

EFCOG Training Working Group Monthly Learning Opportunity

June Meeting | 5 June 2023

Josh Silverman, PhD, Director, Office of Environmental Protection and ES&H Reporting


David Yakonich (NNSS), Training Collaboration Subgroup Chair

Ethan Guymon (INL), Training Collaboration Subgroup Vice Chair



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Agenda



U.S. DEPARTMENT OF ENERGY

- Observations from DOE History
- Closing
 - Request for feedback
 - Greatest Insights chat
 - Preview July Learning Opportunity

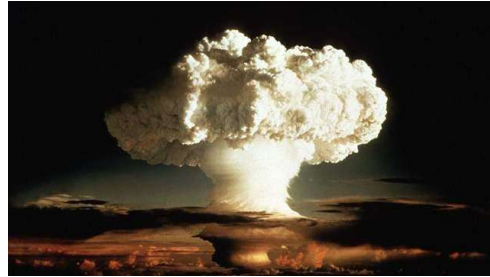


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Observations from DOE History



Josh Silverman, PhD
Director, Office of Environmental Protection
and ES&H Reporting
U.S. Department of Energy
June 5, 2023

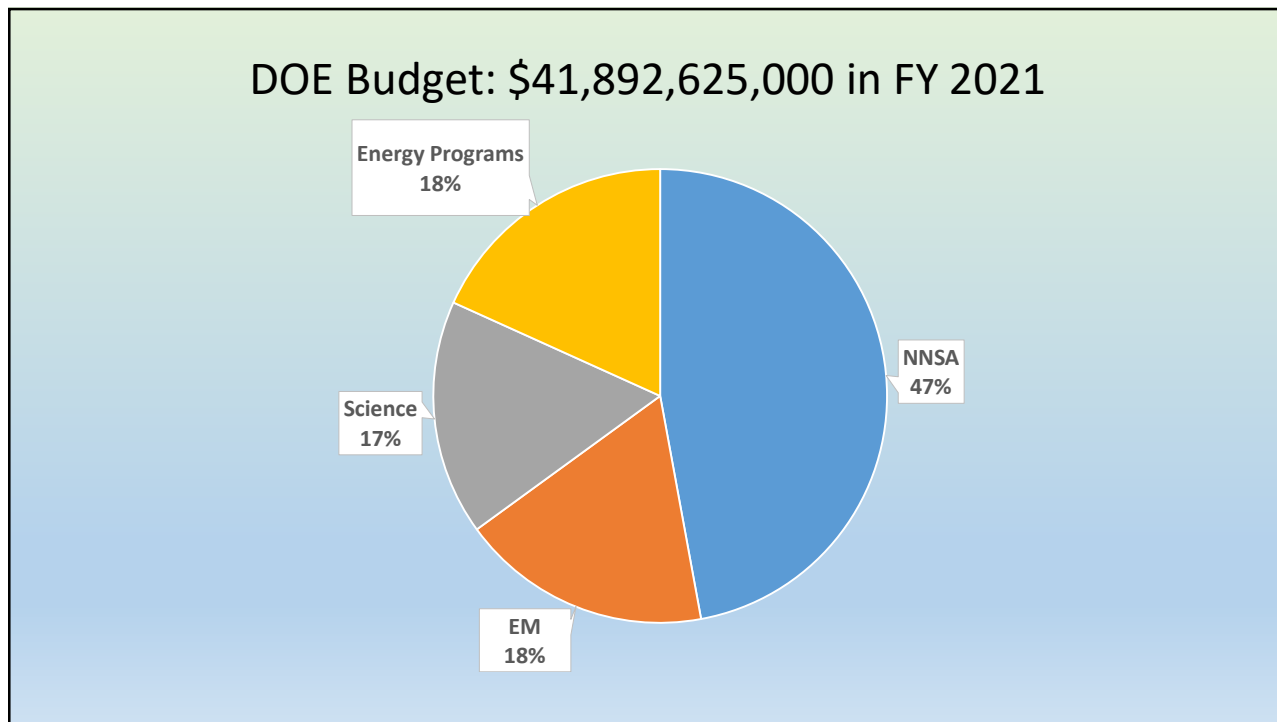
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Talk Outline

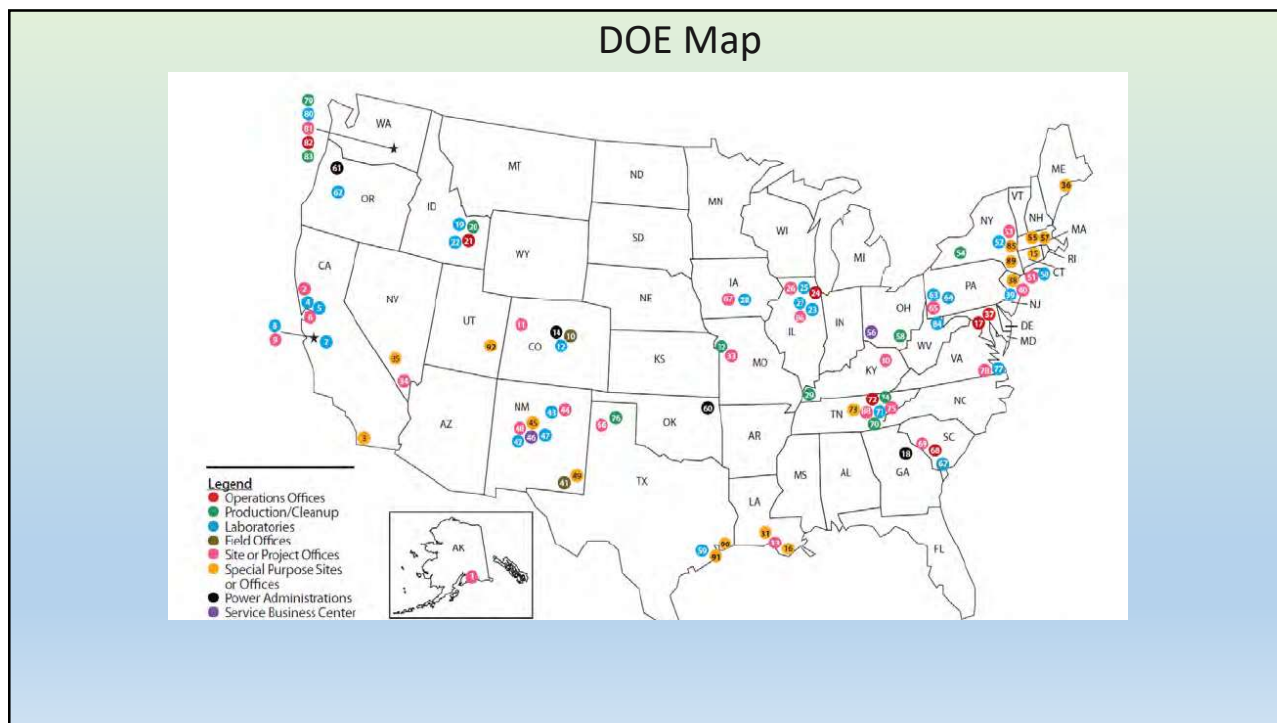
- Understanding the Agency (hint: “energy” can be misleading)
- The Manhattan Project (1942-46)
- The Cold War in brief (1945-89)
- Adjusting to the post-Cold War world
- Historical Perspectives on DOE

