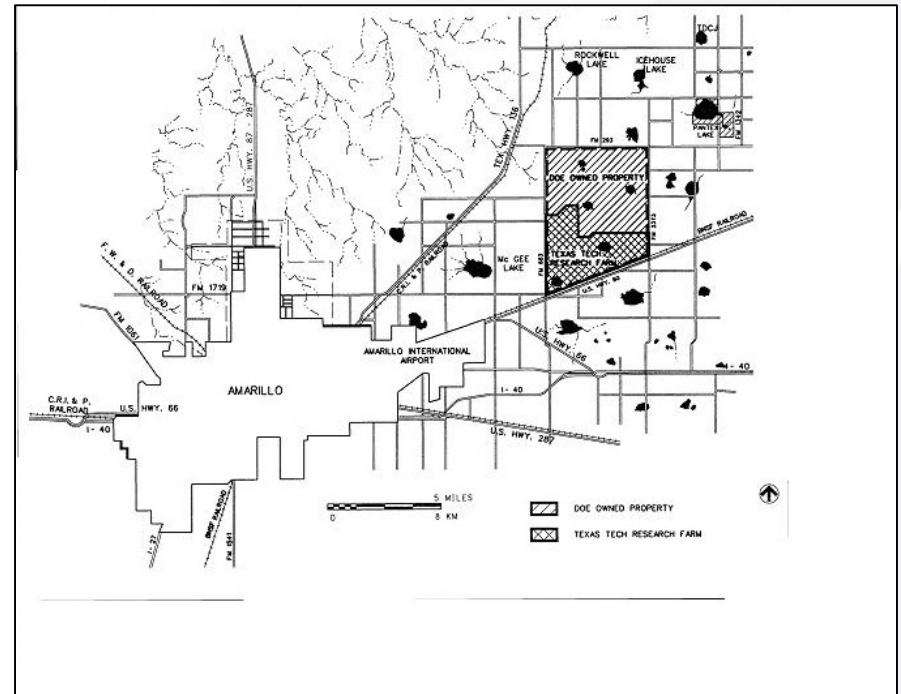




Pantex History

Pantex prehistory archeological site

- **7,100 acres survey for archeological sites**
- **69 archeological sites recorded**
- **12 Pre-World War II**
- **57 prehistoric lithic scattered sites**



