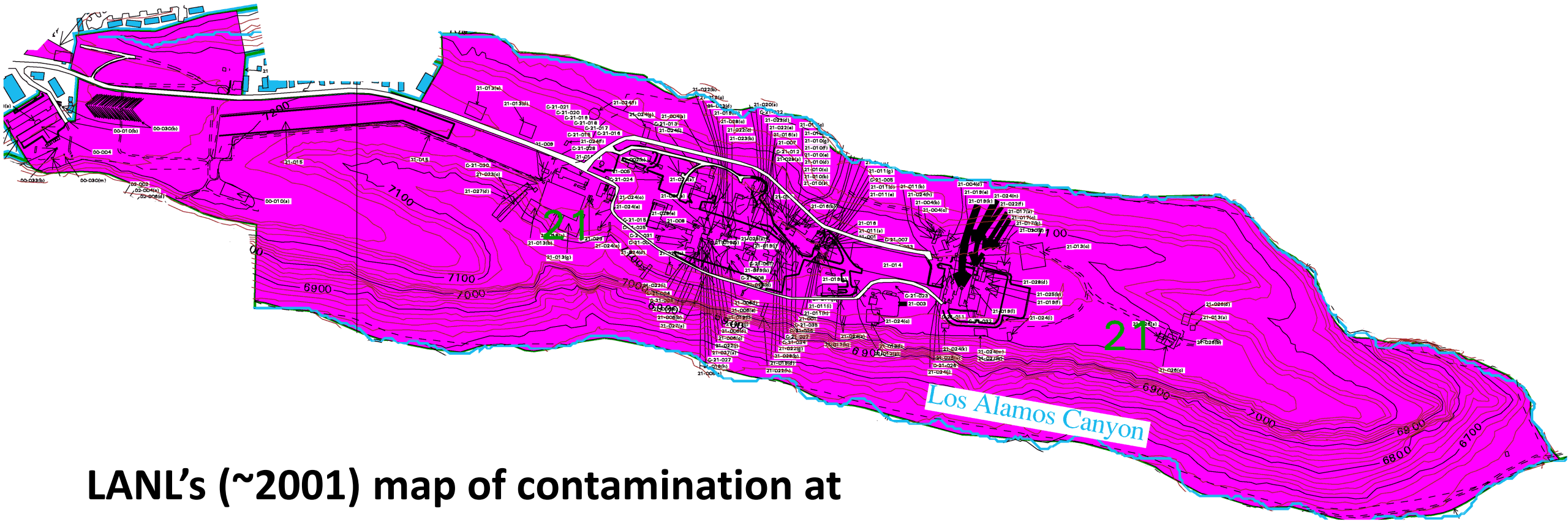
DP Site ("D Prime"), TA-21, which replaced D Building. The Rocky Flats before Rocky Flats.



**DP Site (TA-21); plutonium
manufacturing in foreground**

LANL TA-21, DP Site; Uranium & Plutonium Processing & Manufacturing, (1999 photo)



