

Jornada del Muerto or Camino Real: Nuclear Weapons and the Future of New Mexico

We have had the bomb on our minds since 1945. It was first our weaponry and then our diplomacy, and now it's our economy. How can we suppose that something so monstrously powerful would not, after years, compose our identity?

E.L. Doctorow

Only he who knows the empire of might and knows how not to respect it is capable of love and justice.

Simone Weil

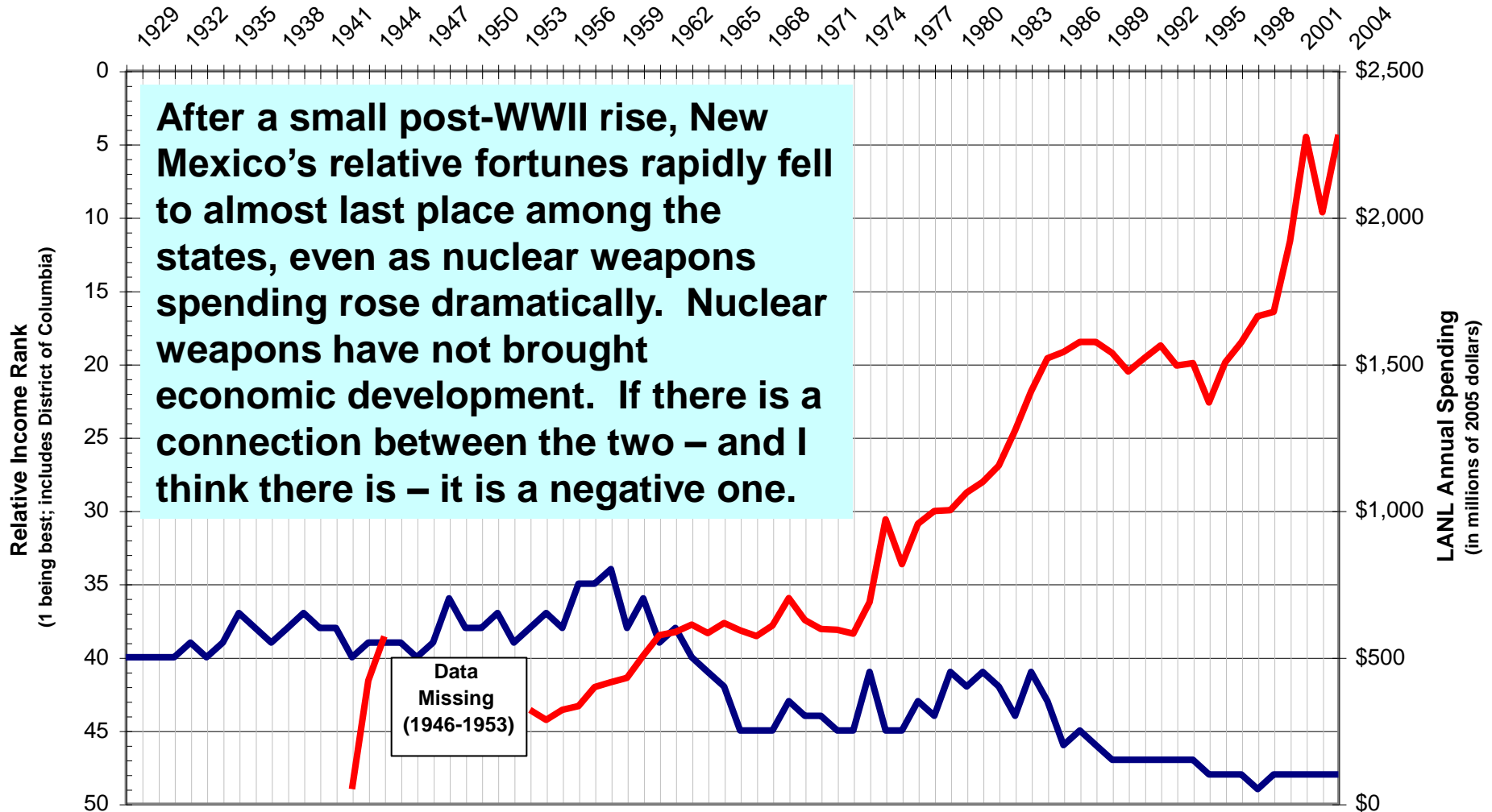
**Talk for the
Intergovernmental Council of
the Enchanted Circle**



**Greg Mello
June 14, 2006**

Per Capita Personal Income in New Mexico relative to the U.S. as a whole (1929-2004) with Los Alamos National Labs (LANL) annual spending (1943-2004)

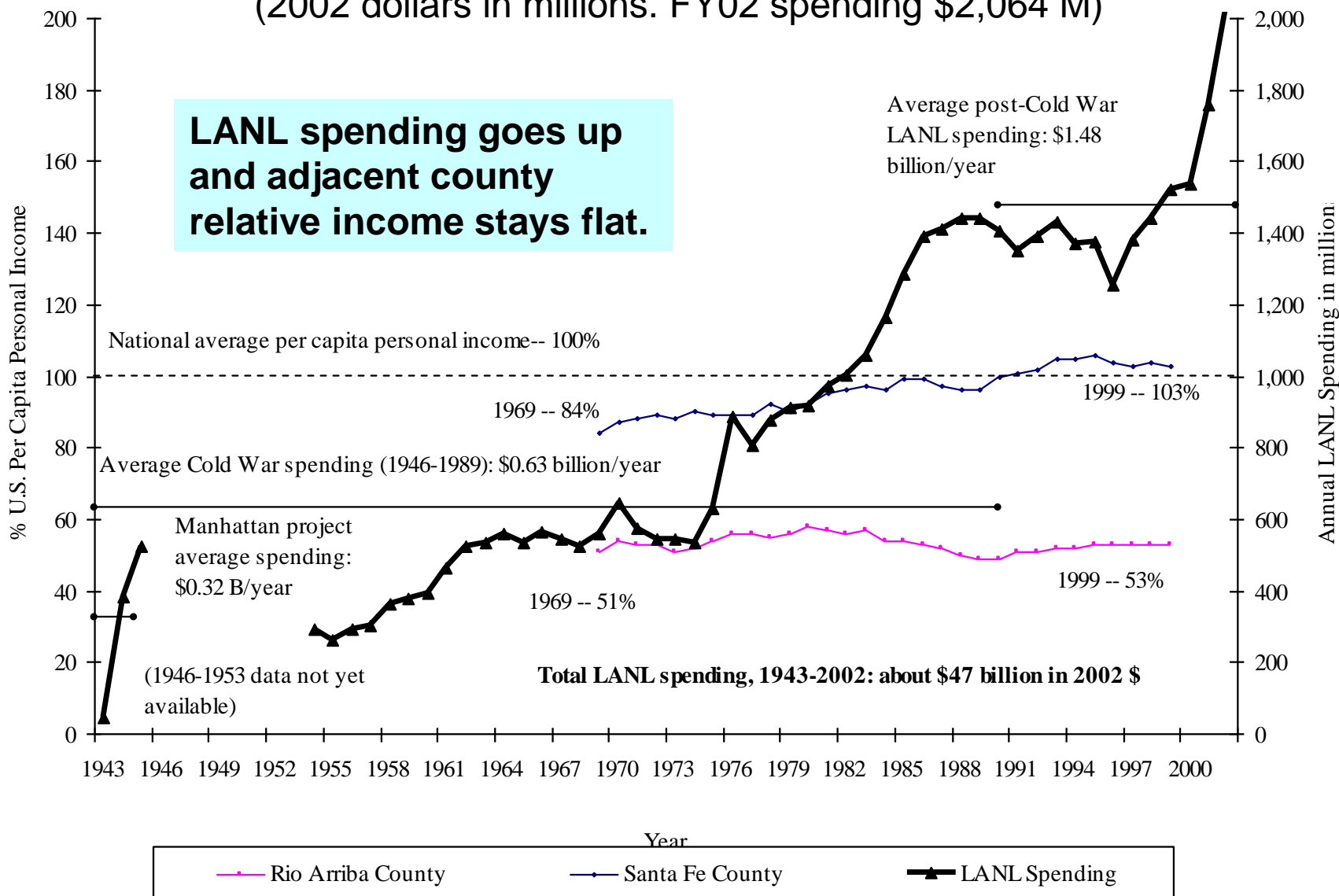
— New Mexico's per capita income rank
 — LANL annual spending



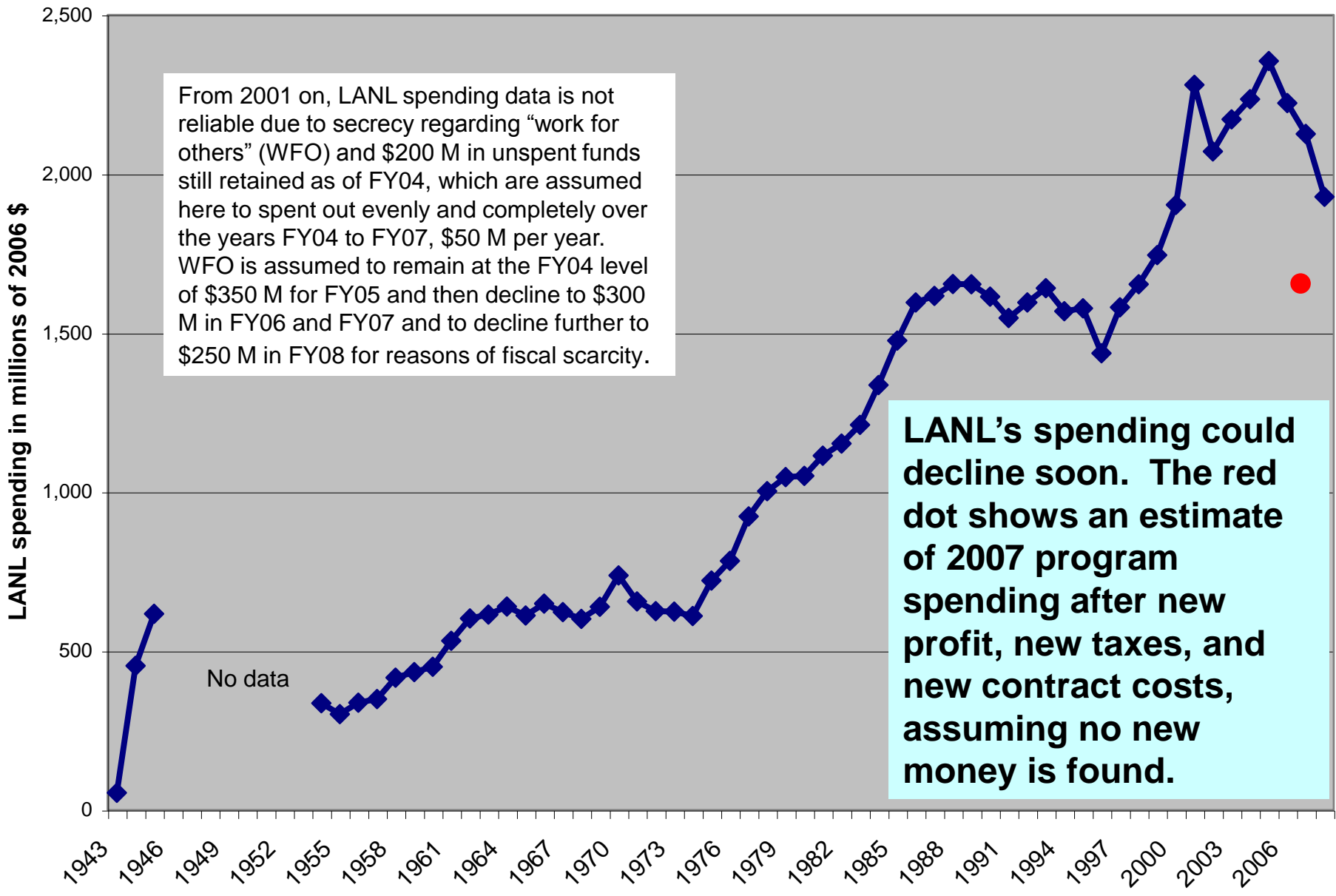
Sources: Bureau of Economic Analysis; Schwartz, S. *Atomic Audit* (1998); Los Alamos National Laboratory; and Los Alamos Study Group.