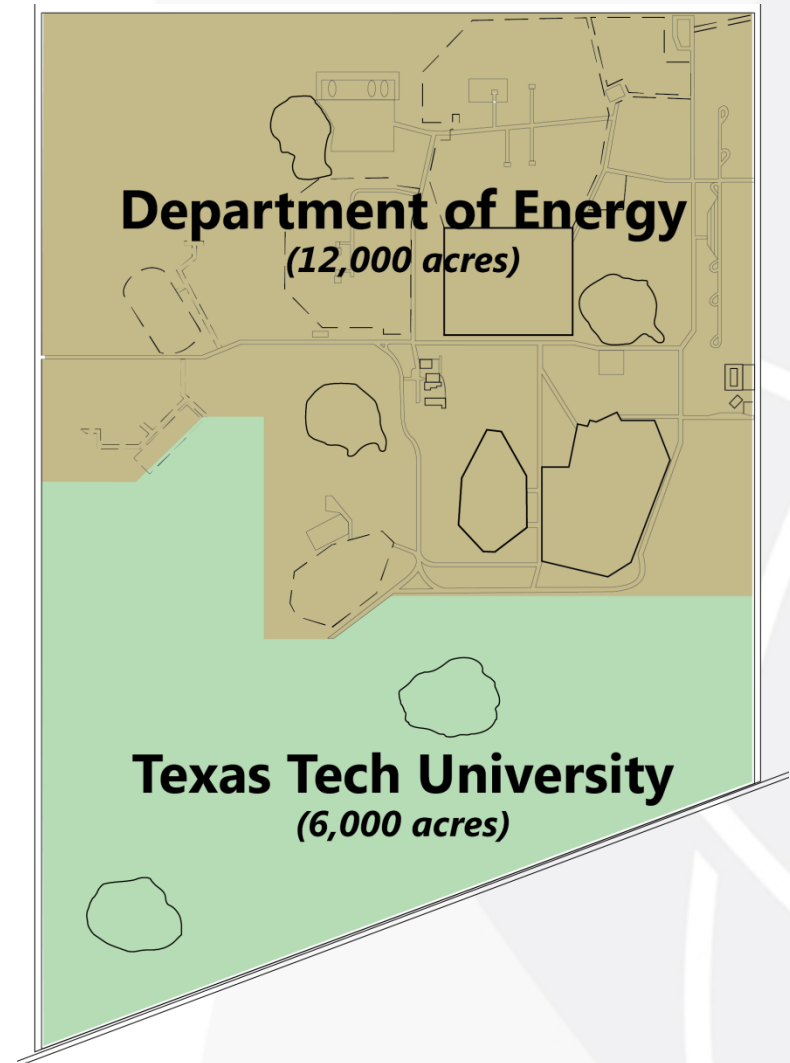
Prehistoric bison bones

A Pantex geologist discovered these old bones poking out of the earth in a small drainage channel on the plant grounds.



Site layout

- Department of Energy (DOE) owns northern 12,000 acres, leases remaining 6,000 acres from Texas Tech University
- Most plant operations conducted in 622 buildings on $\approx 2,000$ acres
- Five DOE wind turbines supply ≈ 60 percent of plant electricity



1942 – World War II

- Constructed in 1942 on 16,000 acres
- 18,000 acres today
- Last of 14 bomb-loading plants constructed during WWII
- Amarillo Air Force Base, 1941-1968



1942-1945 – World War II

- **Three active load lines**
 - 250-lb bombs (116,060)
 - 500-lb bombs (1,978,285)
 - 23-lb bombs (1,961,391)
 - 105-mm shells (6,035,008)
- **Peak employment – 5,254 (60 percent female)**
- **M&O contractor
Certain-Teed Products
Corporation**



1945 – World War II

- August 6, 1945 - Little Boy
- August 9, 1945 - Fat Man



Little Boy



Fat Man

World War II Ends



August 15, 1945



1947-1949 – Texas Tech University

- **War Assets Administration**

- 1947 - Deeded 8,000 acres to Texas Tech University for agricultural experiment station
- 1949 – Deeded remaining 8,000 acres
- Price was \$1 with a recapture clause



1946 – Atomic Energy Act

- Atomic Energy Commission (AEC) takes over January 1, 1947
- AEC answers to Joint Committee on Atomic Energy (JCAE)
- AEC Inherits “Manhattan Project” Sites
 - Hanford
 - Oak Ridge
 - Los Alamos