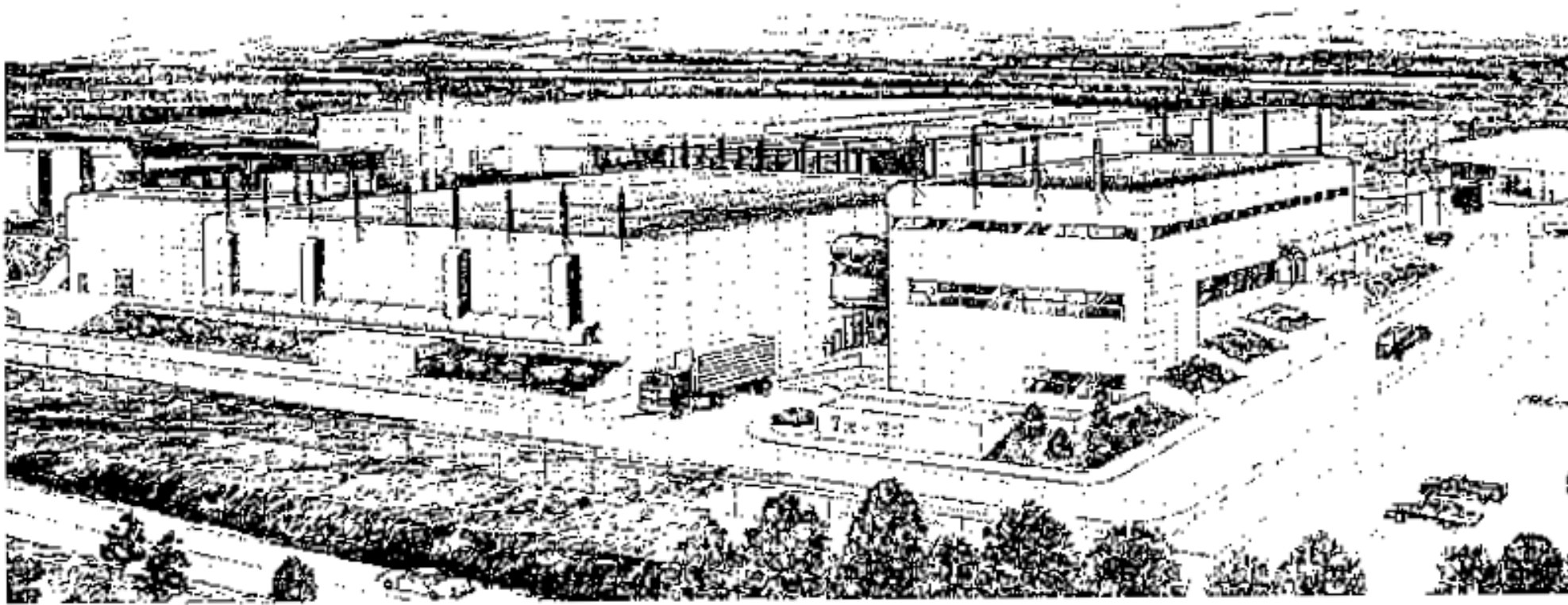


LANL's (~2001) map of contamination at TA-21, DP Site, LANL's former pit production and plutonium (etc.) processing site.



Special Nuclear Materials Research and Development Laboratory Replacement Project at Los Alamos National Laboratory

**A glance
back at
LANL's
first
proposal
for a post-
Rocky
Flats pit
facility**



Architectural rendering of the Special Nuclear Materials Research and Development Laboratory Replacement Project.

Some things don't change: nuclear "needs," greed, and the helpful efforts of NGOs to concentrate nuclear weapons & waste in NM

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Los Alamos Can Supply All N-Bombs

Lab's Annual Plutonium Capacity
May Be Enough for 300 Weapons

7/22/2023

Los Alamos Could Supply Plutonium

CONTINUED FROM PAGE A1

ments provide the most detailed publicly available information to help answer the question of how many bombs Los Alamos could produce.

The answer is this: It appears Los Alamos could build all of the bombs the United States would need to support a 21st century, post-Cold War arsenal, said Christopher Paine, an analyst at the Natural Resources Defense Council, a Washington, D.C., environmental group.

"The significance of it is in the ability of the lab to serve as either an interim or long-term replacement for Rocky Flats," said Brian Costner, head of the Energy Research Foundation, a South Carolina environmental group, and co-author of a study on U.S. nuclear

weapons plutonium work.

To manufacture a plutonium "pit," the explosive core of a nuclear weapon, the metal is heated to more than 1,500 degrees Fahrenheit and melted down, then poured into a graphite mold.

Pits must then be shaped to precise specifications. The work is done inside "glove boxes," which permit workers to handle the radioactive metal remotely, often using lead-lined gloves inserted through sealed portholes.

According to the documents, the metal fabrication area in TA-55 was designed to be able to process and shape 220 pounds of plutonium metal per month.

The amount of plutonium required for a nuclear weapon is a secret, but independent researchers put it at roughly 4 kilograms — 8.8 pounds.

Using that estimate, Paine said

the newly released documents suggest Los Alamos could make about 300 bombs a year. That closely matches an estimate he previously made based on other data about Los Alamos plutonium processing capabilities.

A more conservative estimate, based on the documents' statement that "up to" 12 kilograms — 26.5 pounds — may be used to manufacture a single bomb, yields a production rate of 100 bombs a year.

No one without a security clearance knows whether 100 or 200 or 300 new plutonium pits a year is enough to meet 21st century stockpile needs.

No new bombs are now being built. Questions about whether bombs in the existing stockpile will need to be replaced remain unanswered.