Historical Los Alamos Site (Site Y, LASL, LANL) Spending, 1943-2002, with Relative Per Capita Personal Income in Two Neighboring Counties

(2002 dollars in millions. FY02 spending \$2,064 M)



Historic LANL spending to 2006, estimates for 2007 and 2008

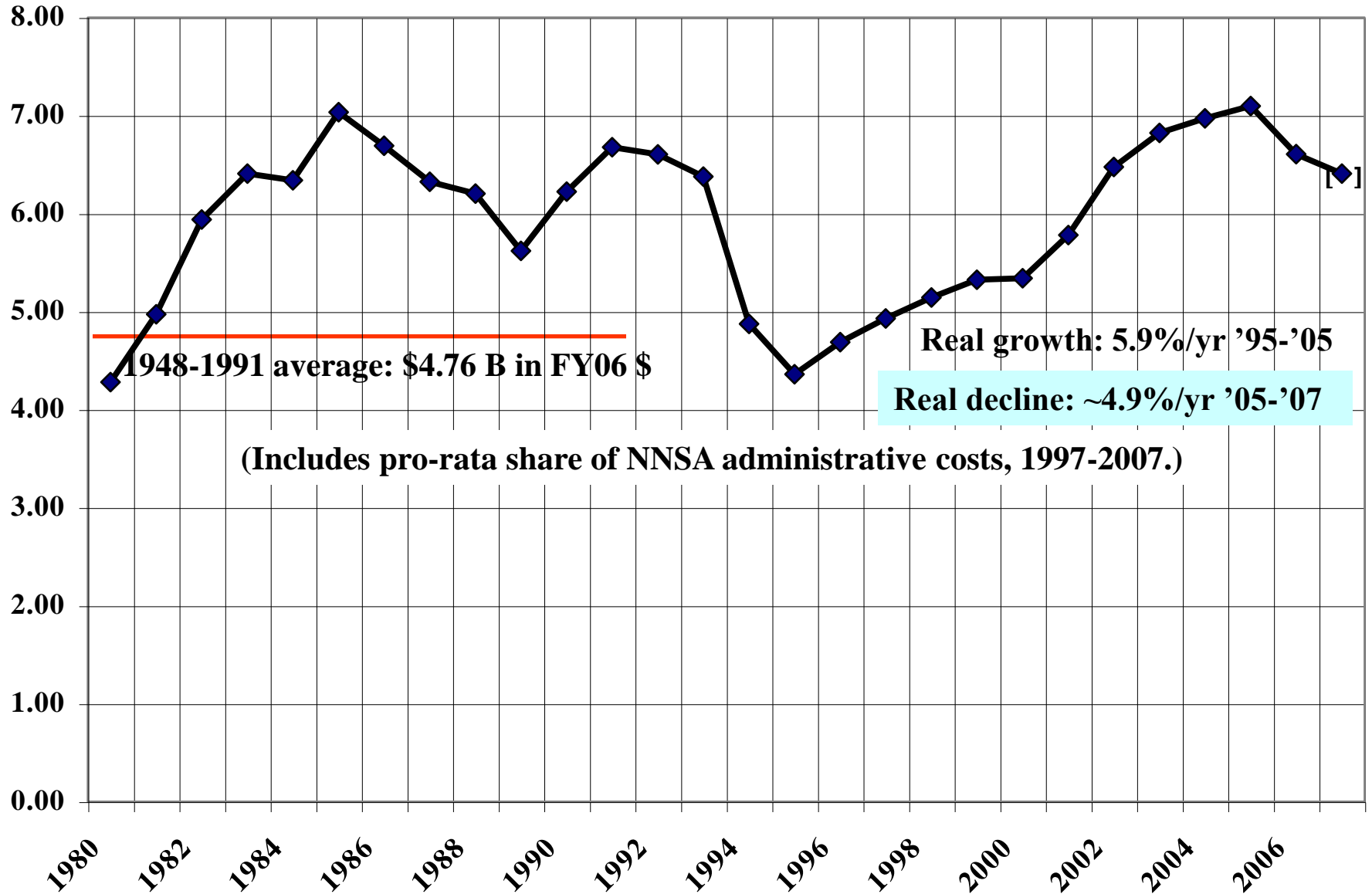


From 2001 on, LANL spending data is not reliable due to secrecy regarding "work for others" (WFO) and \$200 M in unspent funds still retained as of FY04, which are assumed here to be spent out evenly and completely over the years FY04 to FY07, \$50 M per year. WFO is assumed to remain at the FY04 level of \$350 M for FY05 and then decline to \$300 M in FY06 and FY07 and to decline further to \$250 M in FY08 for reasons of fiscal scarcity.

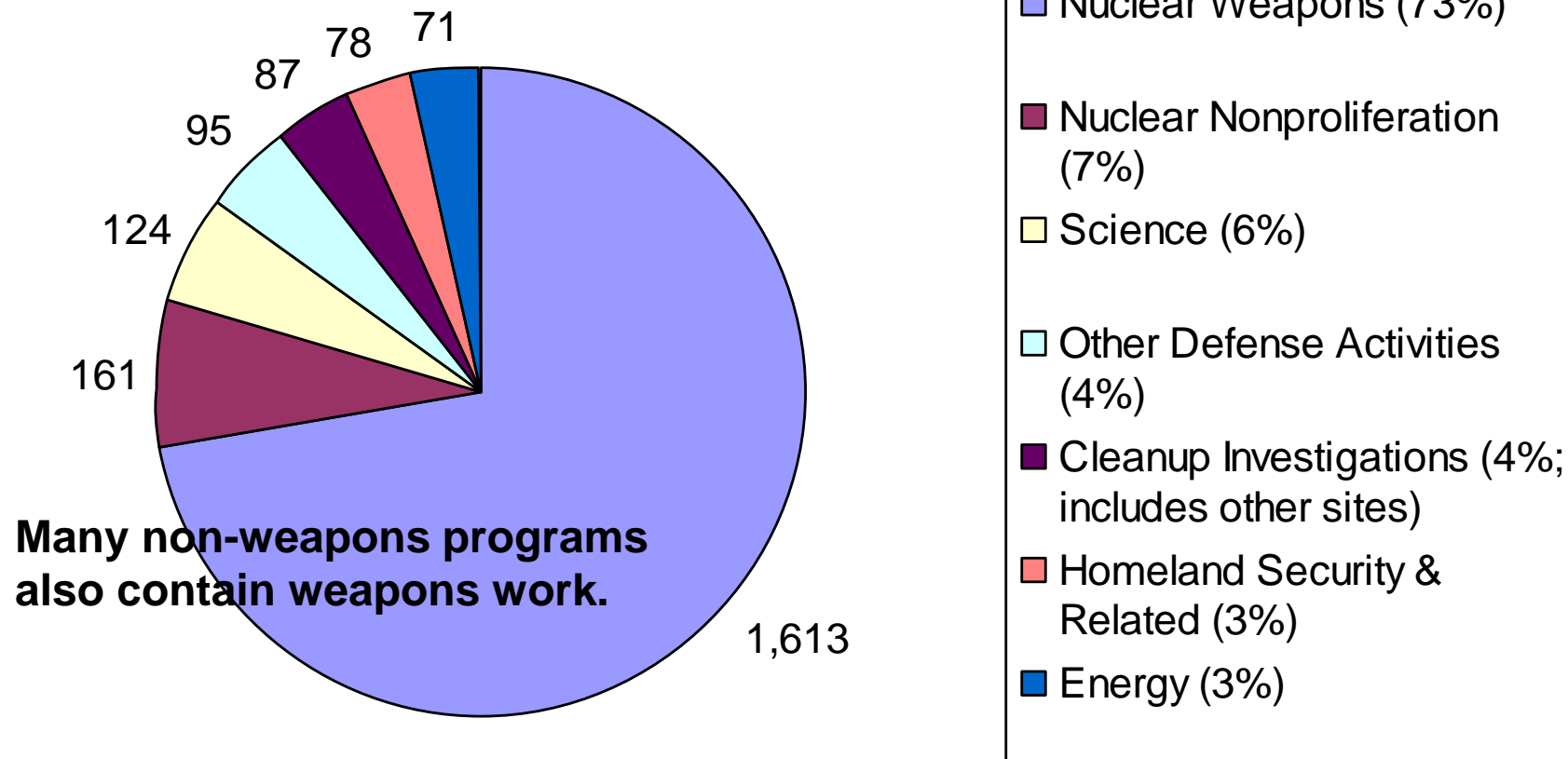
LANL's spending could decline soon. The red dot shows an estimate of 2007 program spending after new profit, new taxes, and new contract costs, assuming no new money is found.

DOE Nuclear Weapons Activities Spending, 1980 – 2007 (2006 \$)

Brookings, Schwartz et. al., *Atomic Audit* (1980-1996), DOE (1997-2007 [requested])