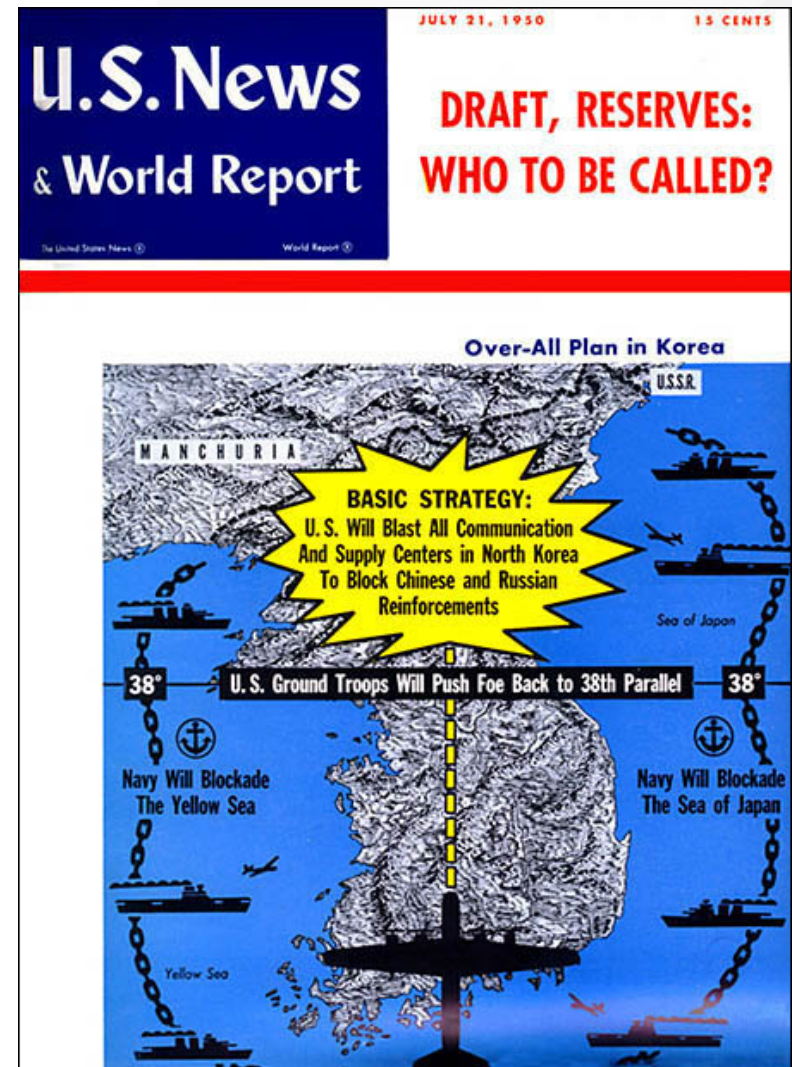
1948-1952 – Truman Administration

- Truman decision to rely on nuclear weapons
- Truman decision to build the “Super”
- Bulk of the Nuclear Weapons Complex (NWC) authorized and/or constructed



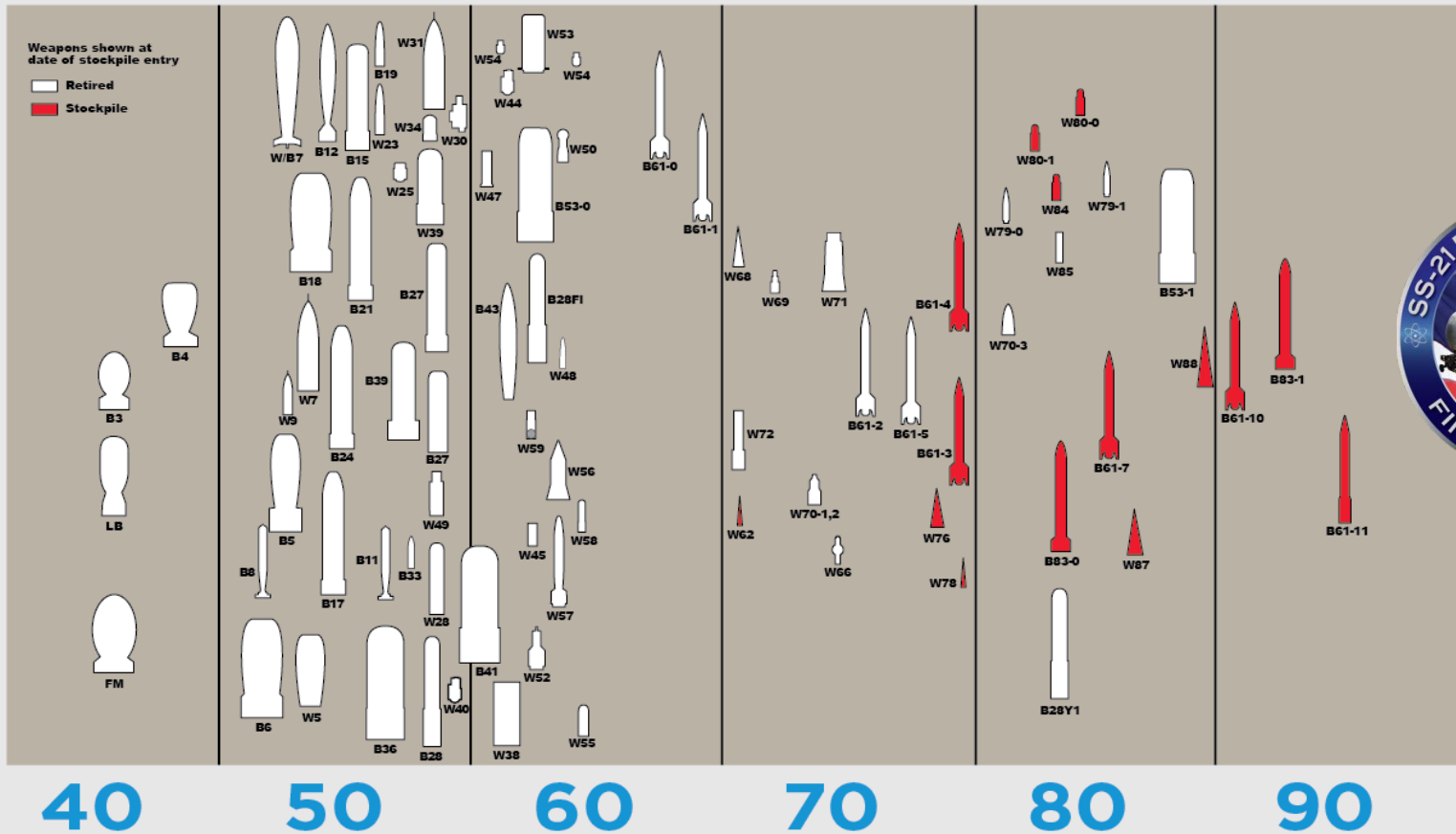
1948-1952 – Truman Administration

- National Security Council (NSC)-68 lays the foundation
- Korean War provides the motivation