The Department of Energy is trying to plan its future weapons man-

By John Fleck, 12/8/93. Archived at http://lasg.org/Pit_Prod.htm

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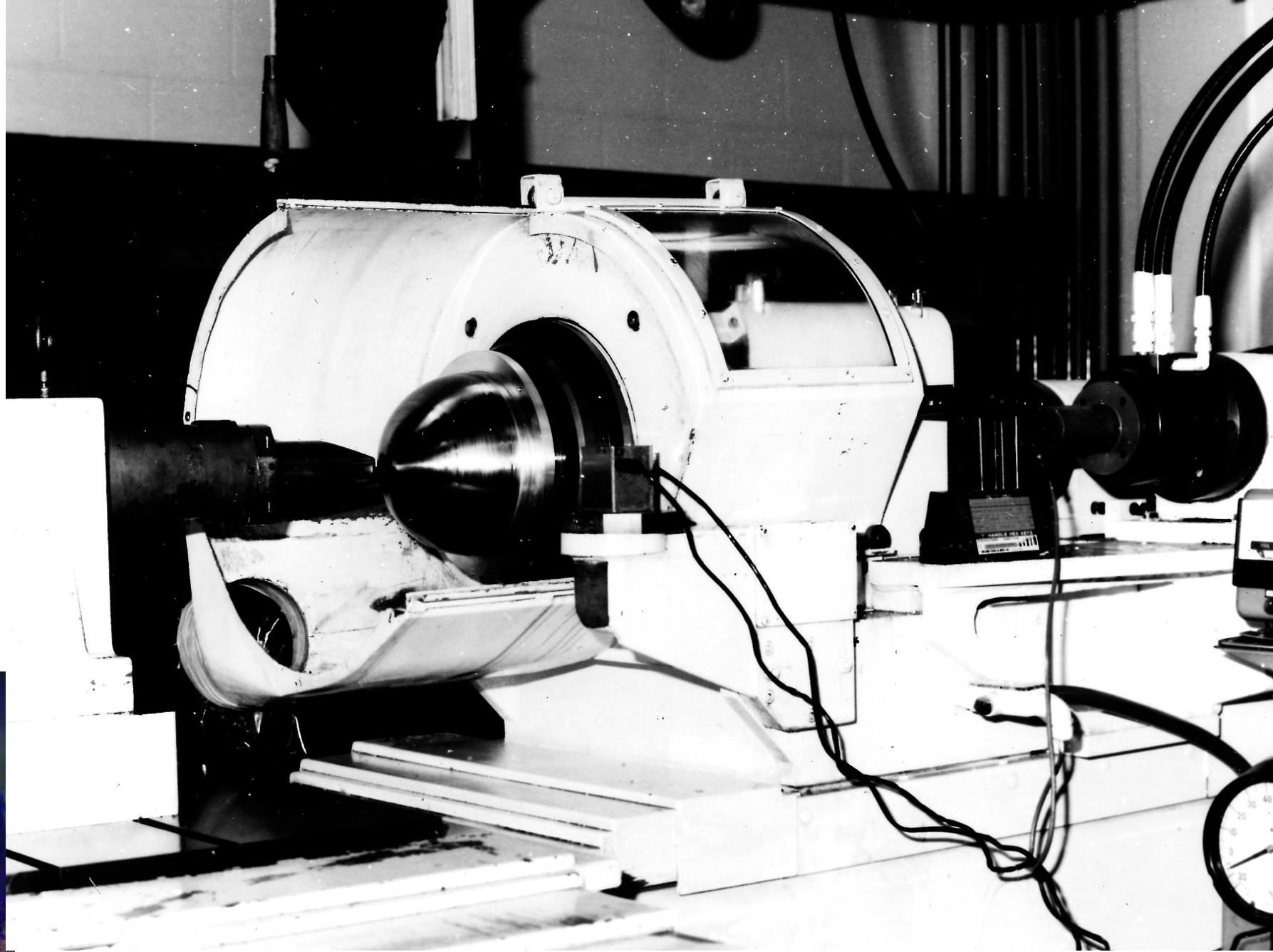