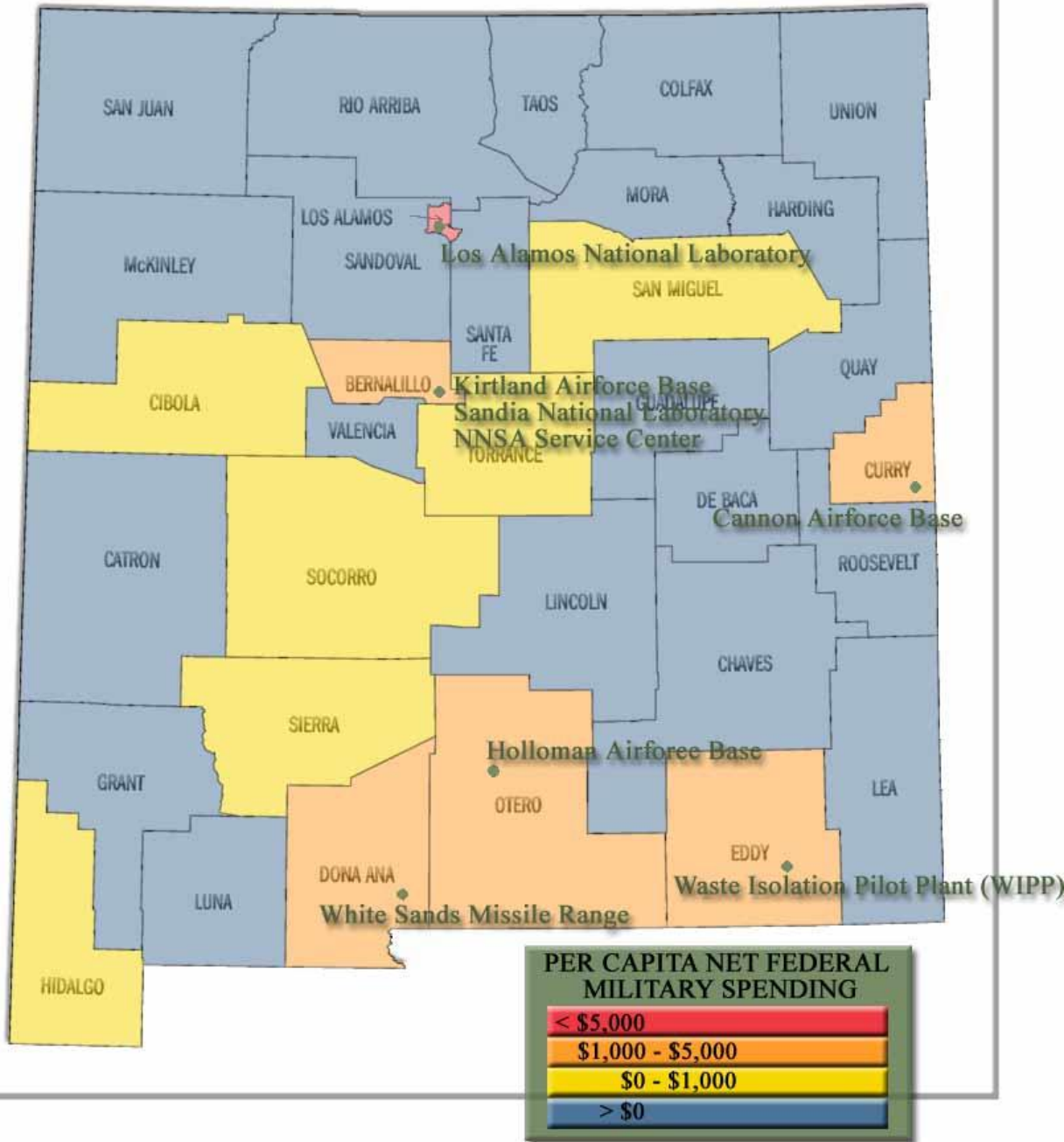


Los Alamos National Laboratory and Site Office FY 2004 Funding in Millions (All Sources): \$2,229 M (includes \$200 M unspent prior funding)



LANL is a weapons lab and not much more. This focus will increase.

Department of Energy Weapons Facilities and
 Department of Defense Military Base in New Mexico



Military spending is localized; military taxation is everywhere.

Most NM counties LOSE in the military “pork game.”

(This DRAFT analysis and map does not include the effects of commuting.)

New Mexico's Economic & Social Health: Existing Policies Are Failing

Please refer to GREEN handout

These social, health, and educational realities insure that most companies will locate elsewhere, perhaps except for those wanting to exploit cheap labor or pollute the environment. This is called “pollution shopping.”

Making plutonium “pits” for nuclear weapons pollutes the environment and produces hazards both chronic and acute. This is a major reason northern New Mexico is being selected for the job. NNSA believes political weakness will make New Mexicans accept what others with more wealth and income will not accept.

U.S. military spending approaches \$900 billion, \$7,600 per household

Please refer to yellow handout

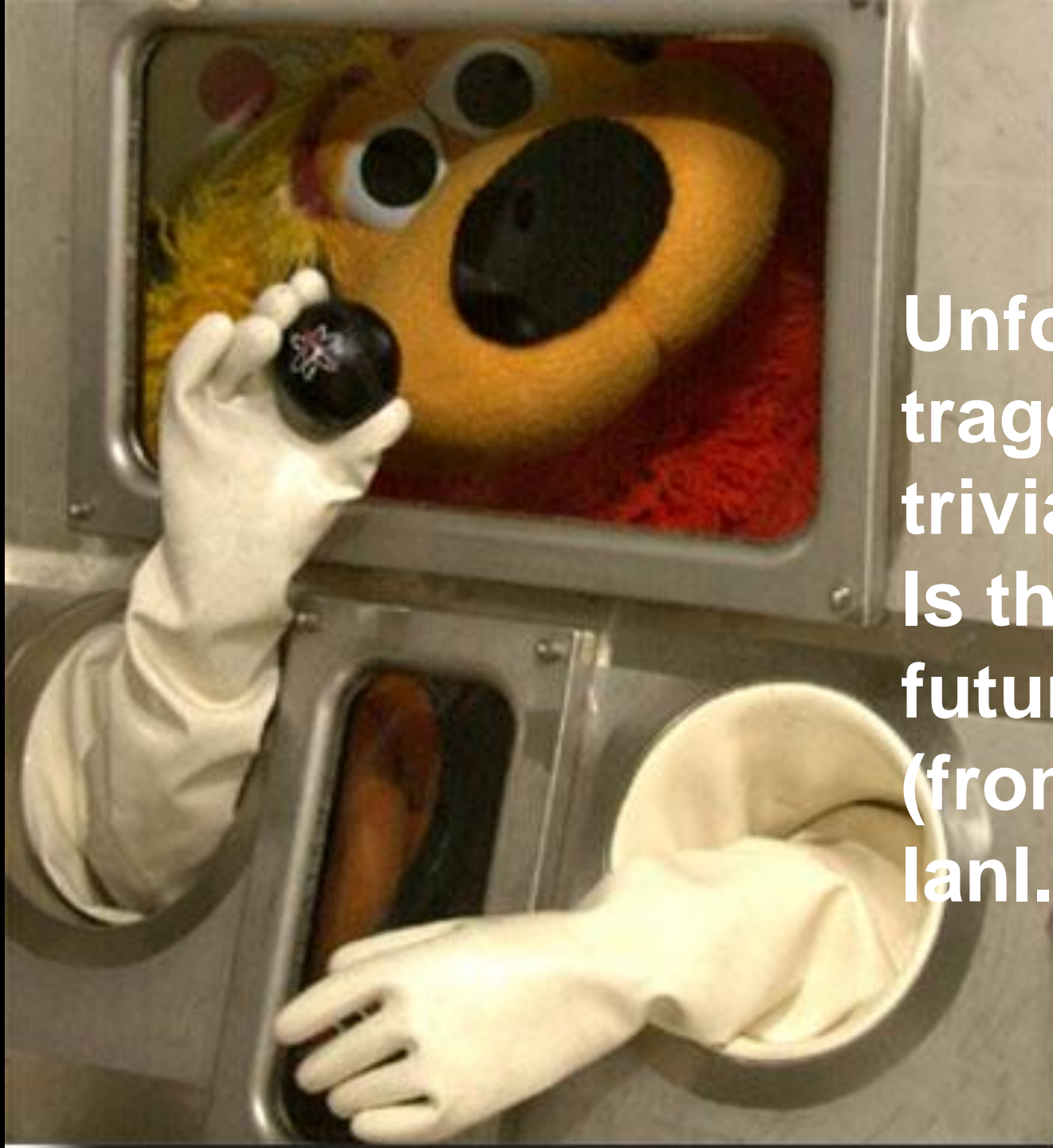
Military spending now consumes 58% of all U.S. discretionary spending and 44% of total federal outlays for all purposes. Bilmes and Stiglitz (Nobel Laureate, economics) estimate the Iraq War will cost \$1-2 trillion. The federal debt, increasingly held in foreign hands, is much larger than ever before. These spending priorities take about the half the taxes from rural counties and give the money to the military and its contractors, producing little or nothing that people need and bleeding funds from where they are needed.

Competition – or Cartel?

Privatization and Crony Capitalism in the Nuclear Weapons Complex

Please refer to BLUE handout

Just 9 companies spend half of DOE's budget; the nuclear weapons business of NNSA is 96% privatized. Four of these companies now run LANL. They are there to make sure LANL quits fooling around and starts making new weapons and the "pits" NNSA wants. For this they get a \$37 billion, 20-year no-bid contract, probably along with promises of other (more lucrative, less public) work elsewhere. Federal oversight of all kinds, such as safety, is diminishing fast; the big contractors are now supposed to monitor and grade themselves with minimal oversight.



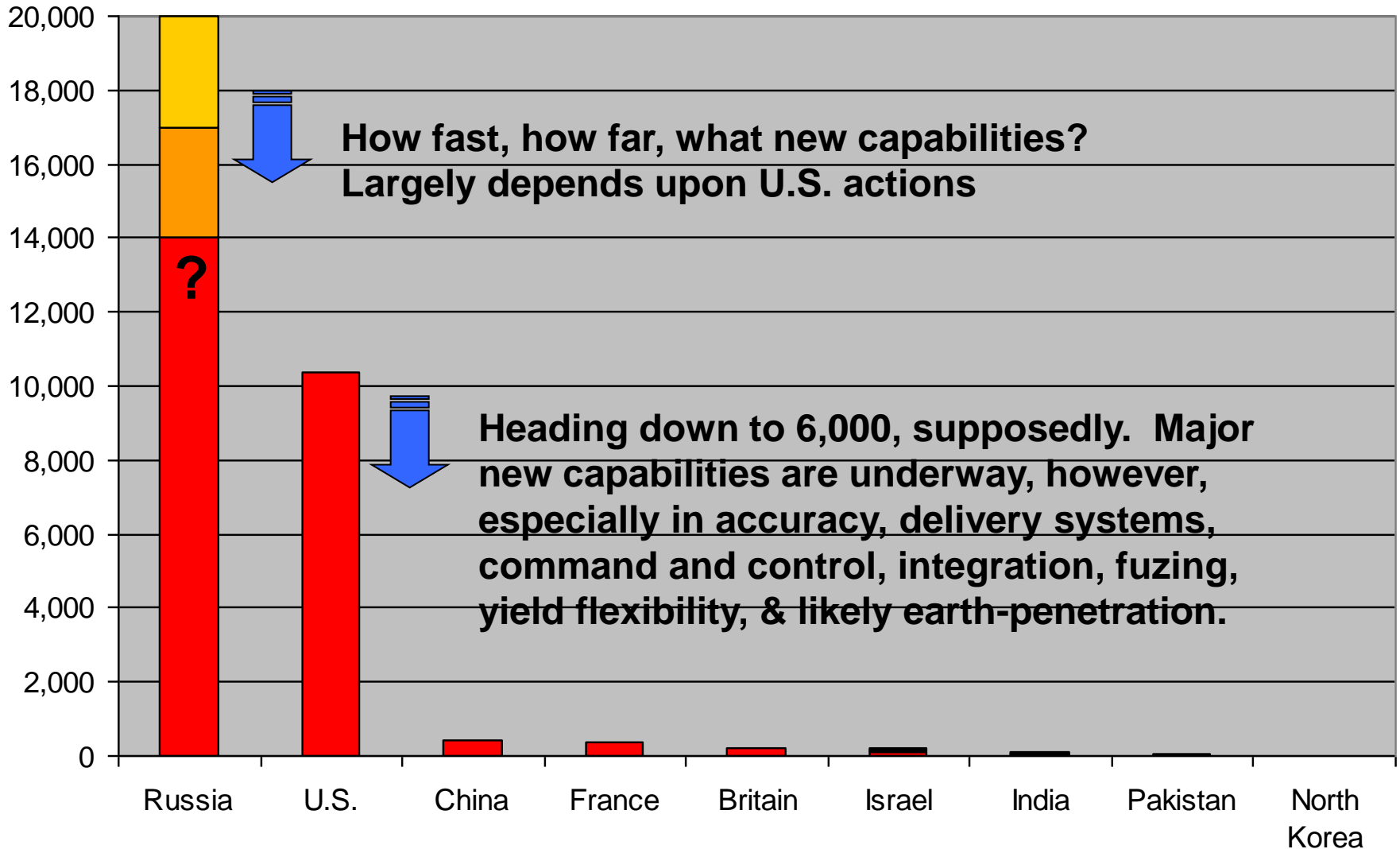
**Unfolding
tragedy
trivialized:
Is this our
future?
(from
lanl.gov)**

Context: Nuclear weapon stockpiles

- **Weaponized stockpiles (2004 data):** 9 countries, ~25,000 to ~32,000 weapons
 - 5 countries in NPT (“P5”): ~28,000 ± ~3,000 weapons (99%)
 - 4 countries not in NPT: ~270 ± ~80 weapons (1% of total)
 - *Weapons vary much more greatly in capability than devices.*
- **Latent capabilities** (a few *dozen* countries, some more than others; Iran is in this group and is about 10 years from a nuclear weapon):
 - *Many* countries own or control more than ~4 kg Pu (reactor-grade or weapons-grade; minimum needed ~ 1 kg) or ~20 kg HEU. Neptunium also works.
 - *Many* other countries could produce these materials if they chose.