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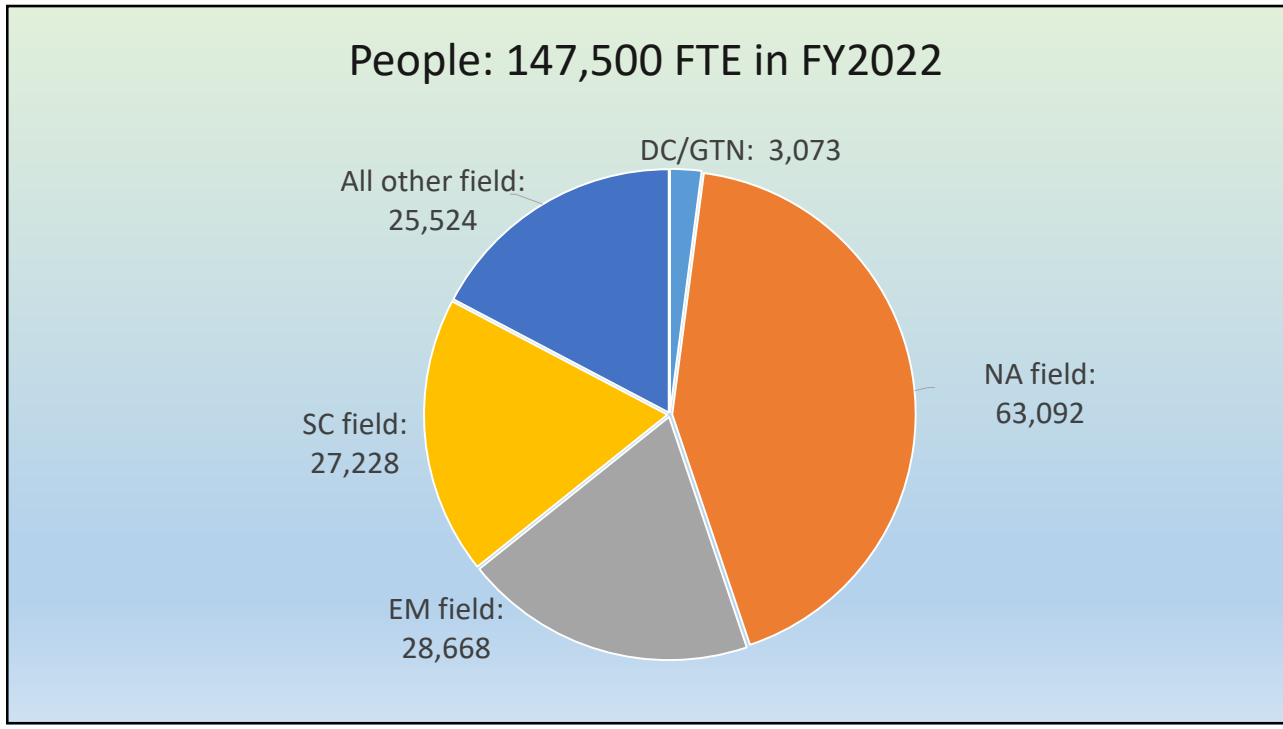


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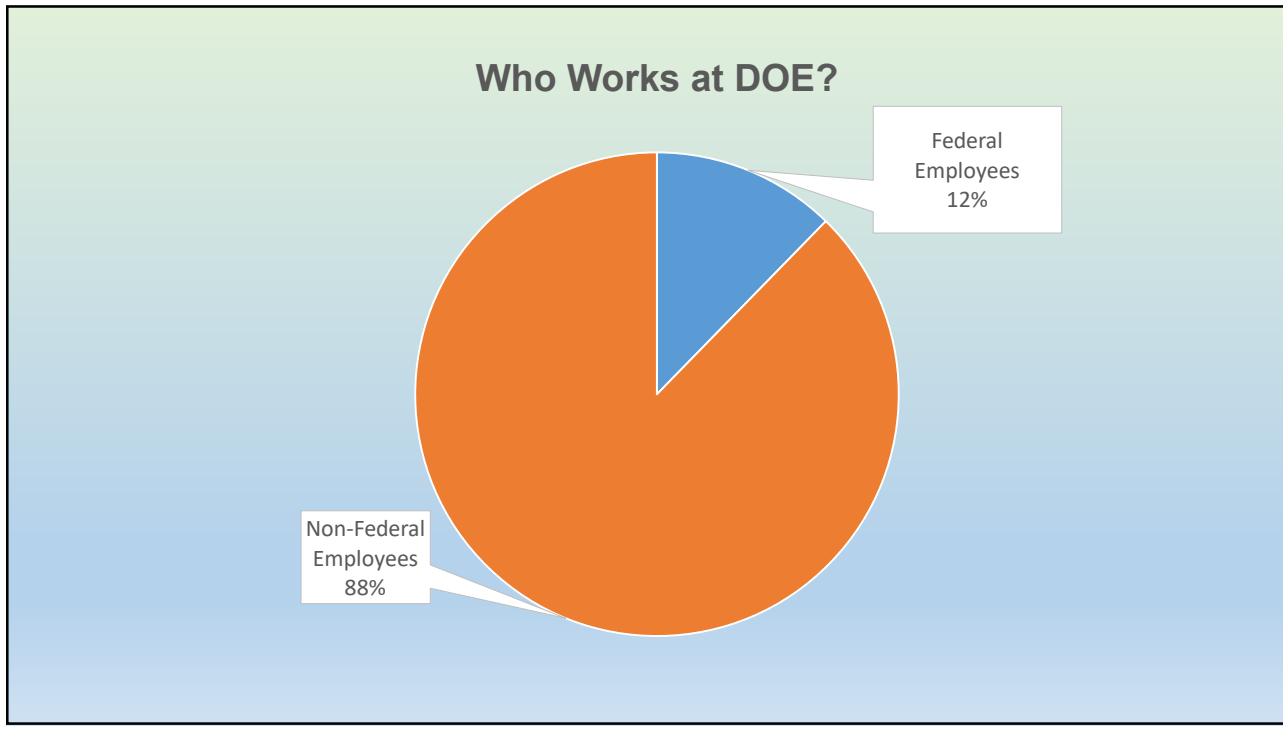


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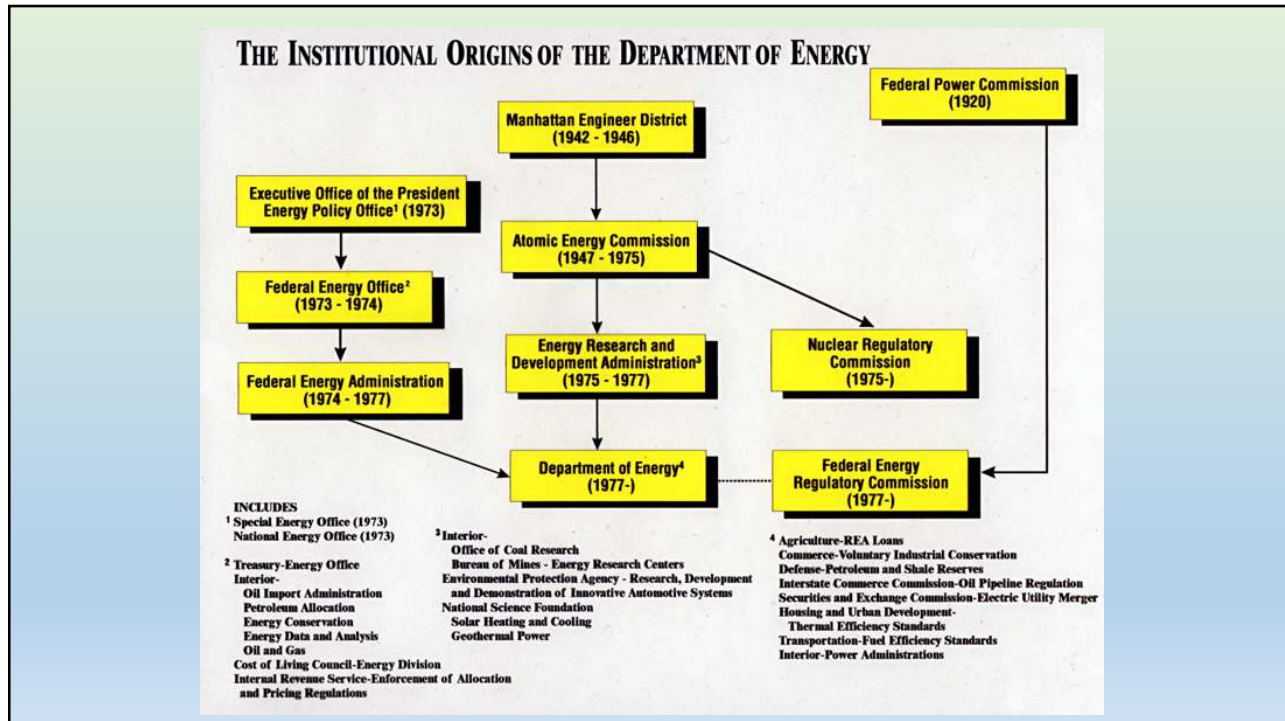


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Key Historic Themes and Tensions

- Military Mission within a Civilian Agency
- Big Science with an Engineering Orientation
- Mission vs Safety/Environment
- Secrecy vs Transparency (and Accountability)
- Decentralized by design—unclear who's in charge
 - HQ Authority vs Field Autonomy
 - Federal Agency with Contractor Operations

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Albert Einstein
Old Grove Rd.
Massau Point
Sicence, Long Island
August 2nd, 1939

F.D. Roosevelt,
President of the United States,
White House
Washington, D.C.