Coater



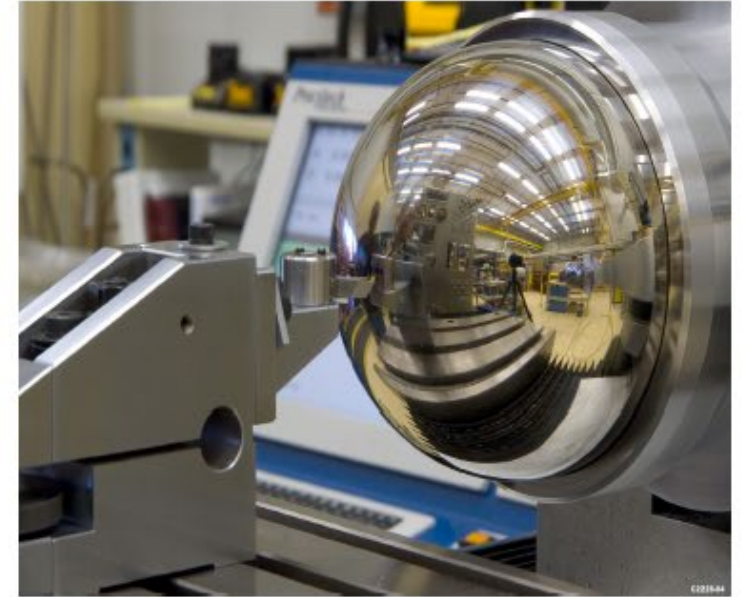
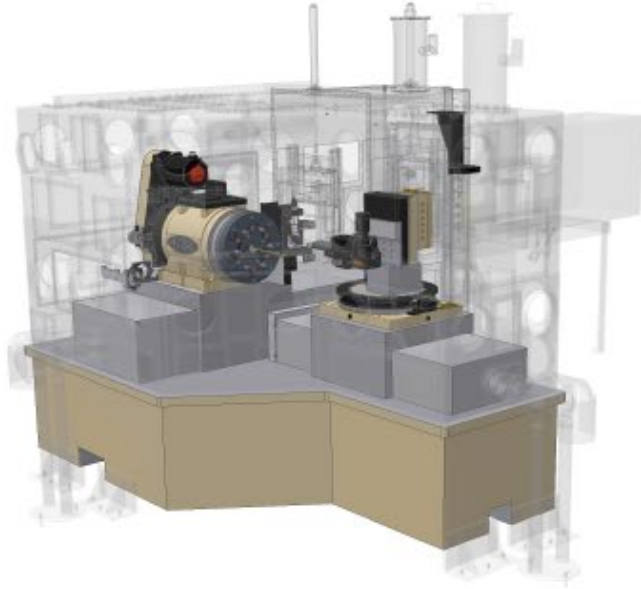
Plutonium Glove Box