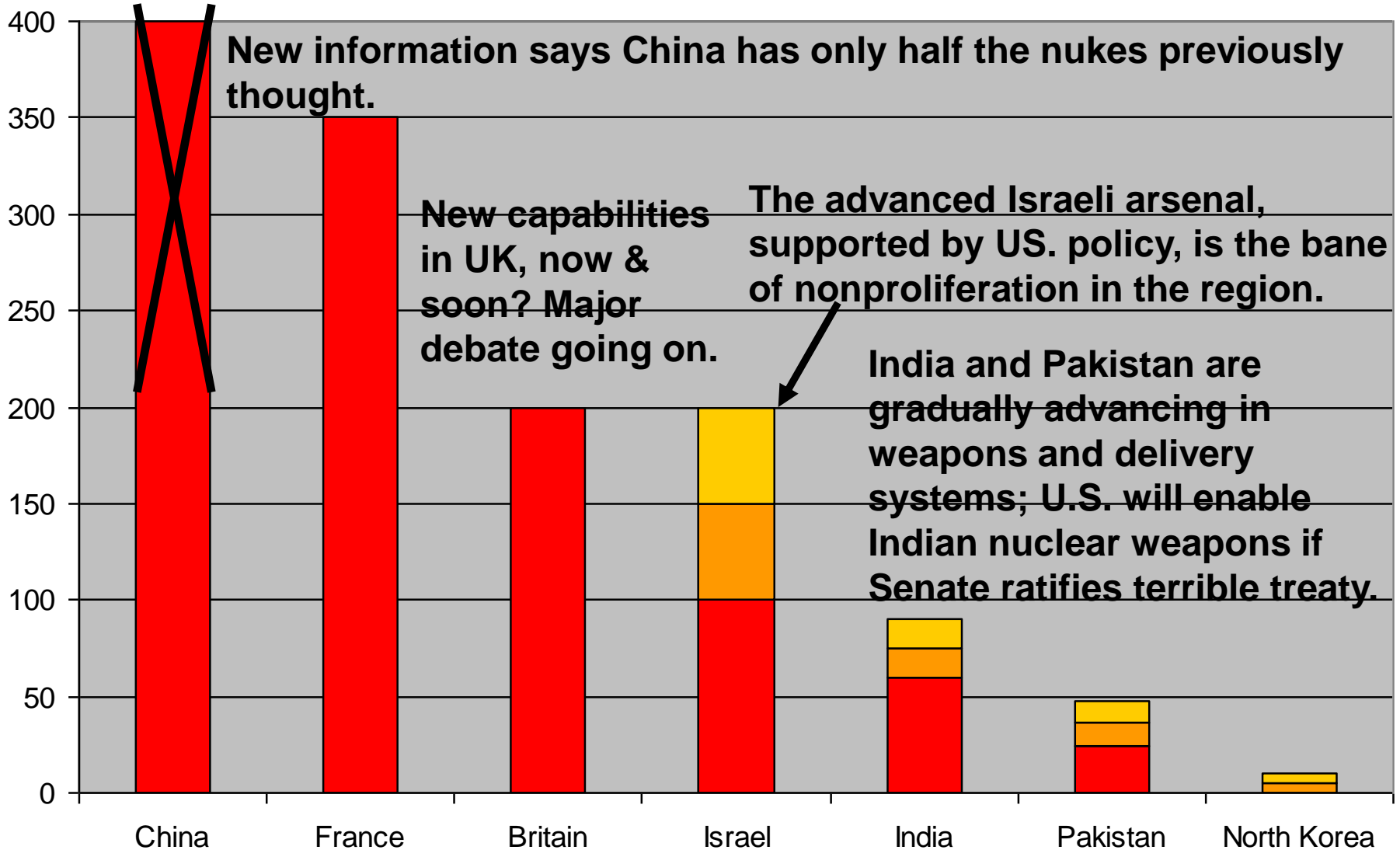
Moral #1: You can't preach temperance from a bar stool.

World Nuclear Arsenals, 2004



Sources: NRDC, FAS, GlobalSecurity.org, others

World Nuclear Arsenals (Other Than U.S. and Russia), 2004



Sources: NRDC, FAS, GlobalSecurity.org, others

Projected U.S. Nuclear Stockpile, 2012 (NRDC)

Warhead		Number	Yield (kt)	Total Yield (kt)
W78	ICBM	400	335	134,000
W87	ICBM	545	300	163,500
W76	SLBM	1,840	100	184,000
W88	SLBM	400	475	190,000
B61-3	Bomb	200	170	34,000
B61-4	Bomb	200	170	34,000
B61-7	Bomb	430	350	150,500
B61-10	Bomb	180	170	30,600
B61-11	Bomb	35	350	12,250
B83-0/1	Bomb	625	1,200	750,000
W80-1	CM	825	150	123,750
W80-0	CM	265	150	39,750
Total		5,945		1,846,350

The (classified) stockpile plan is not locked in by treaty or and includes major qualitative “upgrades.” Total yield ~ 615 World War II’s @ ~ 3 MT.



B61-11 earth-penetrating bomb being loaded in B-2. Fifty of these bombs were produced without congressional debate.

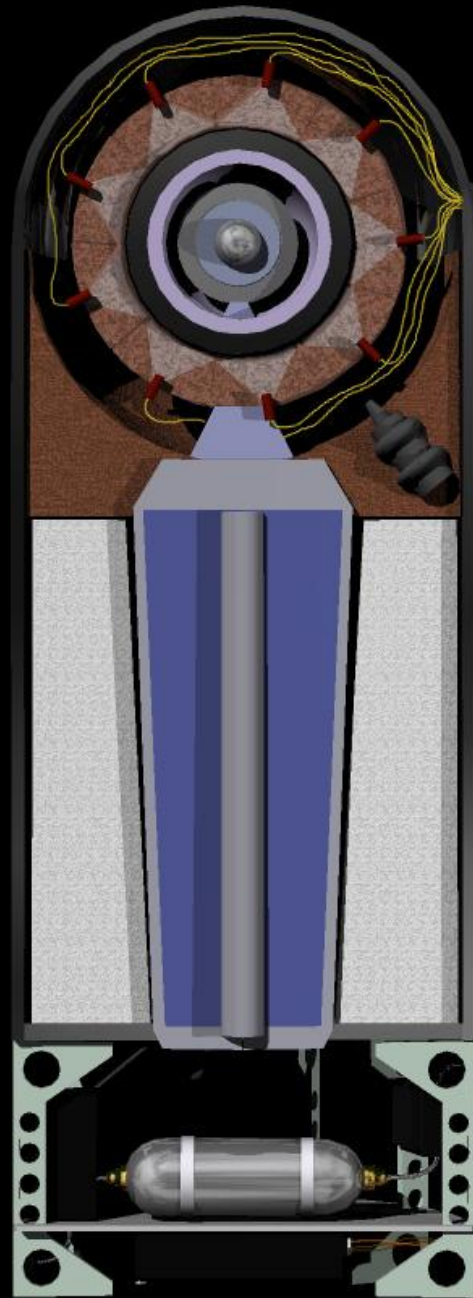
This photo and next: Paul Shambroom



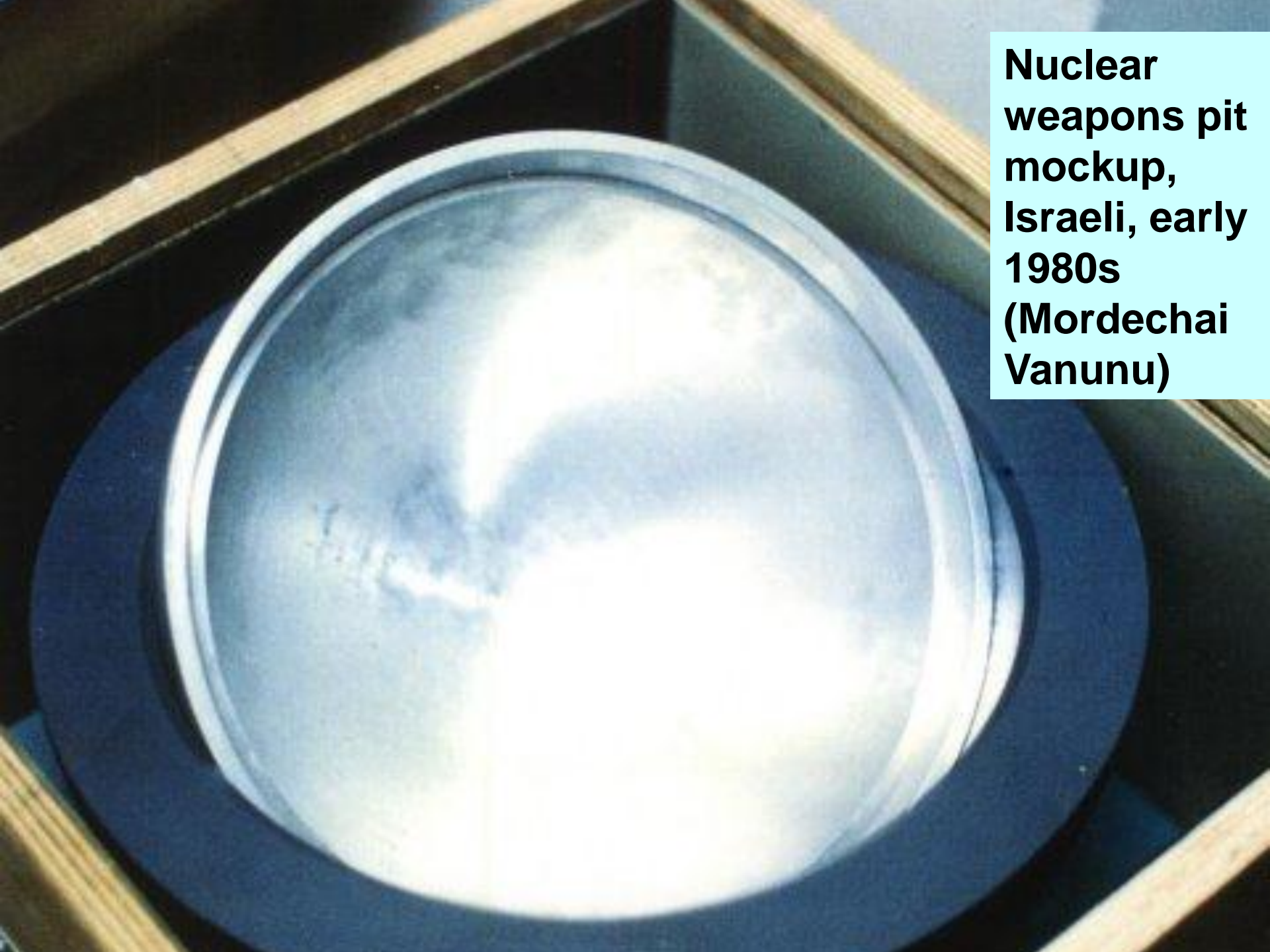
One D5 missile with 8 x 475 KT W88 warheads comprises 3.8 MT of explosives – more than the 3 MT used in WWII. There are 24 missiles on an Ohio-class submarine; most warheads are 100 KT W76s. Accuracy upgrades to about 5 meters are reportedly available soon – enabling new “missions” for conventional warheads (and lower-yield nuclear ones).