Sirs:

Some recent work by E.Fermi and L. Szilard, which has been communicated to me in manuscript, leads me to expect that the element uranium may be turned into a new and important source of energy in the immediate future. Certain aspects of the situation which has arisen seem to call for watchfulness and, if necessary, quick action on the part of the Administration. I believe therefore that it is my duty to bring to your attention the following facts and recommendations:

In the course of the last four months it has been made probable - through the work of Joliot in France as well as Fermi and Szilard in America - that it may become possible to set up a nuclear chain reaction in a large mass of uranium, by which vast amounts of power and large quantities of new radium-like elements would be generated. Now it appears almost certain that this could be achieved in the immediate future.

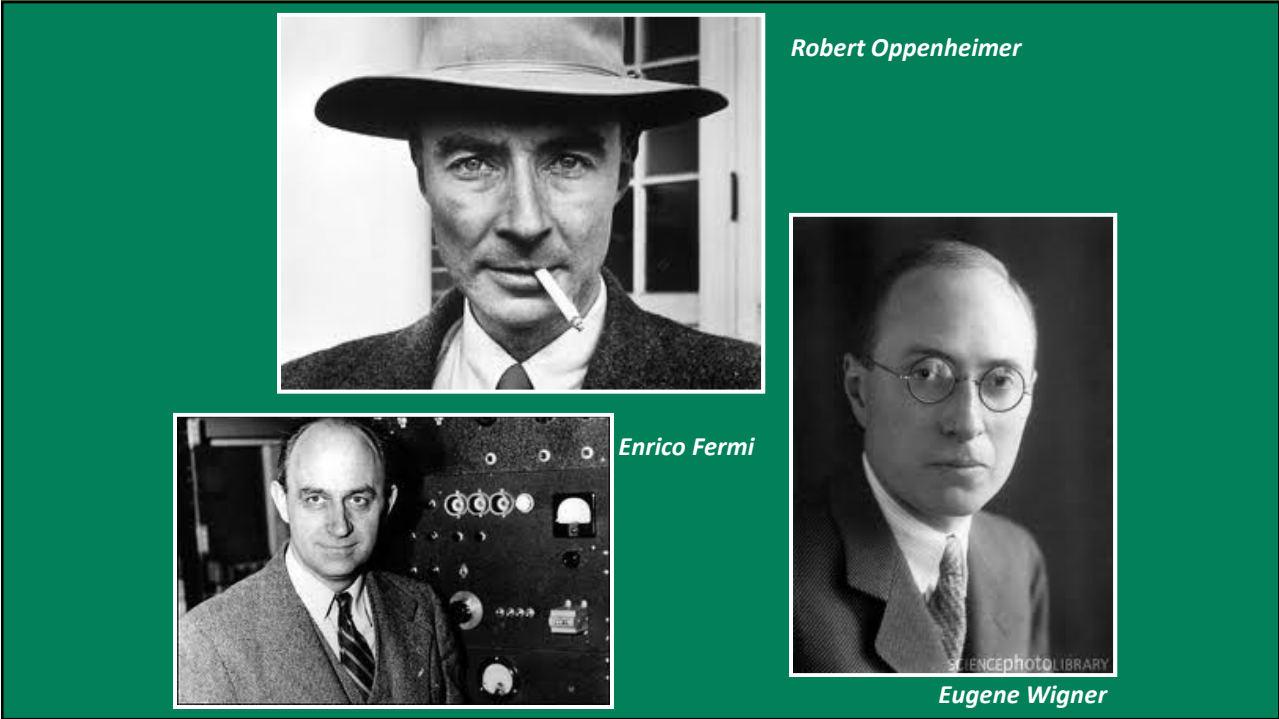
This new phenomenon would also lead to the construction of bombs, and it is conceivable - though much more so - that extremely powerful bombs of a new type may be constructed. A single bomb of this type, carried by aircraft and dropped in a city, might very well destroy the city and the surrounding territory. However, the amount of uranium required for such a bomb will prove to be too heavy for transportation by

"This requires action."

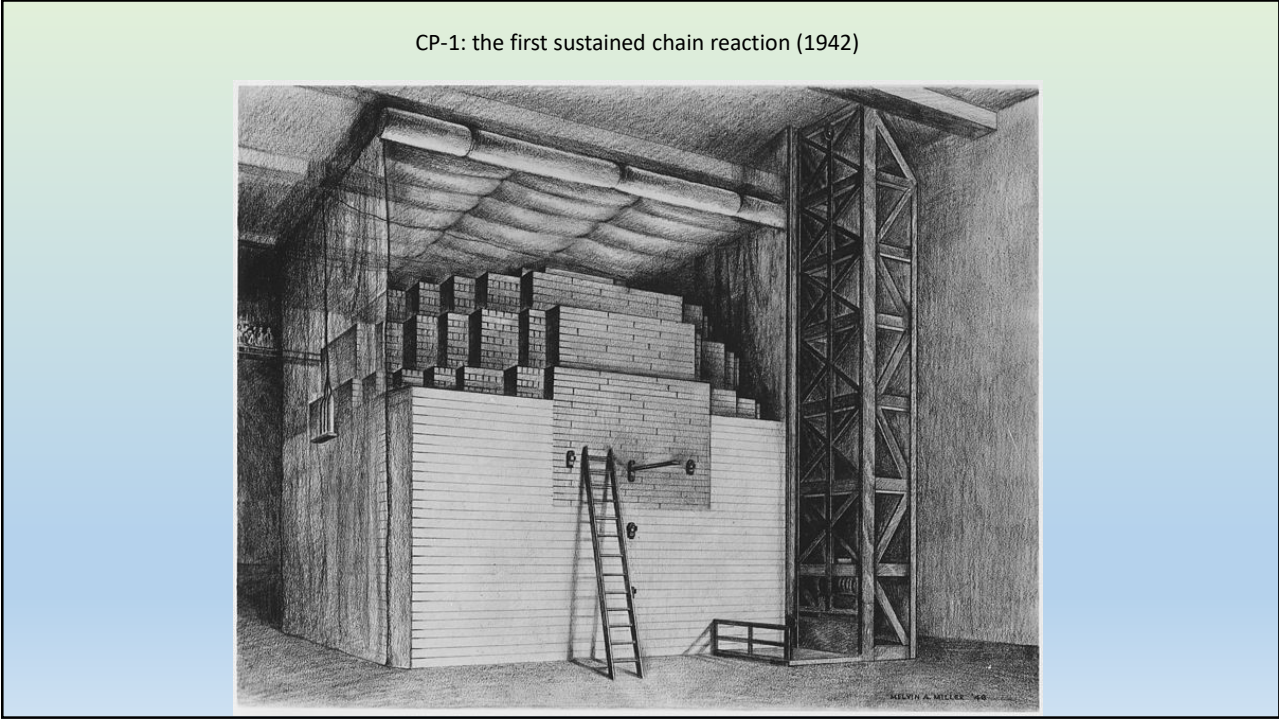
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General Leslie Groves
The Manhattan Project's
"indispensable man"