Random scenes from the LANL pit production world

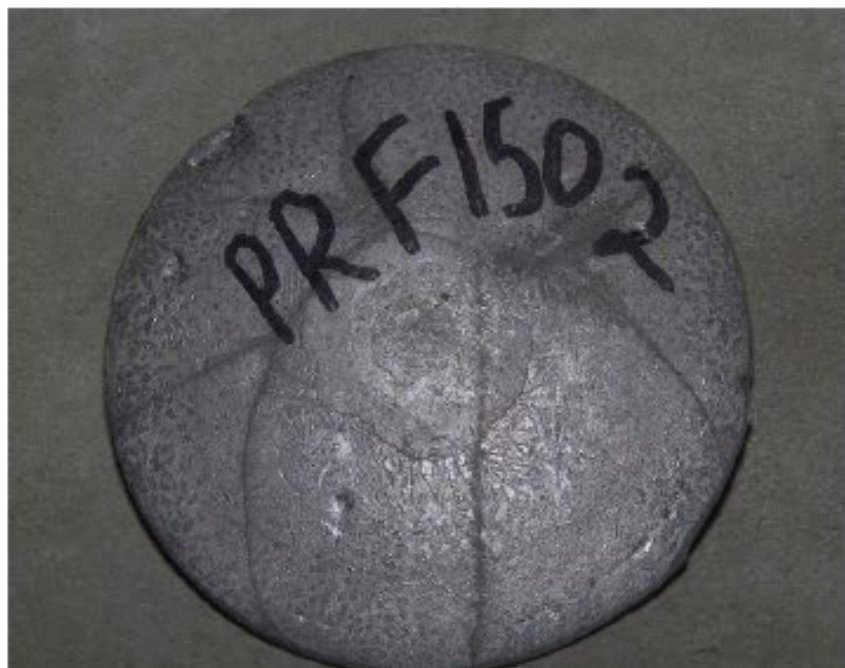
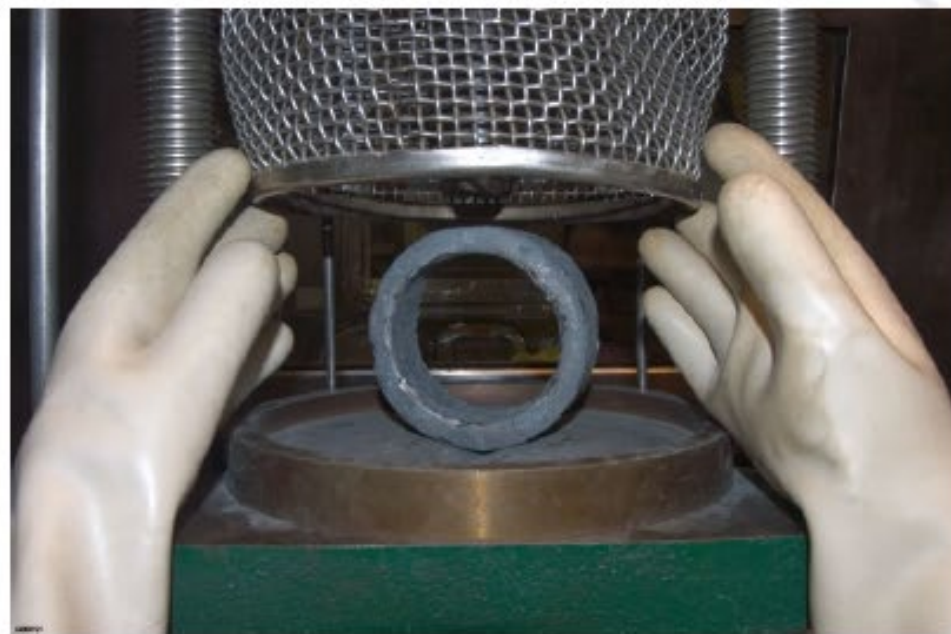


UNCLASSIFIED

Pit Manufacturing (machining)















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Key issue: transportation (I)



Please see: [The troubled logistics of LANL pit production: how will LANL staff and contractors get to work?](#)









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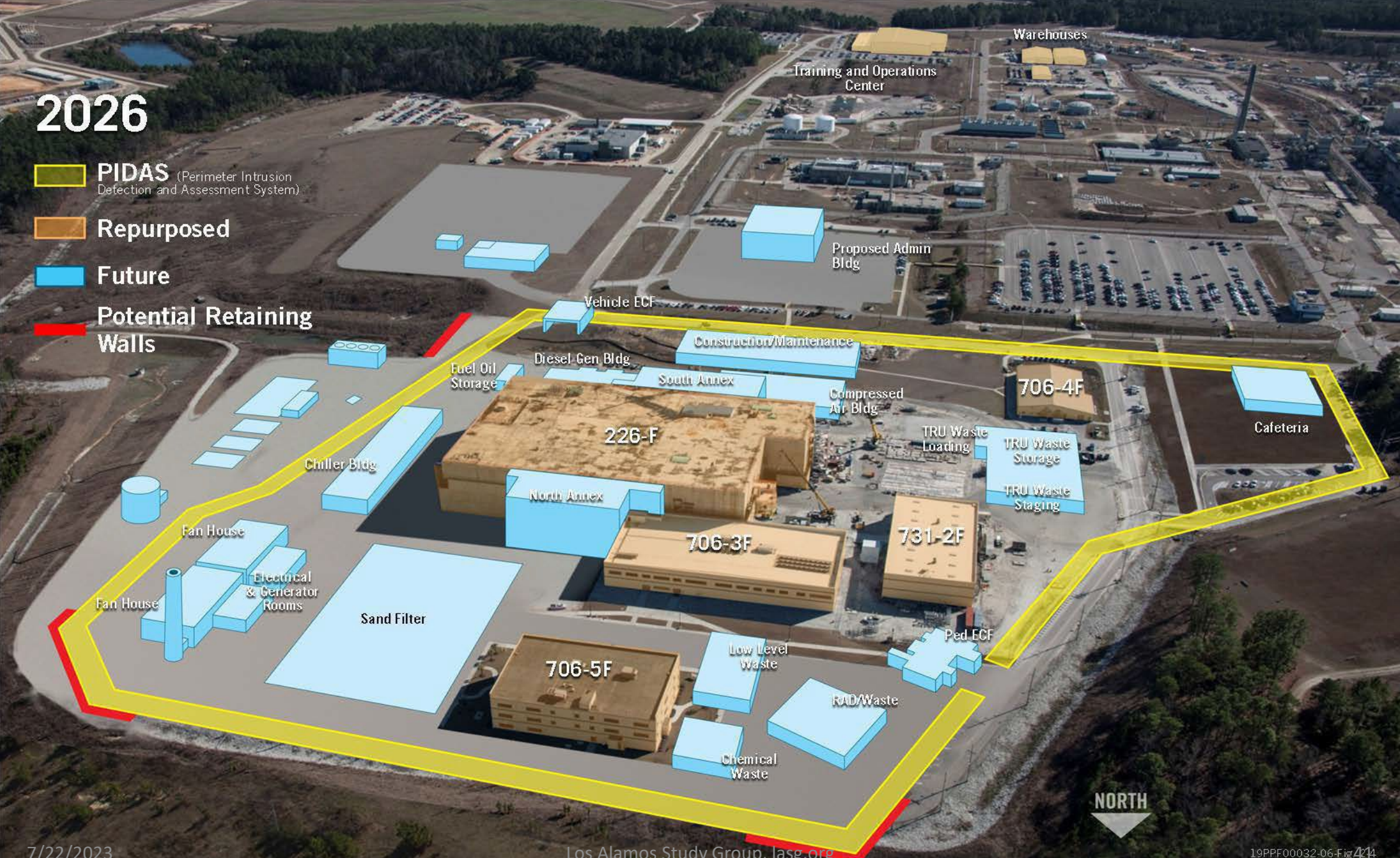
2026