Idealized nuclear weapon cross section, early 1960s. The “pit” is the concentric set of shells inside the high explosive at the top. Together these are called the “primary” (nuclear explosive).

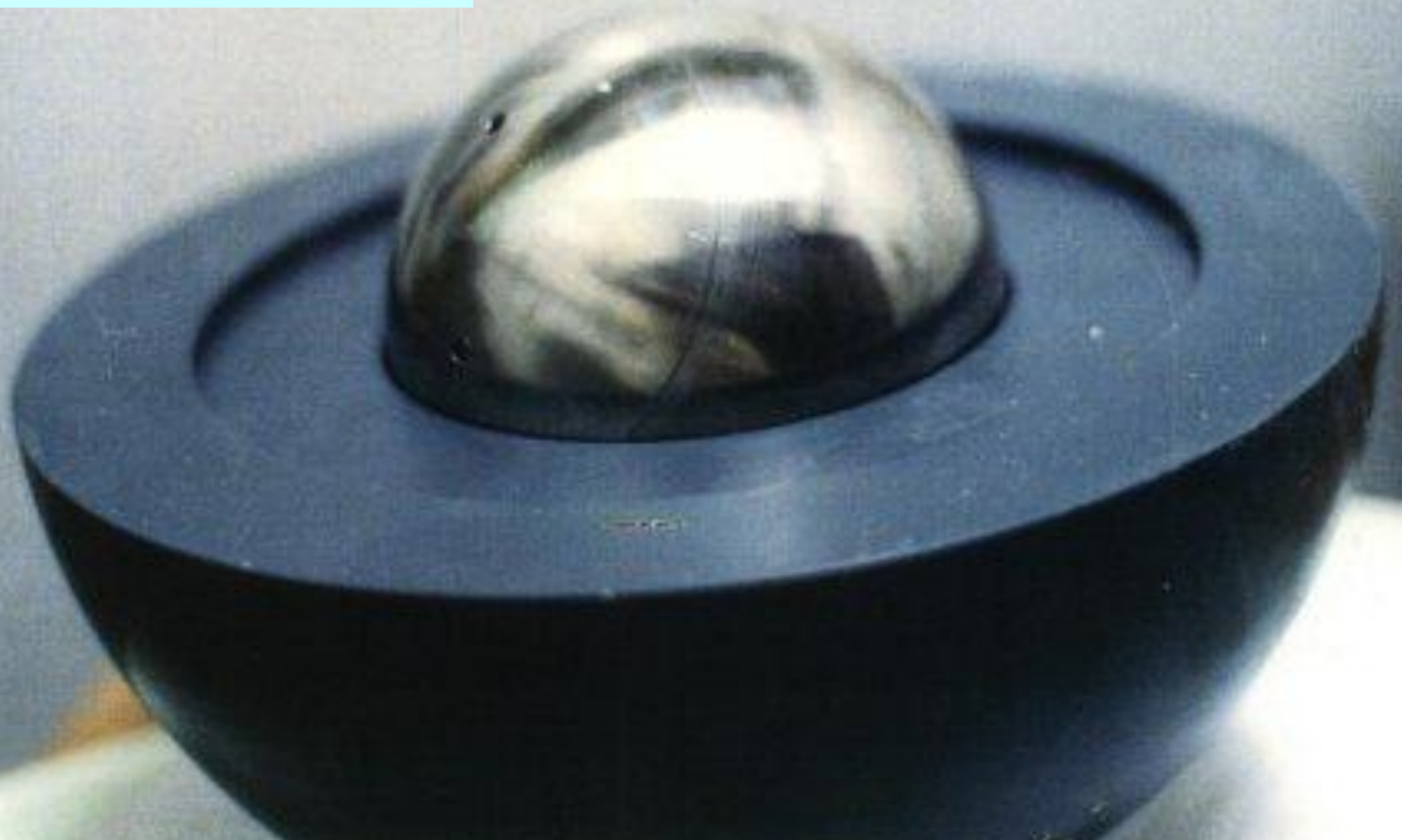
Some modern “pits” may be ellipsoidal and have just two detonators, one at each of the poles. This enables smaller diameter primaries.



**Nuclear
weapons pit
mockup,
Israeli, early
1980s
(Mordechai
Vanunu)**



**Israeli pit mockup
showing hole for
boost gas tube (to
be welded on later)
(Vanunu)**



It is illegal to maintain nuclear weapons indefinitely.

“Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and of a treaty on general and complete disarmament under strict and effective international control.”

– *Article VI, Nuclear Nonproliferation Treaty (NPT), ratified by the United States and entered into force in 1970.*

“There exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control.”

– *Unanimous judgment of the International Court of Justice, 1996, “Legality of the Threat or Use of Nuclear Weapons.”*

“The Conference agrees on...[a]n unequivocal undertaking by the nuclear weapon States to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament, to which all States parties are committed under article VI.”

– *from the consensus agreement of NPT signatories at the 2000 NPT Review Conference, including the U.S., Russia, China, France, and the U.K.*

U.S. domestic nuclear weapons complex, main sites



yellow = DoD deployments
white = NNSA labs & plants
red = NNSA management



LANL main technical area (TA-3), looking SSW, old photo

**LANL TA-3 Sigma
Complex (non-Pu
pit parts and pit
assembly)**



Dual-Axis Radiographic Hydrotest (DARHT) Facility, LANL, circa 1999 (pit certification)





“Appaloosa”/“Dynex” vessels at LANL TA-60 – for pit explosive “subcritical” testing above ground using real Pu-239 or -242. These are single-axis vessels.

**LANL TA-54, Area G
Nuclear & Chemical
Waste Disposal**





LANL Area G pit,
from National
Geographic



**Area G pit,
November
2004, looking
west**



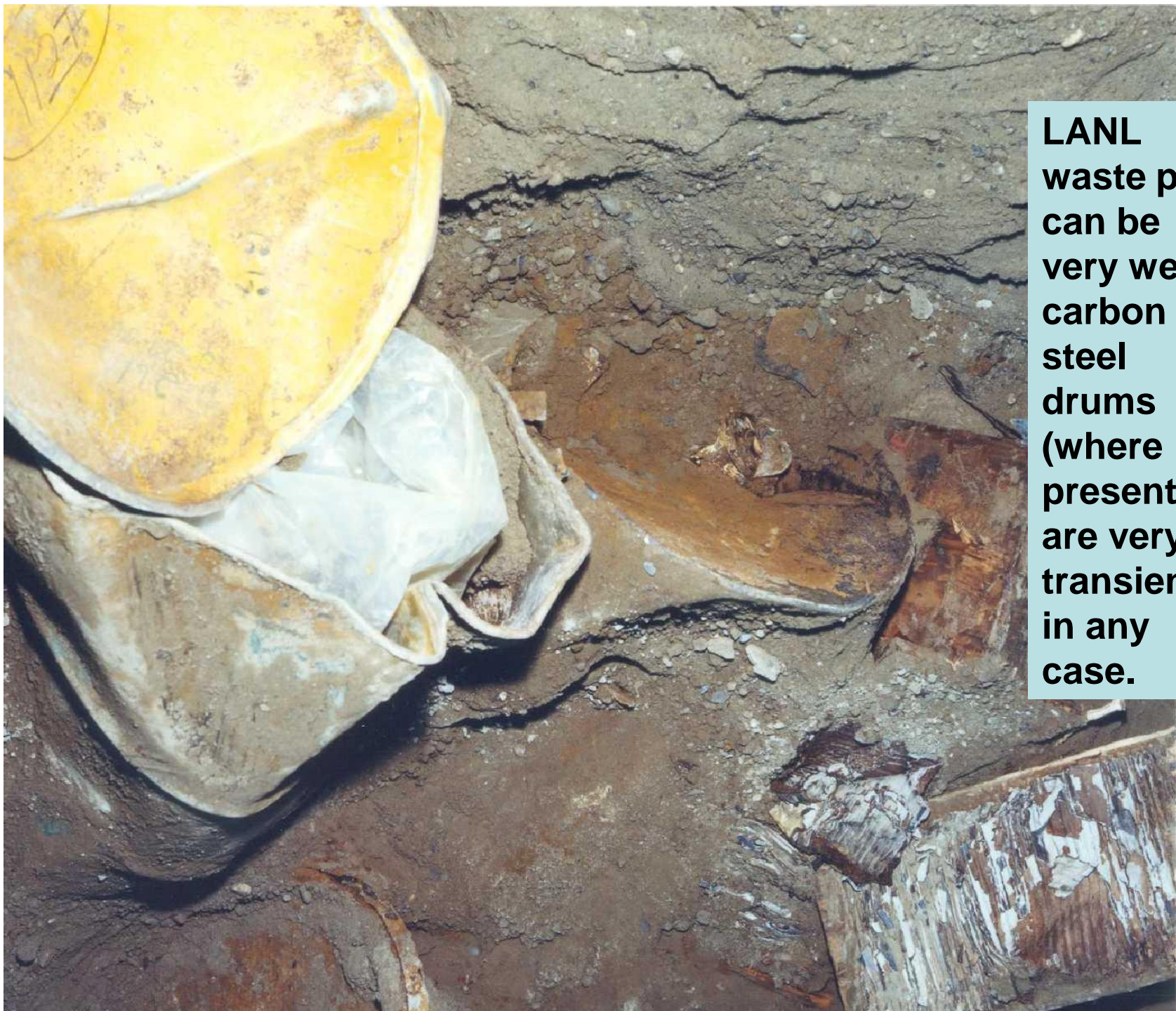
**Area G pit,
November
2004, looking
west**



Looking west. Area G (off lower R); expansion area R; Area L; Pajarito Canyon with former public road and numerous springs