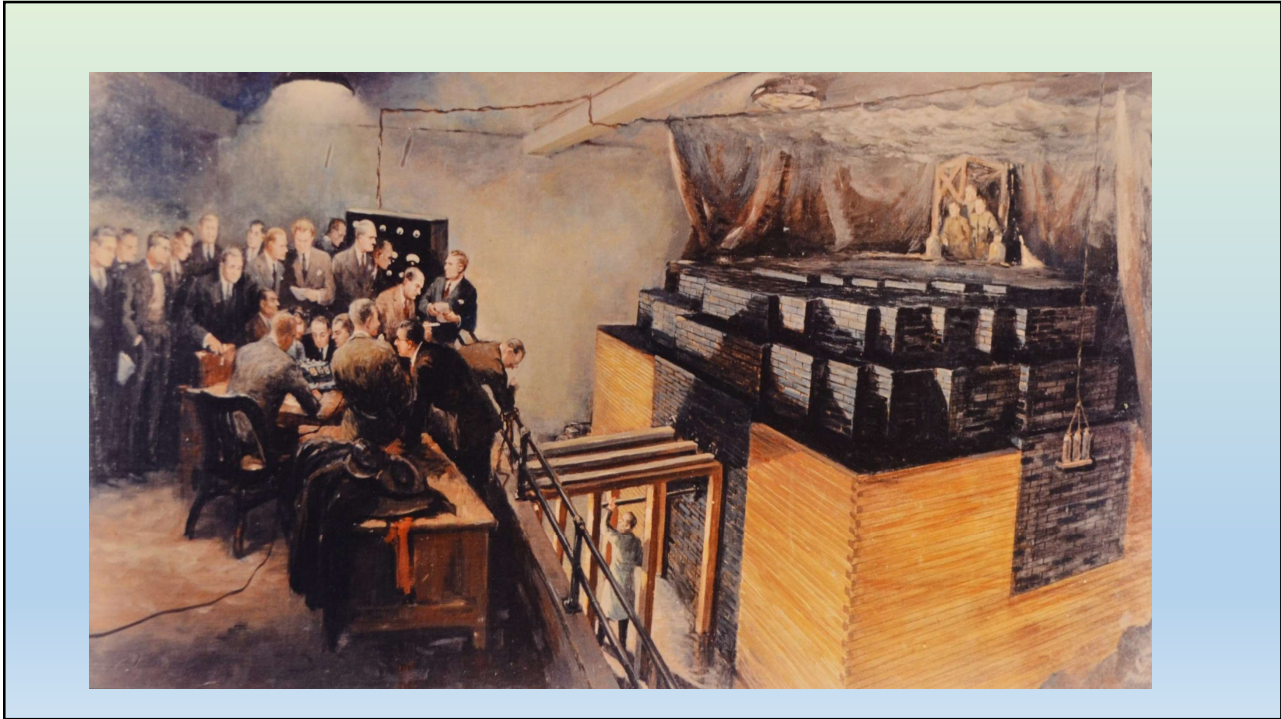
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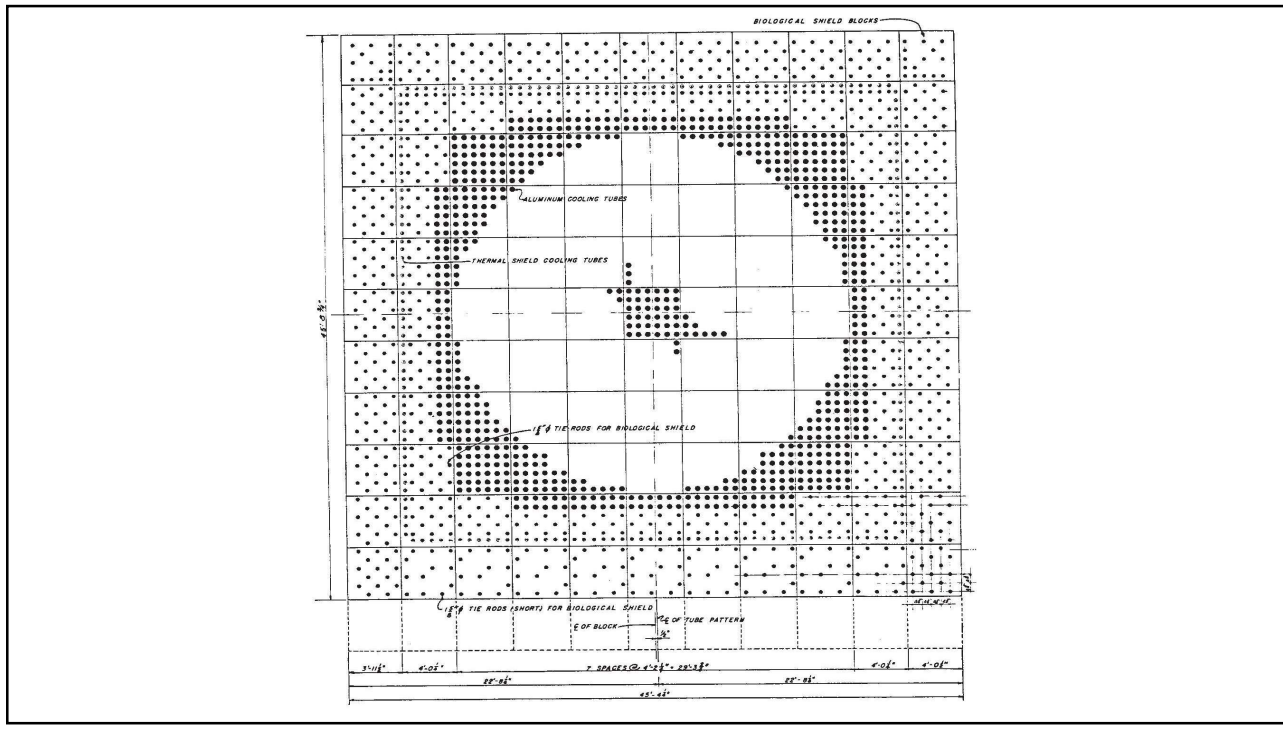


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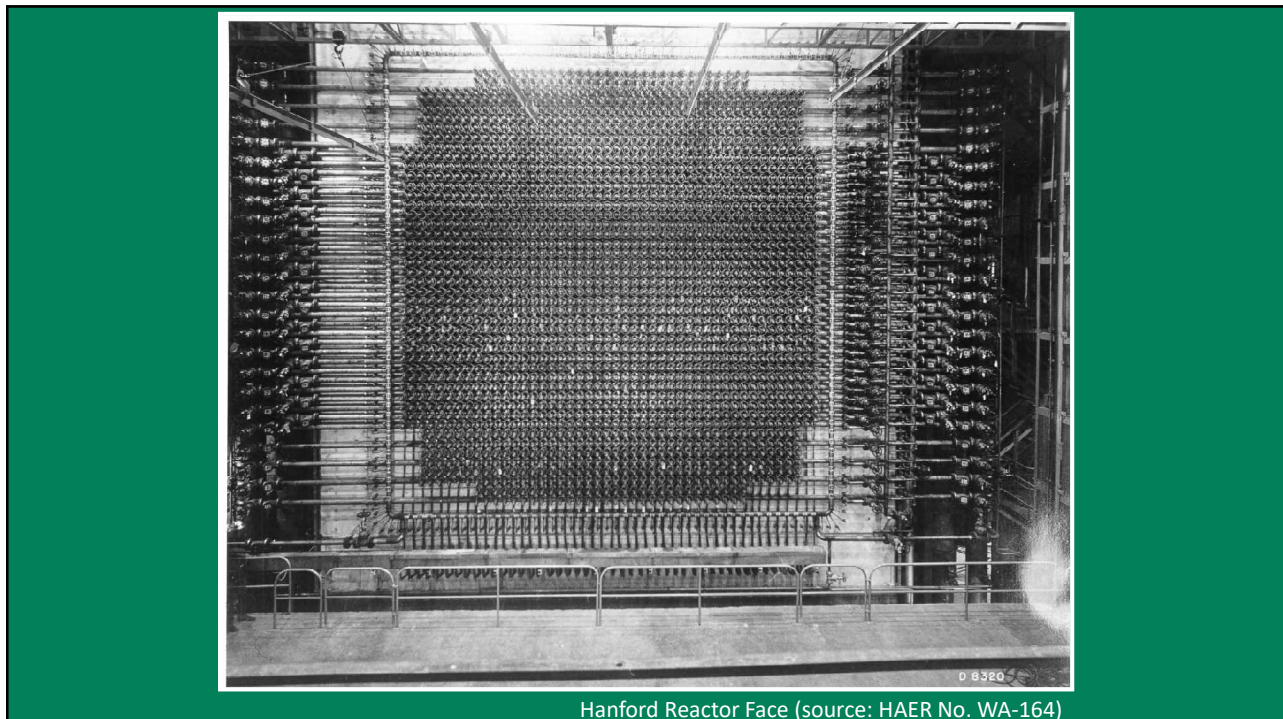