Cold War arms race

Stockpile Milestones



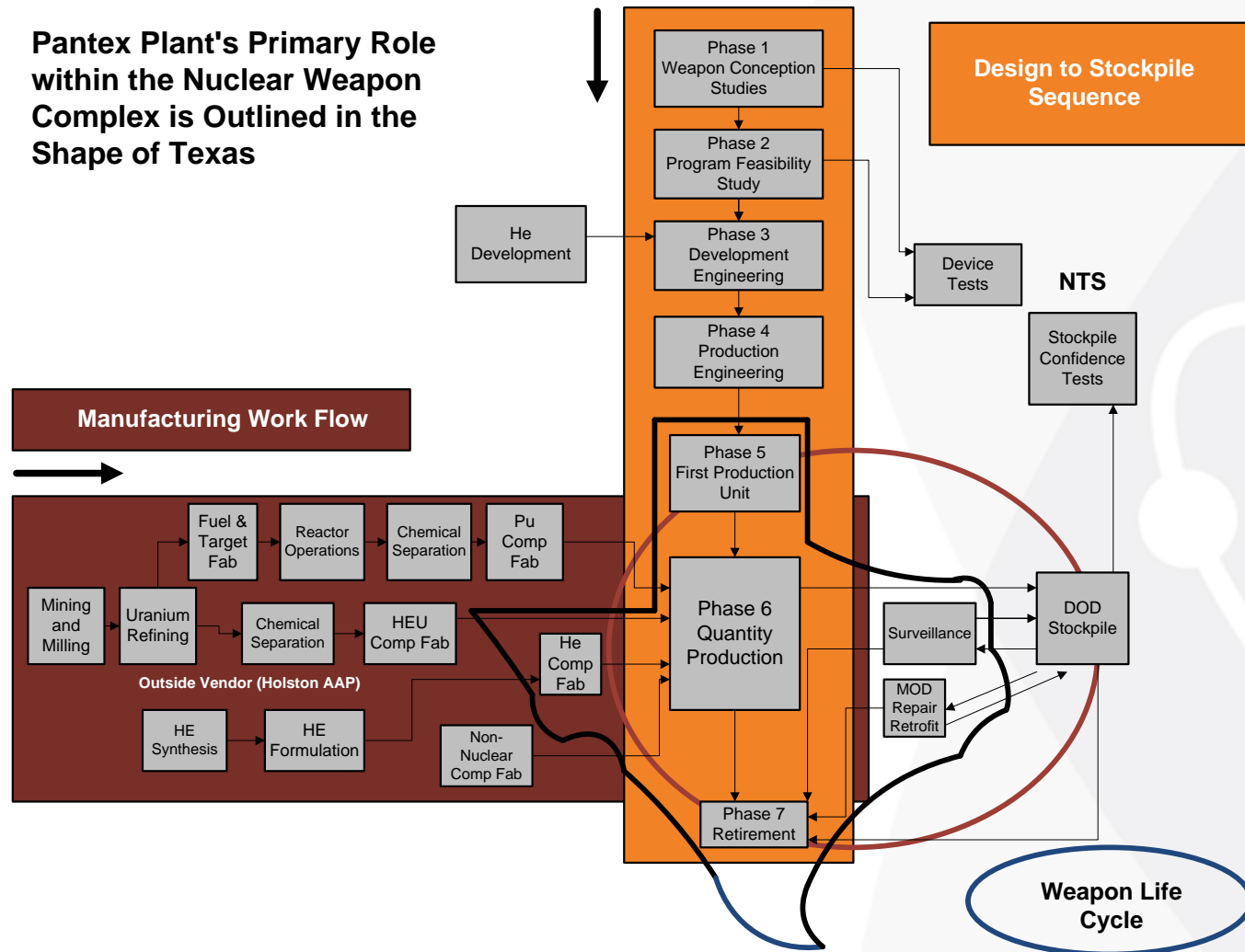
1951 – AEC reclaims Pantex

- High Explosives (HE) fabrication
- Zone 12
- Common-wall bays
- Melt / cast HE process
- Procter & Gamble Defense Corporation