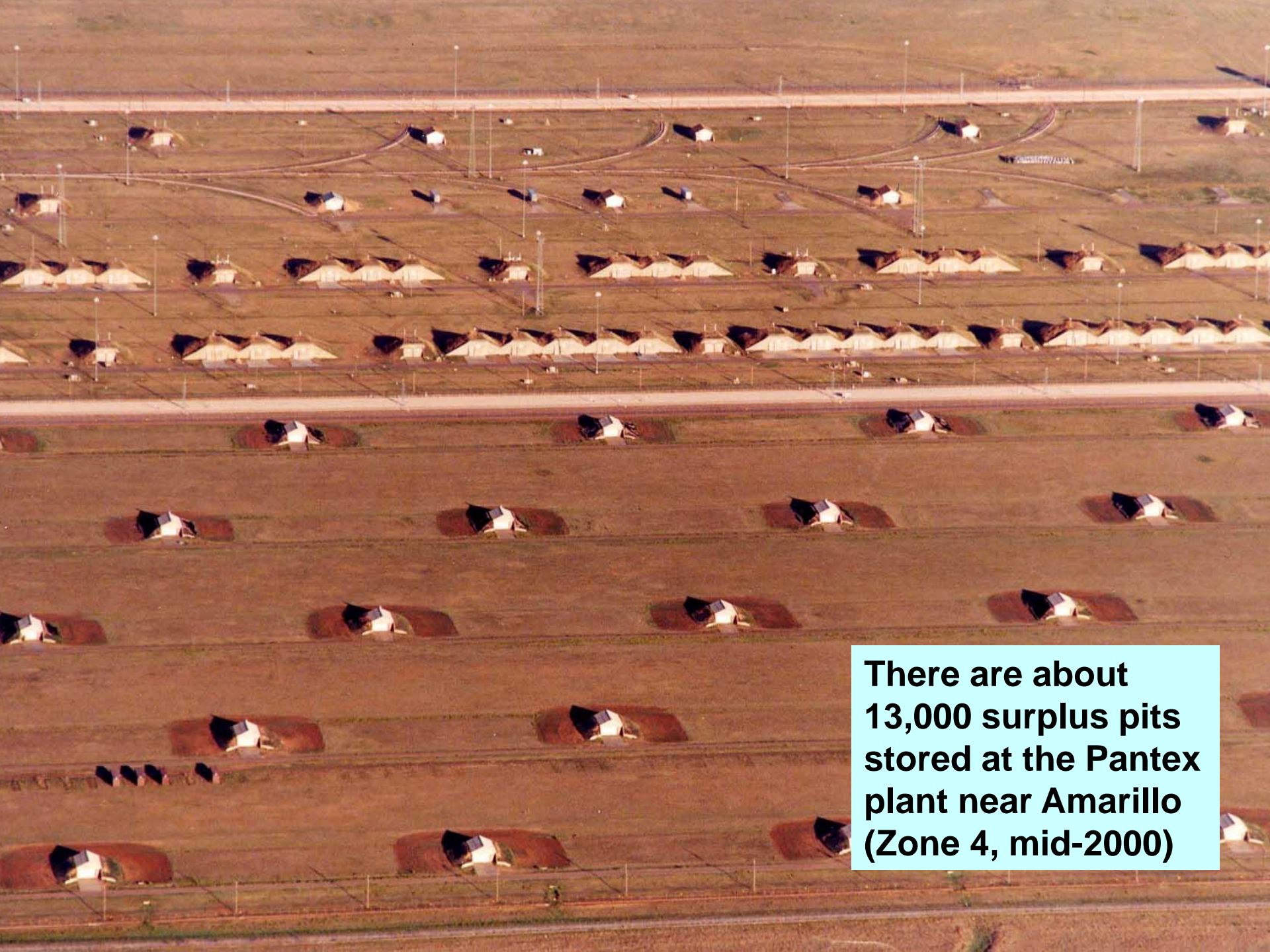
Nuclear waste drums in Idaho, similar to LANL



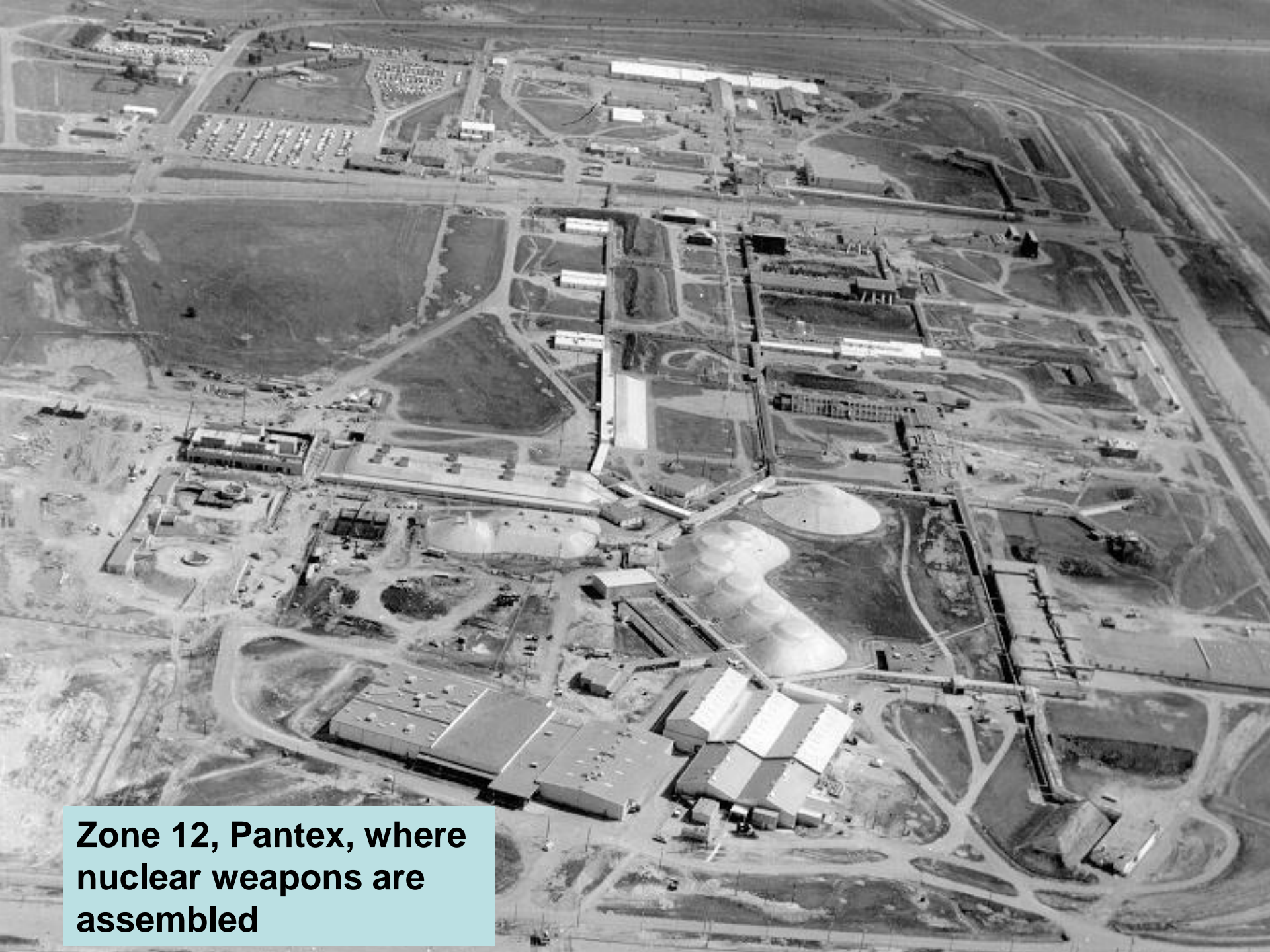
LANL waste pits can be very wet; carbon steel drums (where present) are very transient in any case.



There are over 1,000 contaminated sites at LANL, and about two dozen nuclear and chemical waste disposal sites



**There are about
13,000 surplus pits
stored at the Pantex
plant near Amarillo
(Zone 4, mid-2000)**

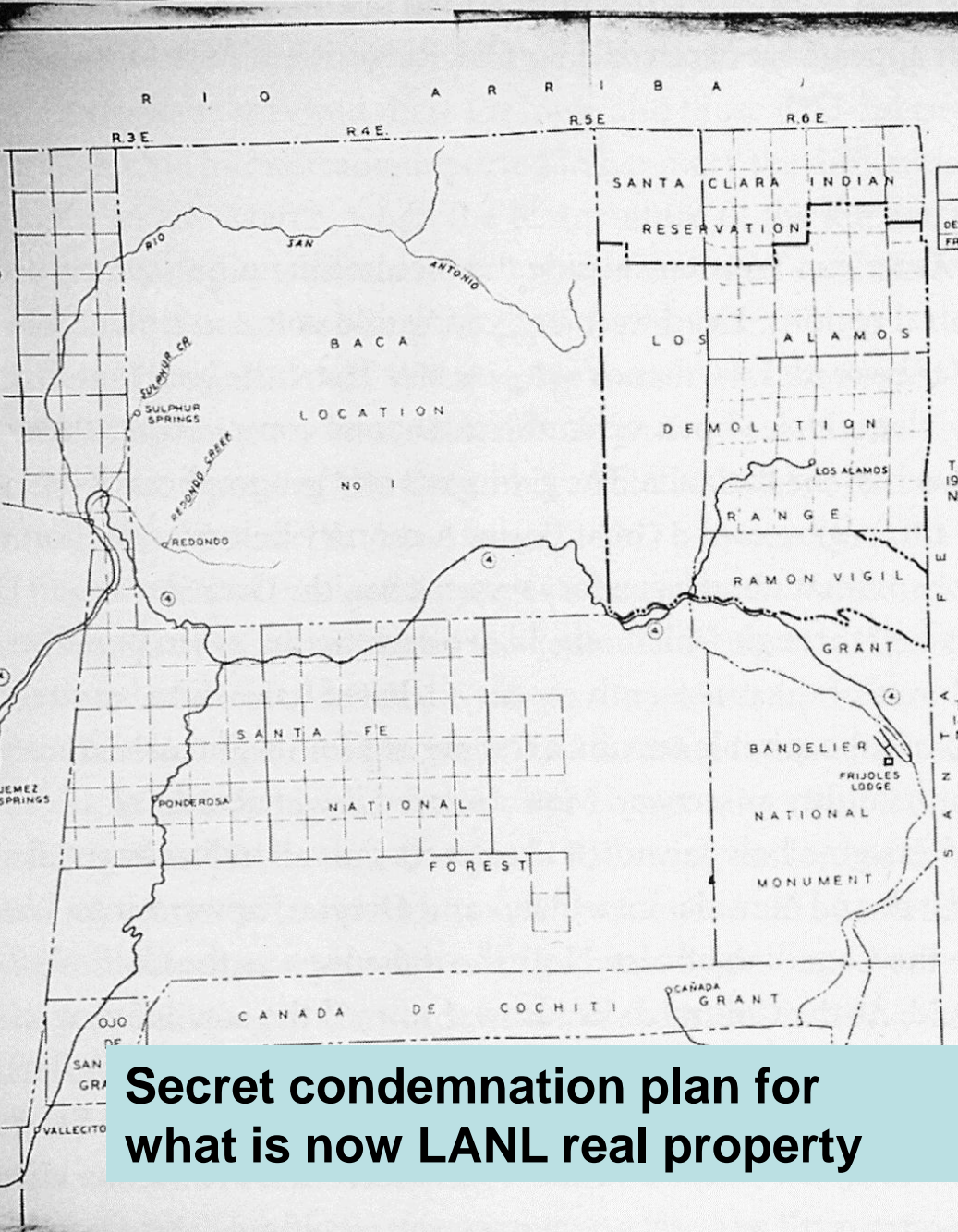


Zone 12, Pantex, where nuclear weapons are assembled

**Sandia National Laboratories (SNL), New Mexico's
other nuclear weapons design and production facility**



Now let's go back to Los Alamos,
New Mexico, in 1943...