Source: Historic American Engineering Record, B Reactor (105-B Building), HAER No. WA-164

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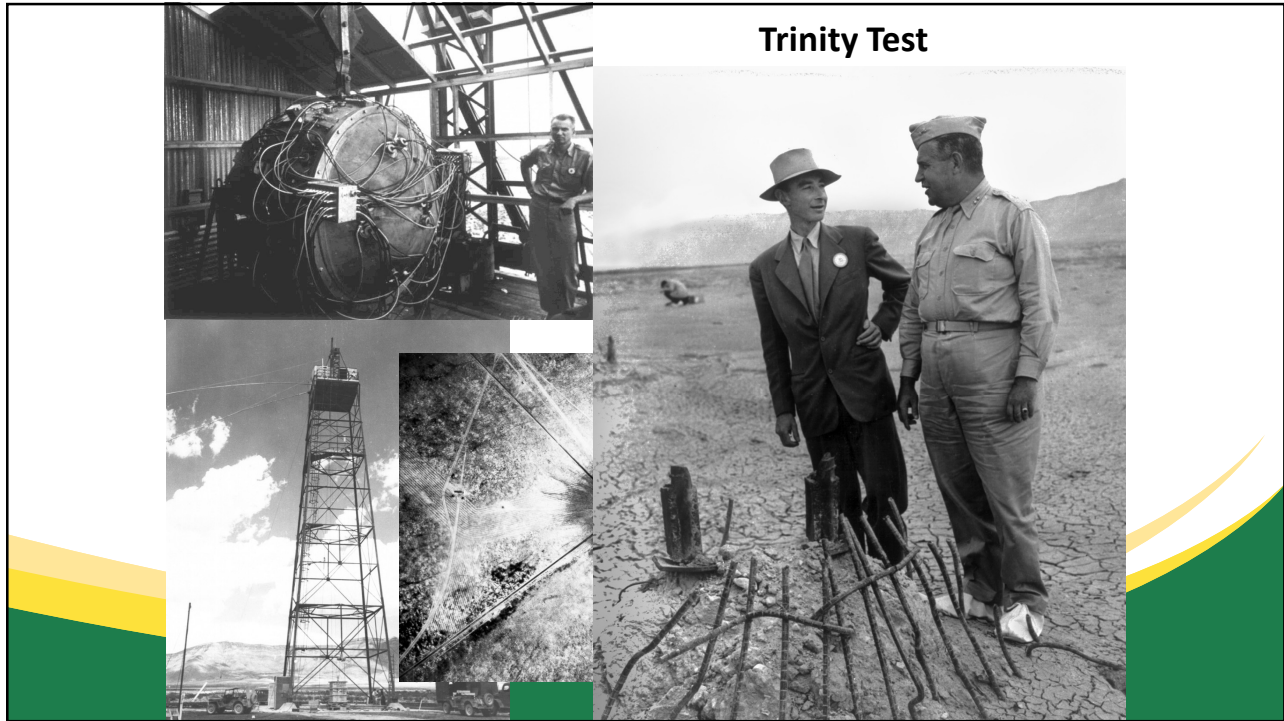


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Hanford Reactor Face (source: HAER No. WA-164)

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Trinity Test



Hiroshima: Before and After

Atomic Energy Act of 1946

- Transferred management of the weapons complex to a civilian led Atomic Energy Commission (AEC)



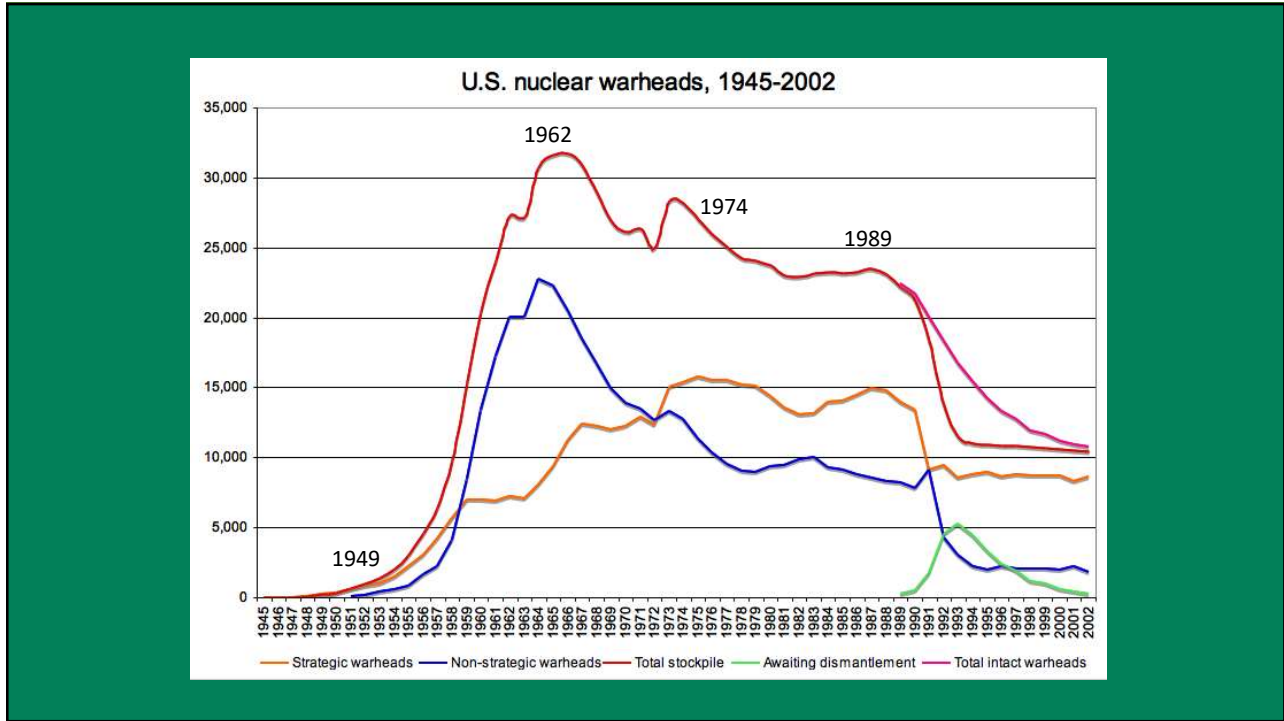
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Atomic Energy Act of 1946