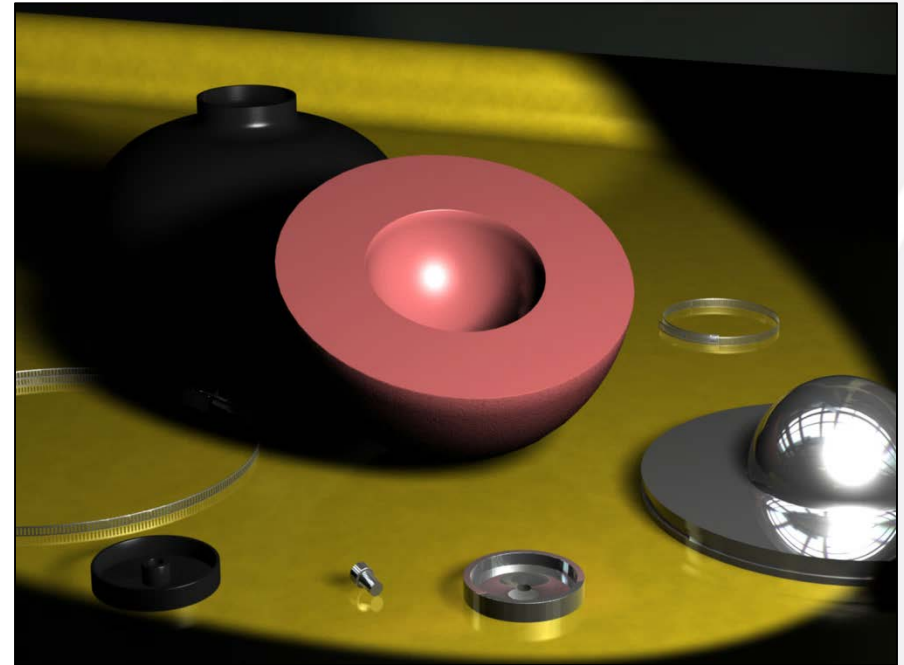
1951 – AEC reclaims Pantex

Pantex Plant's Primary Role within the Nuclear Weapon Complex is Outlined in the Shape of Texas



1956 – Sealed pit design

- New weapon design
- New M&O contractor
 - Mason & Hanger Corporation
- New facility design



1956 – Gravel Gerties

- Designed to minimize spread of nuclear material in the unlikely event of an accidental High Explosives detonation