PROJECT	ACRES	TRACTS	INTEREST ACQUIRED	COST	STATUS ACQUISITION COMPLETED
LOS ALAMOS	3599.70	35	FEES SIMPLE	\$57,255.00	IN CONDEMNATION
DEMOLITION RANGE	45666.80	1	PERMIT	NONE	4-8-43
FRIJOLE LODGE	40.00	1	LEASE	\$ 600.00 PA	IN CONDEMNATION



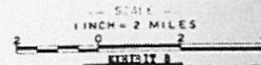
FINAL LOCATION
 STATE NEW MEXICO
 COUNTY SANDOVAL
 DIVISION SOUTHWESTERN
 DISTRICT ALBUQUERQUE
 SERVICE COMMAND EIGHTH
 USING AGENCY SECRET
 25 MILES N.W. OF SANTA FE, N.M.
 MILES OF

TRANSPORTATION FACILITIES
 NONE RAILROAD
 NO. 4 STATE ROAD
 NONE FEDERAL ROAD
 NONE AIRPORT

LAND AREA
 ACRES OWNED BY WD 3,599.70
 ACRES LEASED BY WD 40.00
 ACRES LEASED FROM WD
 ACRES TRANSFERRED TO WD
 ACRES DONATED TO WD
 ACRES BY PERMIT 45,666.80

DISPOSALS
 ACRES SOLD
 ACRES TRANSFERRED
 ACRES EXCHANGED
 ACRES OTHERWISE

- LEGEND
- PROJECT BOUNDARY
 - STATE OR PROVINCE LINE
 - COUNTY LINE
 - PROPERTY LINE
 - LAND GRANT LINE
 - CITY, VILLAGE, OR BOROUGHS
 - CEMETERY, SMALL FARM, ETC.
 - TOWNSHIP & RANGE LINE
 - SECTION LINE



NEW MEXICO
 STATE INDEX

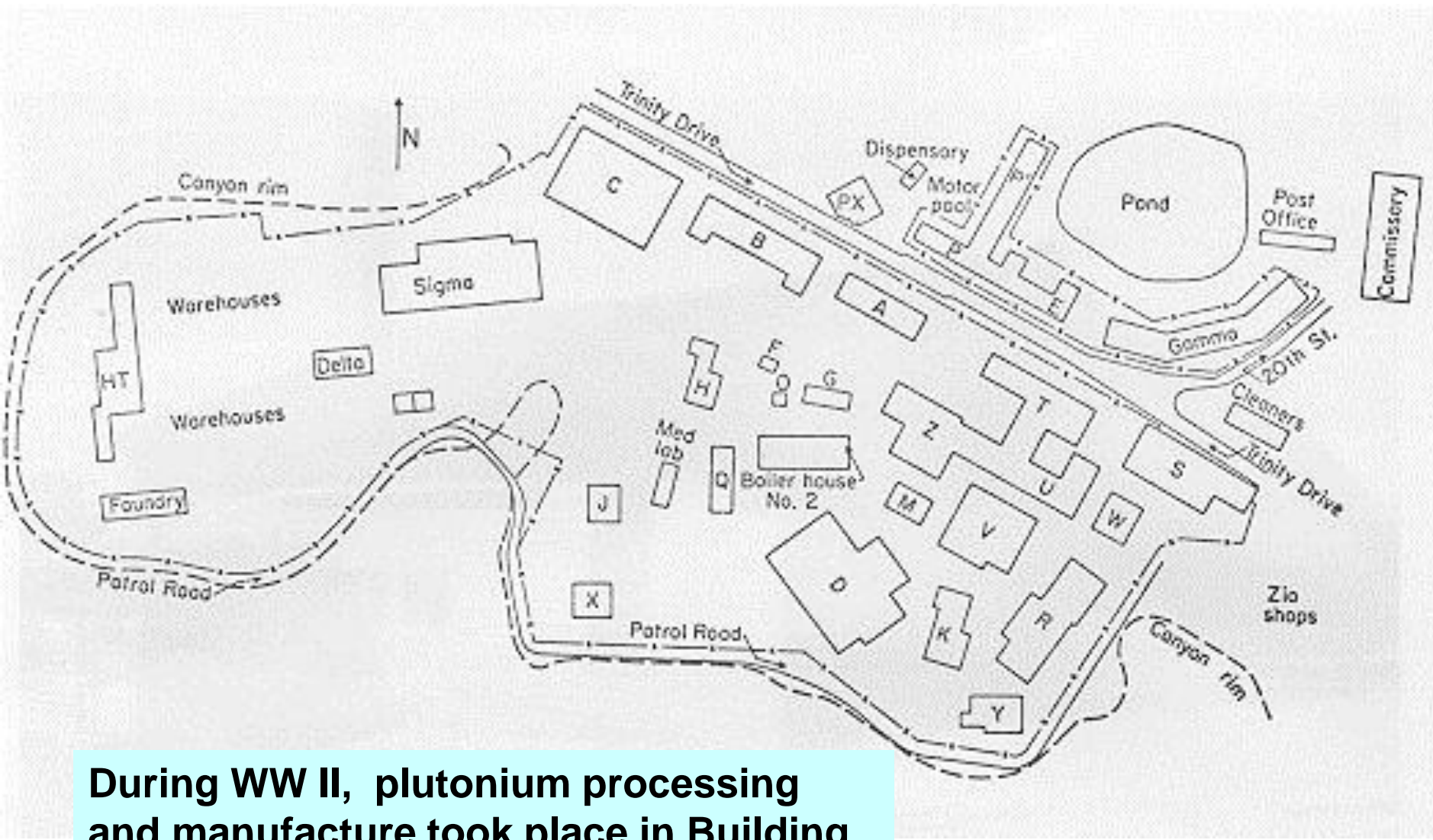
REAL ESTATE
 LOS ALAMOS DEMOLITION RANGE AND FACILITIES
 LOS ALAMOS NEW MEXICO

RECOMMENDED BY *Charles G. Apple* DATE 5-2-43
 APPROVED BY *Frank J. ...* DATE 5-2-43
 CAPT. CORPS OF ENGINEERS

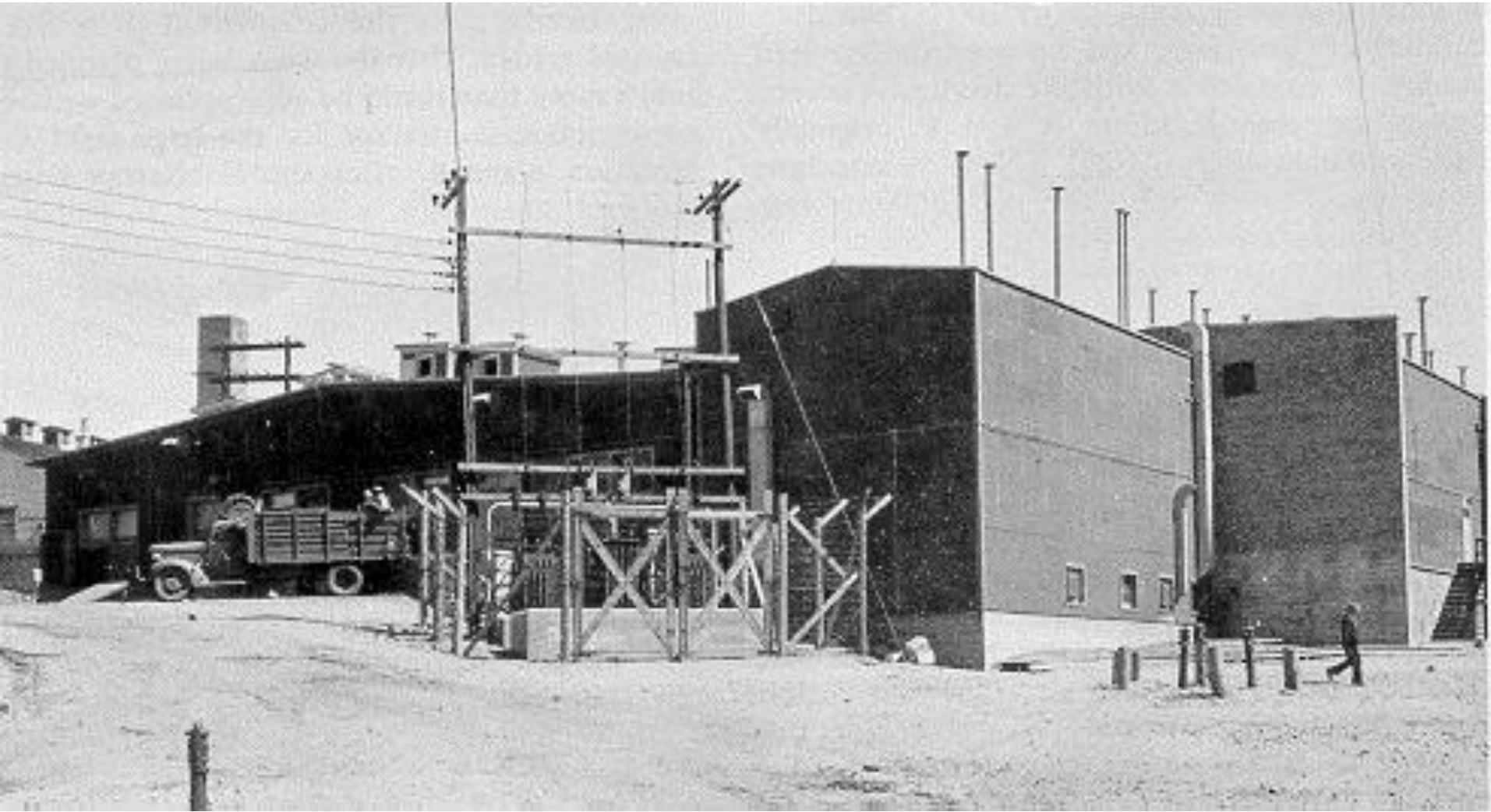
COMPILED W.S. THAYER W.S. ... DATE BY ... REVISIONS ... SHEETS 1 OF 3 DRAWING NO. LA-111

Secret condemnation plan for what is now LANL real property

A-4
 SECRET

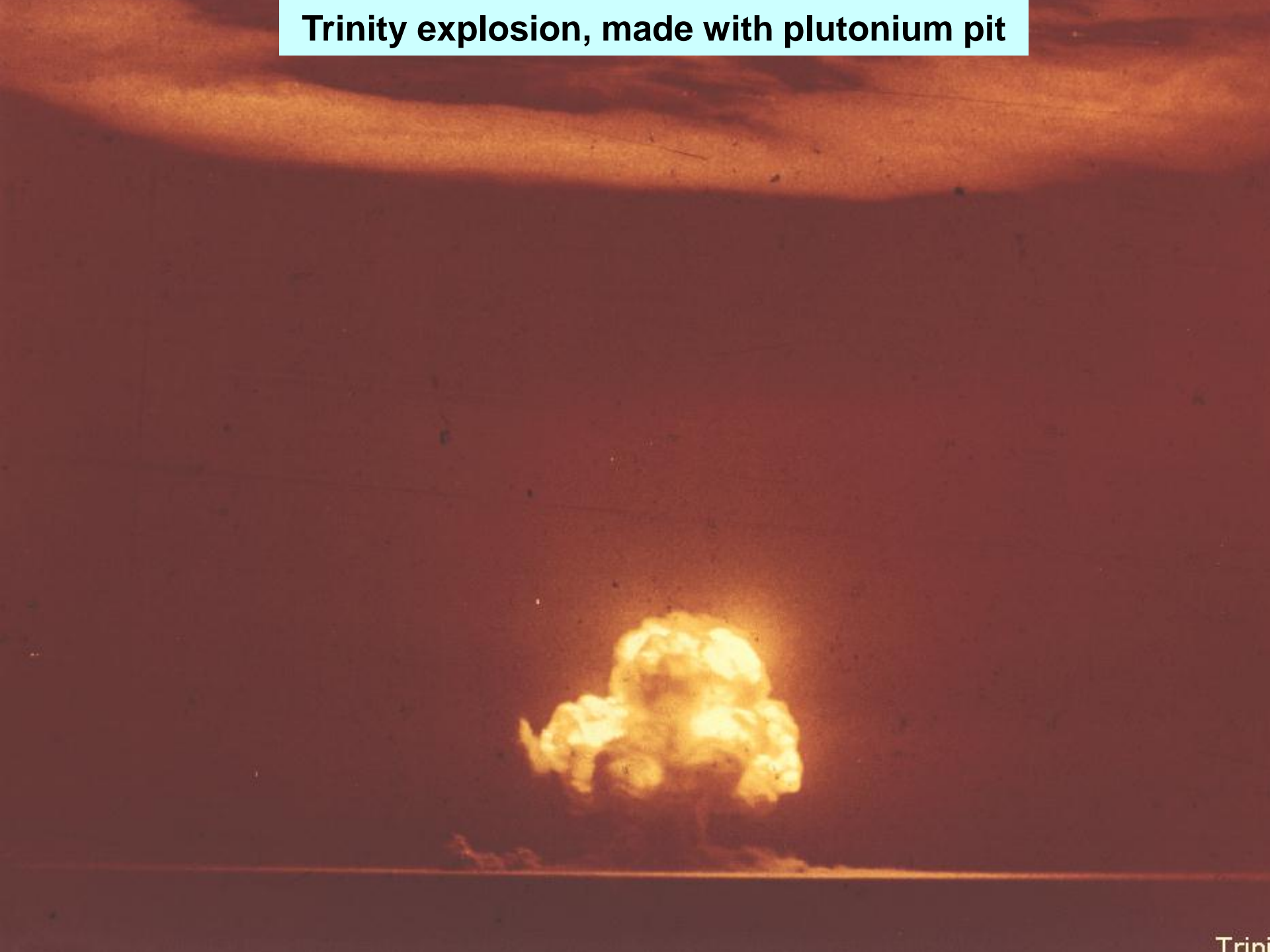


During WW II, plutonium processing and manufacture took place in Building “D,” where the Quality Inn is today.