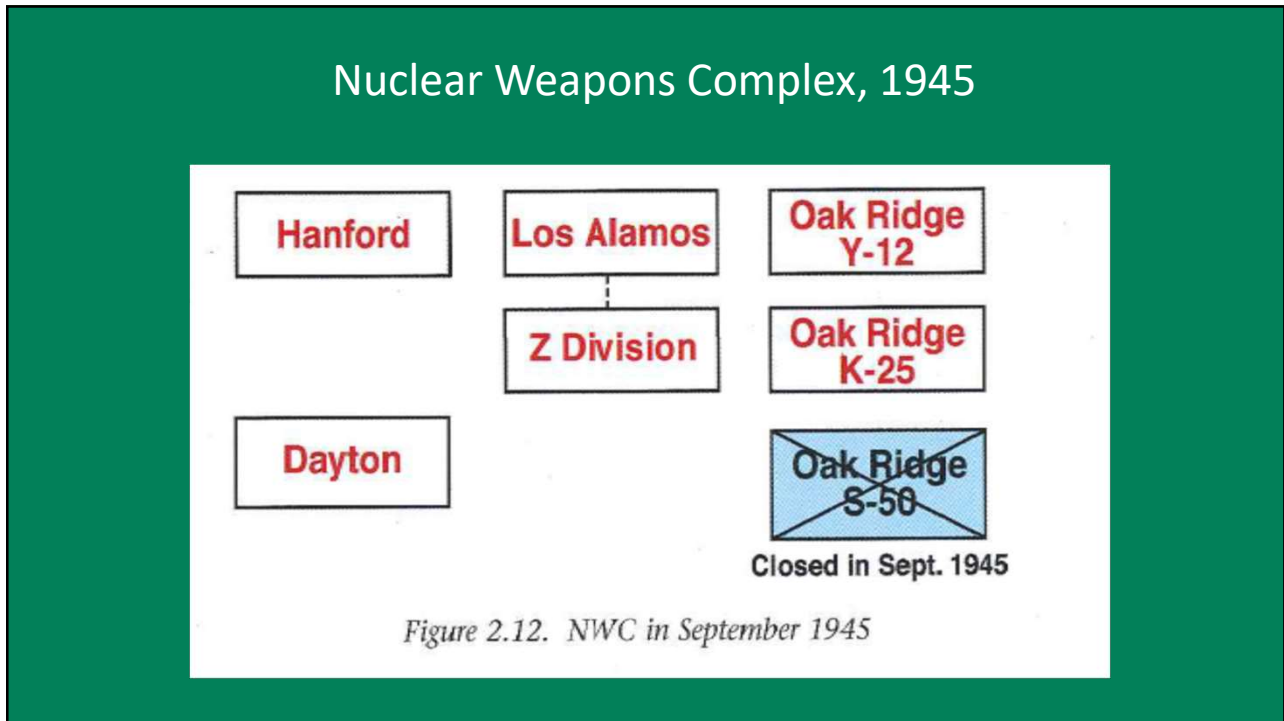
“It is hereby declared to be the policy of the people of the United States that, subject at all times to the **paramount objective of assuring the common defense and security**, the development and utilization of atomic energy shall, so far as practicable, be directed toward **improving the public welfare, increasing the standard of living, strengthening free competition** in private enterprise, and **promoting world peace.**”

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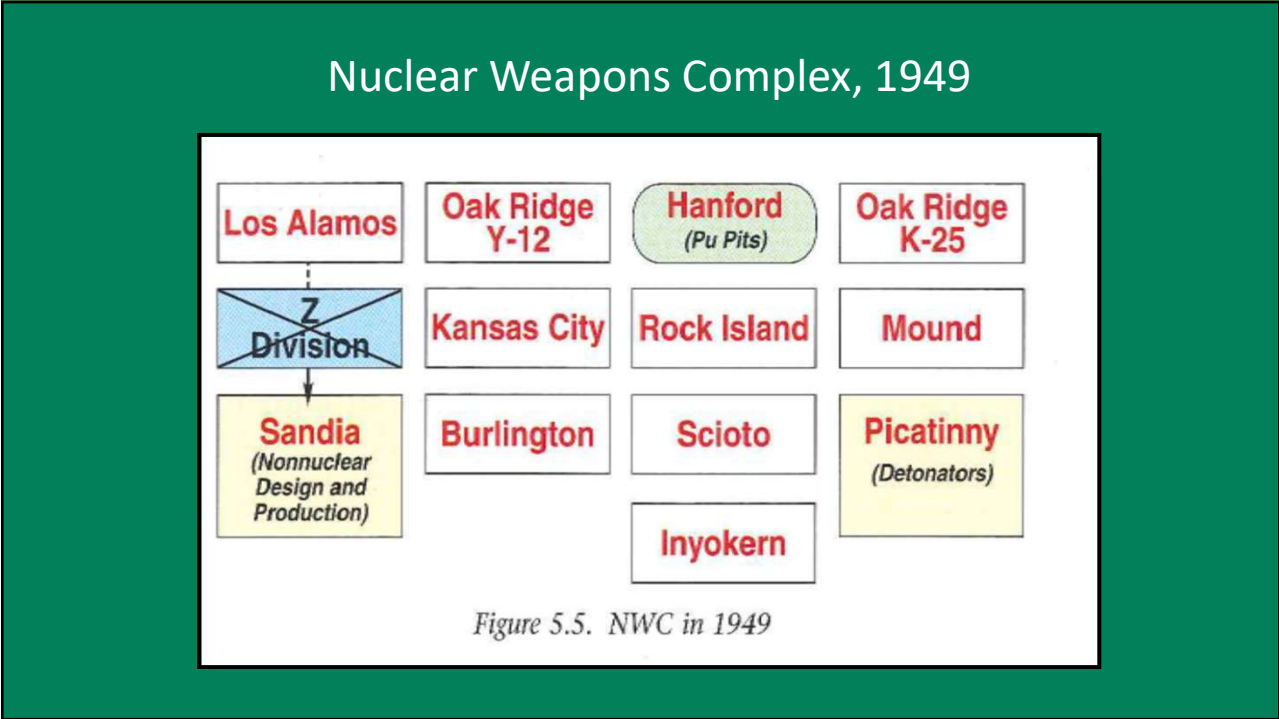
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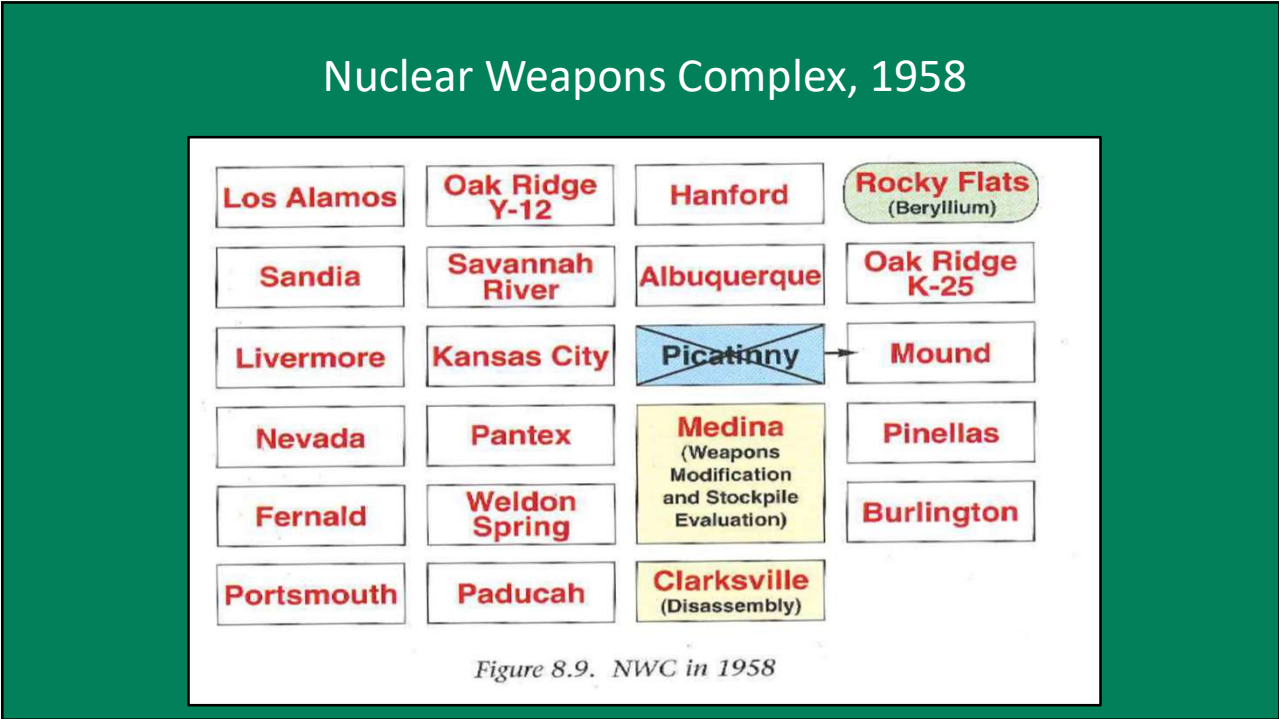
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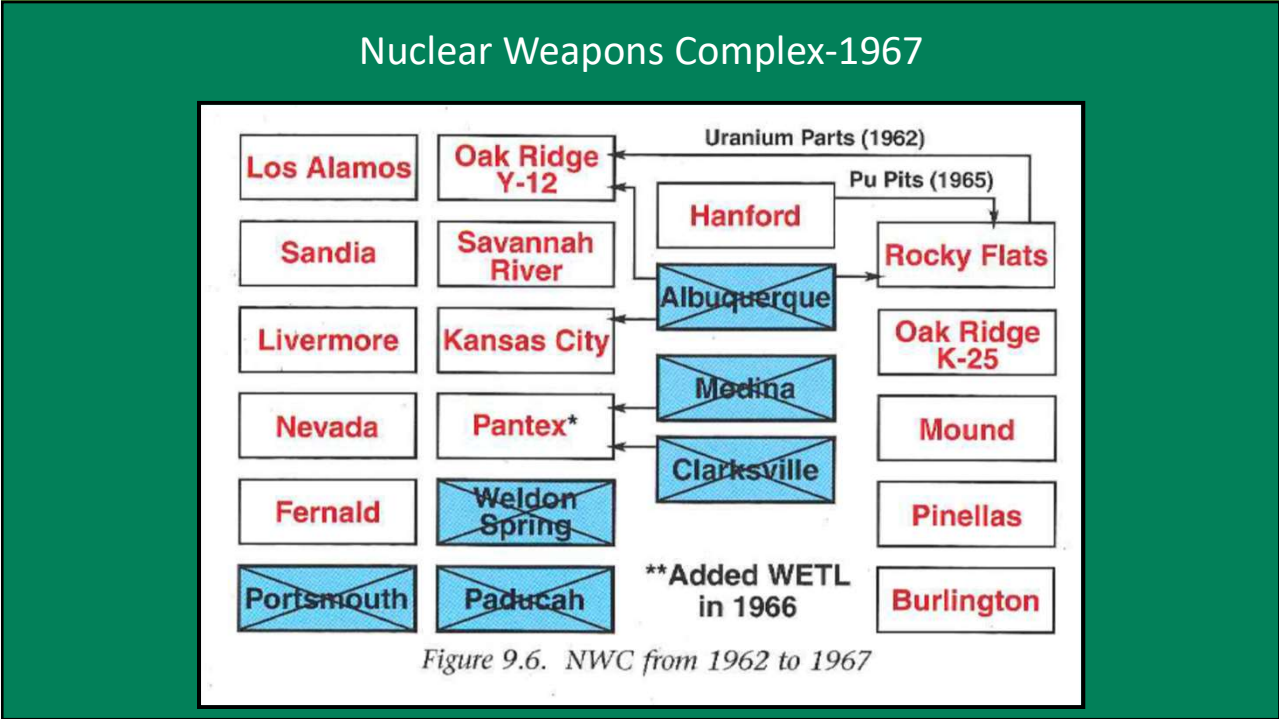