 **PIDAS** (Perimeter Intrusion Detection and Assessment System)

 **Repurposed**

 **Future**

 **Potential Retaining Walls**



Key issue: energy and resource consumption. Not even considering contamination and nuclear waste, LANL is a dirty lab.

- LANL is expected to double its energy use over the coming decade.
- LANL will fail to meet DOE goals for energy efficiency.
- LANL will fail to meet DOE goals for water use efficiency.
- LANL is unlikely to conduct any climate change vulnerability assessment, despite DOE guidelines.
- LANL may build an on-site 10 MW solar field but if so this would provide only 4% of its needs by 2031.
- More than half of LANL's electricity currently derives from coal-fired generation. There are no clear commitments to renewable energy in future, only to power purchase agreements meeting vague criteria.
- NNSA is proposing a \$300 million "Electrical Power Capacity Upgrade" project at LANL ([p. 365](#)), including a new 115 kV transmission line across the Caja del Rio. LANL consumes 80% of the energy supplied to the Los Alamos Power Pool (LAPP).
- Back-of-envelope calculations suggest LANL commuting entails very roughly 175 million road miles per year. With deliveries, etc. ~200,000,000 vehicle-miles/year might be a good guess.
- We can be sure LANL is the largest single cause of greenhouse gas emissions in a wide region.
- For references and more see: [LANL releases 2021 "Site Sustainability Plan" for "rapidly changing and growing mission"](#), 2/24/21 and ["Third power line proposed for Los Alamos,"](#) 4/19/21.

Key issue: housing, briefly:

- There isn't enough. Pit production is only one expanding mission.
- Housing off The Hill creates difficult transportation problems. LANL's so-called "[Campus Master Plan](#)" offers no solutions to these problems.
- Senior federal manager to me, this fall: "If NNSA is serious about pit production it will build barracks at LANL. I see no other way."
- My opinion: there are enough LANL staff living or proposing to live in Santa Fe to have a significant effect on housing prices in some parts of the market. How much of an effect I do not know.
- Current housing proposals for Los Alamos County will help but are not nearly enough – especially if Los Alamos and White Rock seek to have a well-rounded set of business services.
- Pit production will fundamentally change Los Alamos, one way or another.
- LANL's construction workers will need to live somewhere. "Man camps" in the pueblos are not a good solution, in my opinion.
- Large-scale commuting from Albuquerque and Rio Rancho is not, and will never be, sustainable.
- The lure of a new bridge and highways to Santa Fe and I-15 at Waldo will remain.
- Success at "technology spinoffs" will exacerbate the housing problem.