Building D, Los Alamos, circa 1944

Trinity explosion, made with plutonium pit

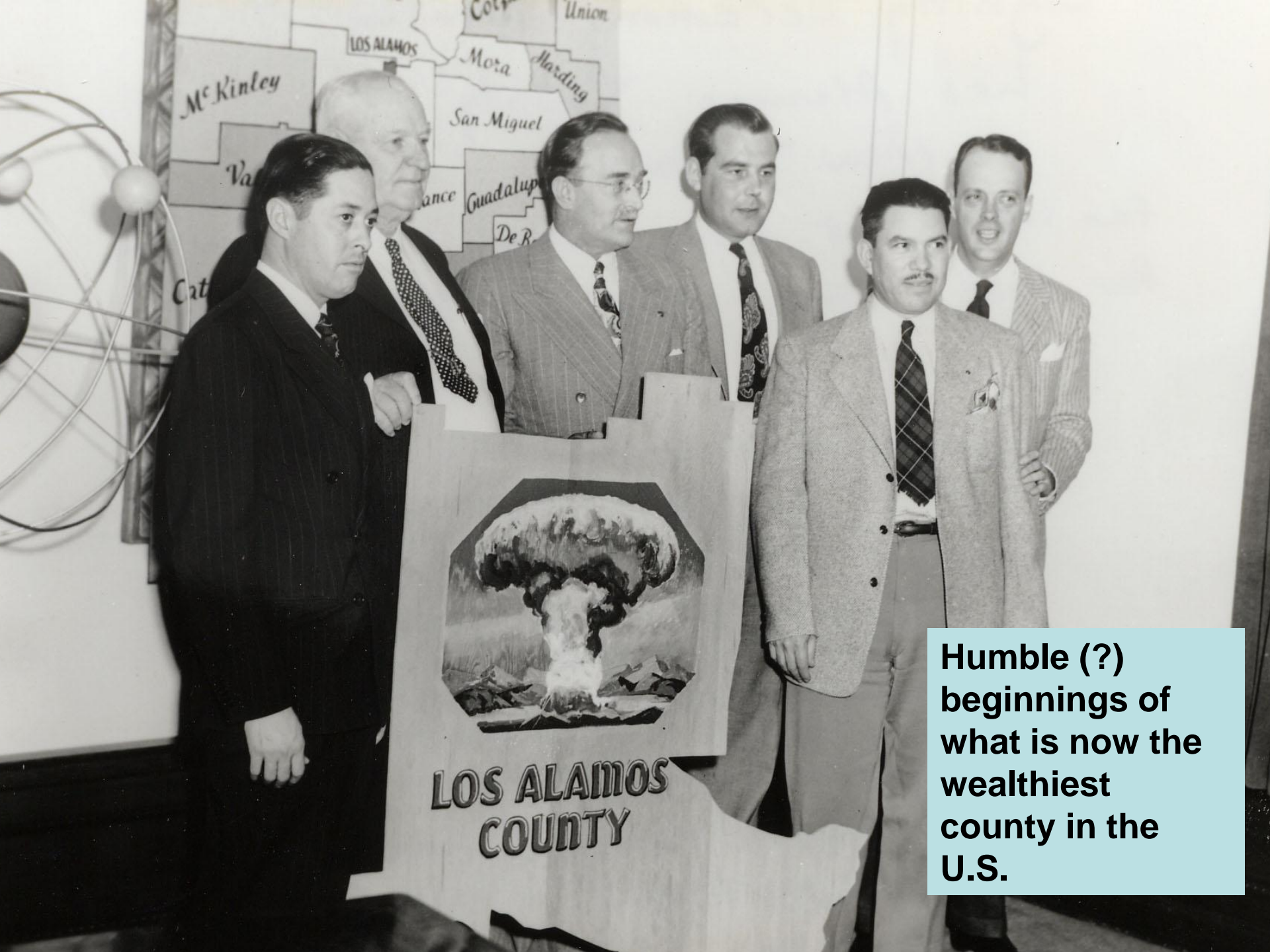




DP Site (“D Prime”), TA-21, which replaced D Building. The Rocky Flats before Rocky Flats.



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



**Humble (?)
beginnings of
what is now the
wealthiest
county in the
U.S.**

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



LANL TA-55, plutonium facility, looking SSE: main building (PF-4) and ancillary structures; never-used Nuclear Materials Storage Facility to SW of PF-4; CMRR site S of PF-4. Green field to E is Area C nuclear/chemical disposal site



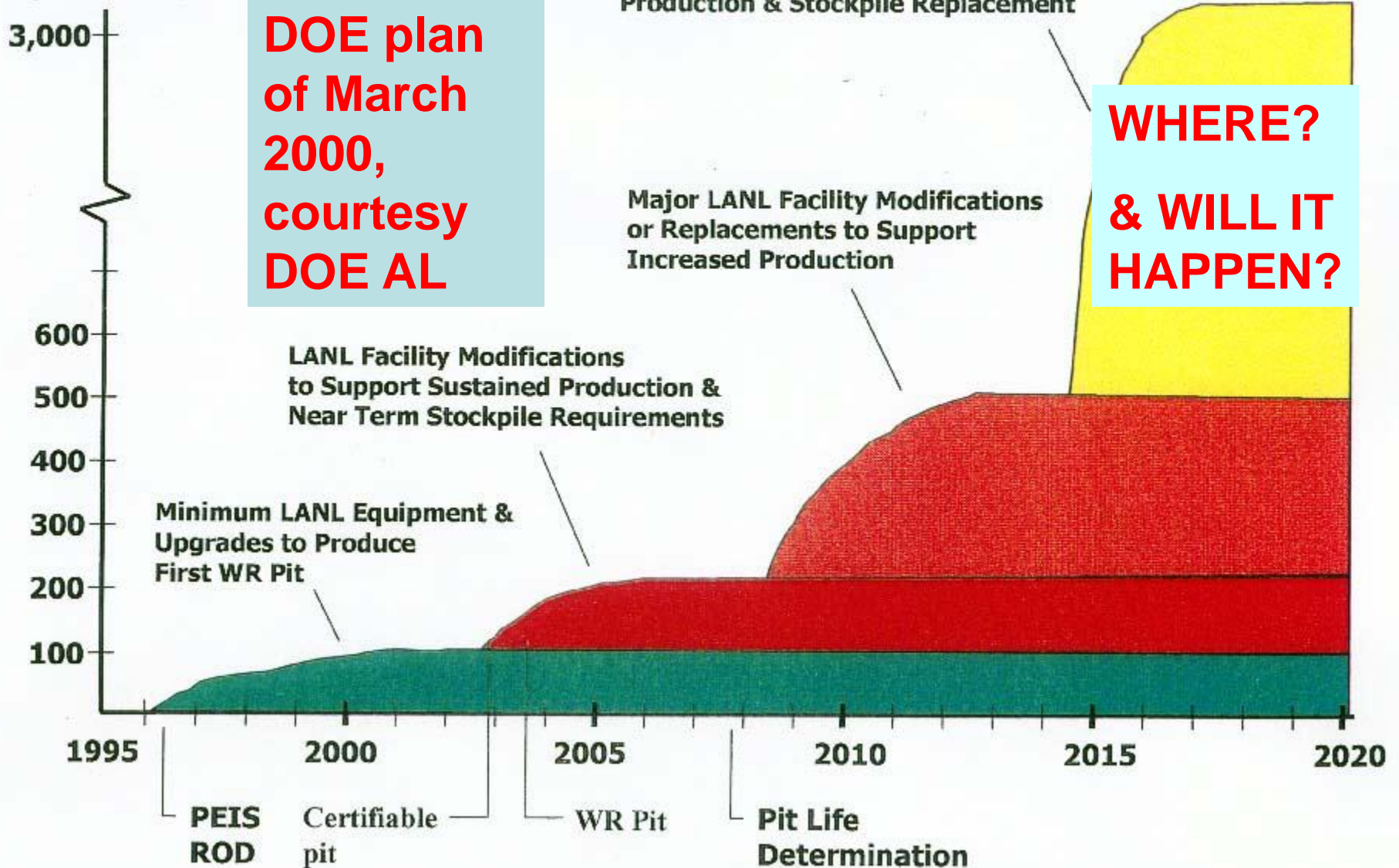
No Trespassing
By Order of the
United States
Department of Energy

**NUCLEAR MATERIAL
STORAGE FACILITY PHASE II
UNITED STATES DEPARTMENT OF ENERGY
Construction Under Supervision of
U. S. ARMY
CORPS OF ENGINEERS
ALBUQUERQUE DISTRICT**

May it rust in peace. A project management fiasco stopped by Study Group activists and bad design.

Staged Facility Investment Strategy to Support Pit Production

Facility Costs
(\$ Millions)



Could We Define a “Southwest Nuclear Complex” – Leader in Weapons of Mass Destruction Worldwide?

- **NNSA sites**

LANL, SNL, and the NNSA Service Center account for half of all NNSA nuclear weapons spending. With Pantex it more than half, and these sites potentially contain between them (and WIPP) most essential NNSA functions.

- **DOE site:** WIPP

- **DoD sites:**

- Kirtland AFB : storage of ~ 2,500 “reserve” nuclear weapons, ~ ¼ of total current arsenal and more than anywhere else in the world; USAF Phillips Laboratory and SpaceCom facilities, AF Nuclear Weapons Center, more.

- Dyess AFB, (near Abilene, TX): ~ 350 deployed nuclear weapons

- Cannon AFB, Holloman AFB, White Sands MR, Fort Bliss, etc.

- **Low-level and mixed waste disposal sites, existing and proposed** (LANL, Andrews Co., TX, Eddy Co., NM, others; projected waste streams for these sites are large, varied, and trying to expand)

- **Civilian nuclear facilities, proposed** (National Enrichment Facility, High Temperature Gas Reactor (Andrews Co., TX), reprocessing facility, others?)

A Southwest Nuclear/WMD Complex? (continued)

- **Unwavering core political support so far**

- TX a “red” state with a strongly-supportive political environment
- NM a passive client state or internal colony, with weak institutions, low political expectations, and an increasingly-captive economy

- **Potential strong growth in nuclear and allied technologies**

- Nuclear power may experience strong resurgence, with strong front-end (fuel) and back-end (waste) demand, plus design efforts and political services; decommissioning wastes and novel fuel cycles (President Bush’s GNEP) will involve large quantities of wastes, focusing attention on arid SW
- Desalinization “R&D” may lead to calls for brine or air-cooled nuclear power generation
- Potential new uses for radioisotopes (space war, nanotechnology)

- **Declining resources of water and hydrocarbons, increasing political vulnerability in the absence of alternative economic and social paradigms**

We have to firmly reject nuclear weapons if we do not want them to define and limit our choices in the New Mexico/West Texas region.