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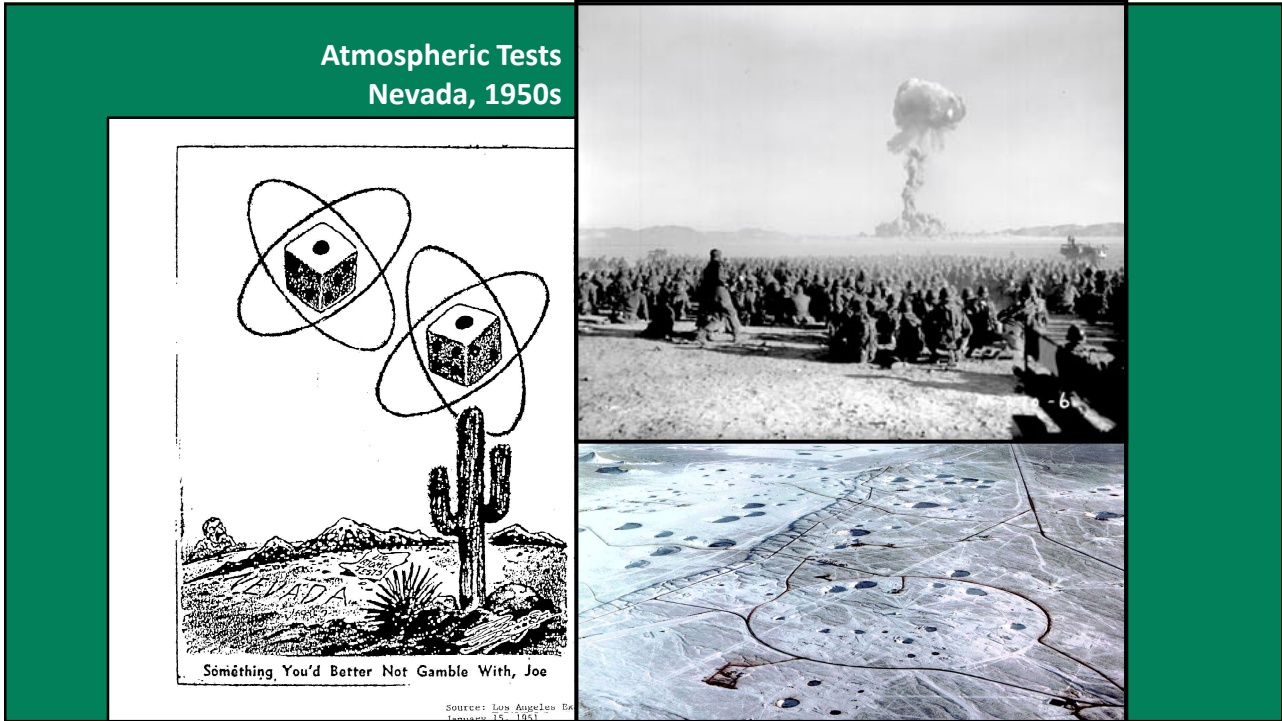


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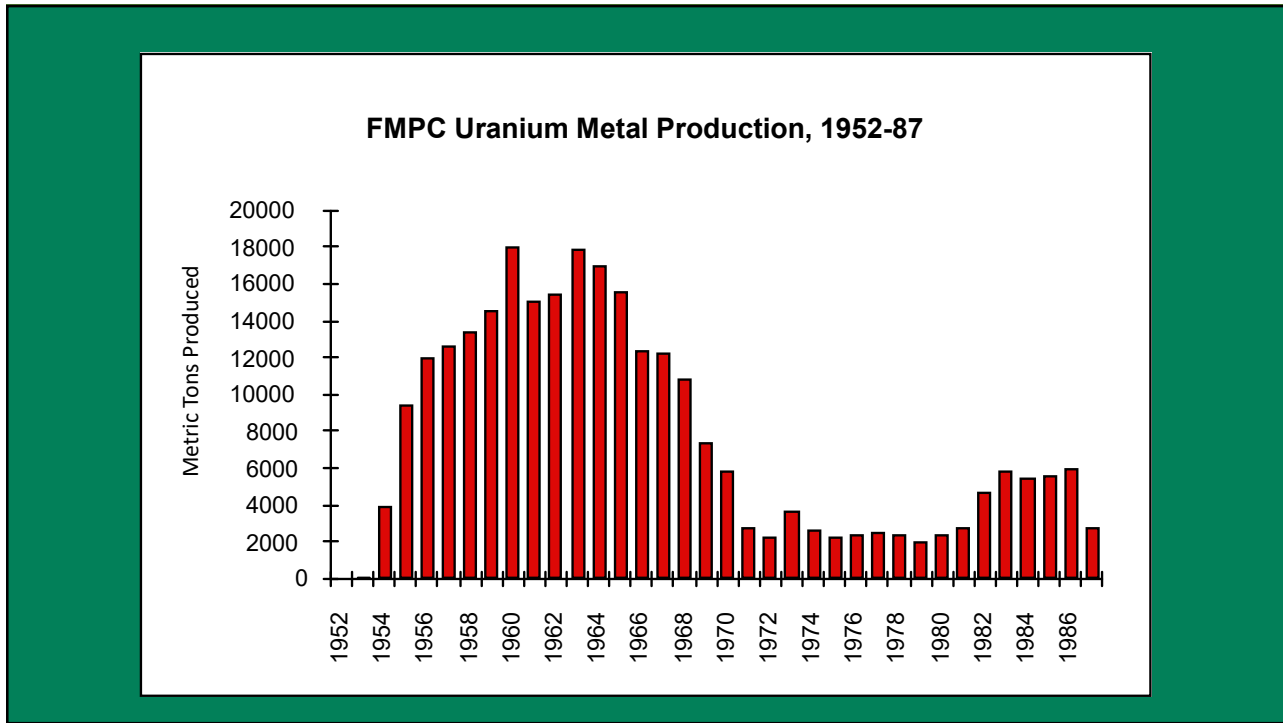
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Controversies for Fernald—and DOE

“Clawsons of Ohio”
TIME Magazine, Oct. 31, 1988



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New Directions at Fernald



LEED Platinum (top)
Visitor Center (bottom)



Lisa Crawford at the on-site disposal cell

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New Directions for the Weapons Complex



Admiral James Watkins
(Secretary, 1989-1993)

- Former nuclear sub commander, Chief of Naval Operations
- Transitioned DOE to post-Cold War era
- Most significant figure in DOE's history since Gen. Leslie Groves

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Admiral Watkins as DOE Secretary

- Established new “Office of Environmental Restoration and Waste Management” (now EM)
- Created “Tiger Teams” to conduct unannounced inspections of DOE sites
 - “My problem today is that I don’t have a line management function from me down to the field office that makes any sense.”
 - “This Department has had no credibility. There has been an arrogance here, a fiefdom mentality, a complete separation of headquarters and field operations...”

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Defense Nuclear Facility Safety Board

- Established in 1988, began operations in 1989
- Independent Executive Branch to Review Defense Nuclear Facilities
 - Design, Construction, Operation, and Decommissioning
 - Ensure that Public Health and Safety are Adequately Protected
 - Makes “recommendations” to the Secretary of Energy
 - Secretary of Energy shall fully cooperate with the Board
- First “External Oversight” of Weapons Complex



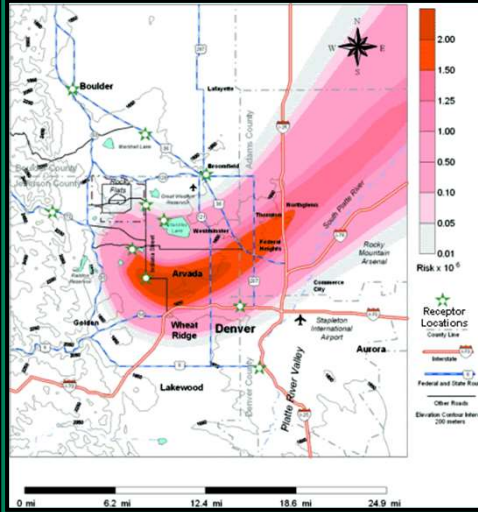
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Rocky Flats Raid, 1989



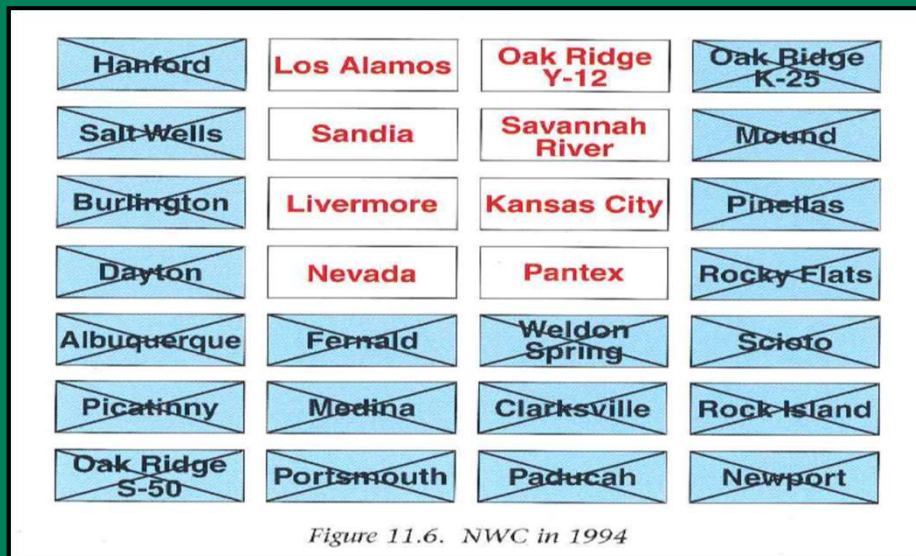
Technician at Rocky Flats measures buildup in a drum



Radioactive contamination from the Rocky Flats Plant

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Nuclear Weapons Complex, 1994-Present



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The Historian's Perspective

- Energy policy and sources have not historically been DOE's primary work
 - The "Big 3" are nuclear security, cleanup, and science
 - Energy policy has been a political focus, but not (until BIL/IRA) been a major percentage of DOE budget or staff
- DOE is decentralized by design
 - Mission is paramount at local level
 - DOE grapples with HQ vs Field dynamics, and with contractor/Fed relationship

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The Historian's Perspective

- Risk management is an ongoing challenge
 - Risk is socially constructed
 - There is no single way to define an "acceptable risk"
 - Authority is not always authoritative
- DOE has struggled with effective public engagement
 - Trust is difficult to maintain in uncertain environments
 - DOE has improved its approach in recent decades

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It pays to learn about the past...

EEOICPA Payouts to date:	\$23.4 Billion
RECA Payouts to date:	\$2.6 Billion
DOE-EM Budget (FY22):	\$8.5 Billion
Projected Total Cleanup Cost:	~\$500 Billion

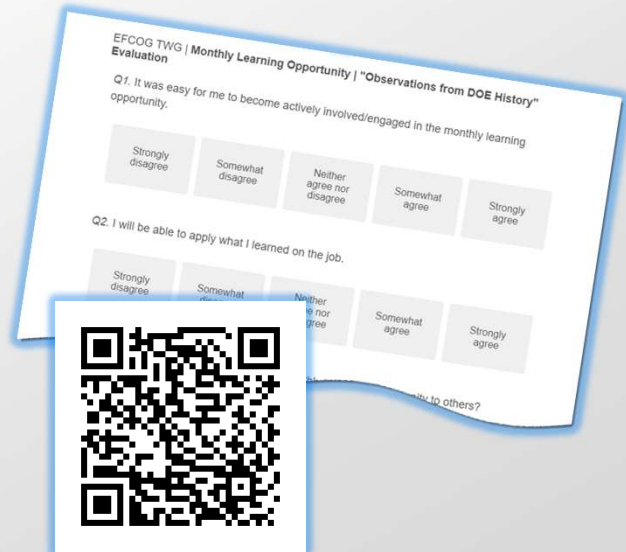
We want to avoid creating future liabilities.

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Got Feedback?

- Please complete the Monthly Learning Opportunity Evaluation (see link in the chat).
- It only contains four questions and should take about a minute!



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 Chat Exercise

What was your greatest insight from the presentation?



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 Next Month's Learning Opportunity



 Training Working Group

Facilitation, Training, and Coaching:
What's the difference and how are they used throughout DOE complexes?"

A panel discussion with members from across the DOE complexes

Monday, July 10, 2023 | 11 am MT

- Invites will be sent this week to the TWG community.

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