1960 – New Mission

High Explosives development

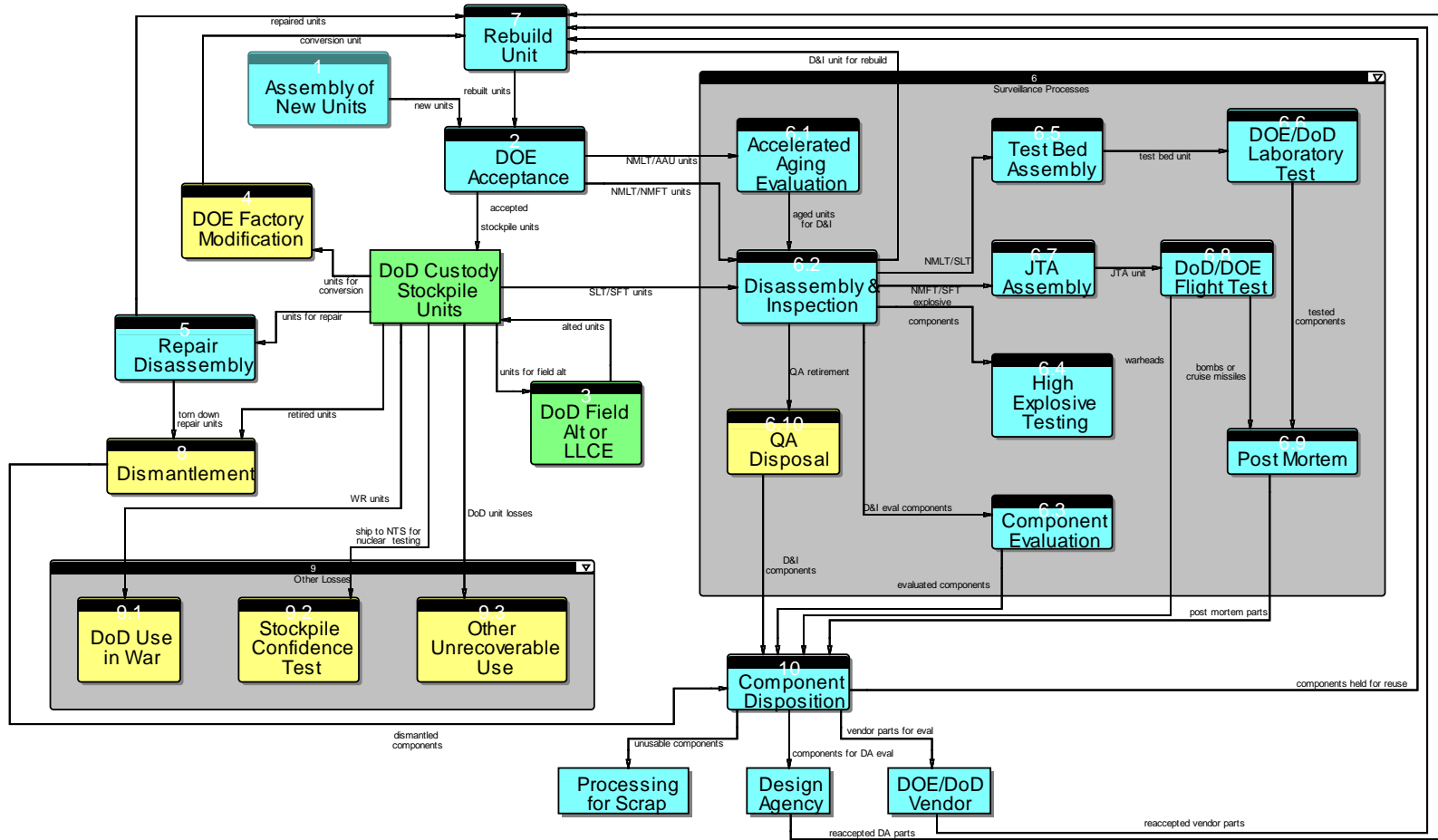
- Melt / cast to press / machine
- Drive for lighter and smaller

1965-1966 – AEC consolidation

- **Clarksville and Medina modification centers closed**
- **In-Flight Insertable programs dismantled**
- **New production slowing**
- **Surveillance mission to Pantex**



Weapon lifecycle – surveillance



1970 – Separated bay design

- Common-wall bays used since 1951
- Isolated or separated bay design created in 1970



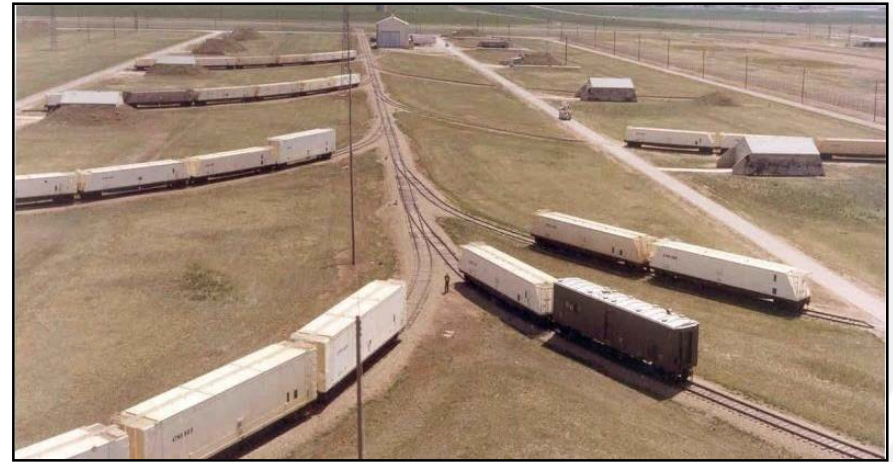
1975 – AEC consolidation

- AEC portion of Burlington plant closed



1987 – Last railcar shipment

- 1951-1976 – rail only
- 1976-1987 – rail & trailer
- 1987-present – trailer only



1991 – Mission shift to disassembly

- End of the Cold War
- Bush speech on unilateral dismantlement
- Focus on disassembly, not assembly

Zone 12



1953

Zone 12



1967

Zone 12

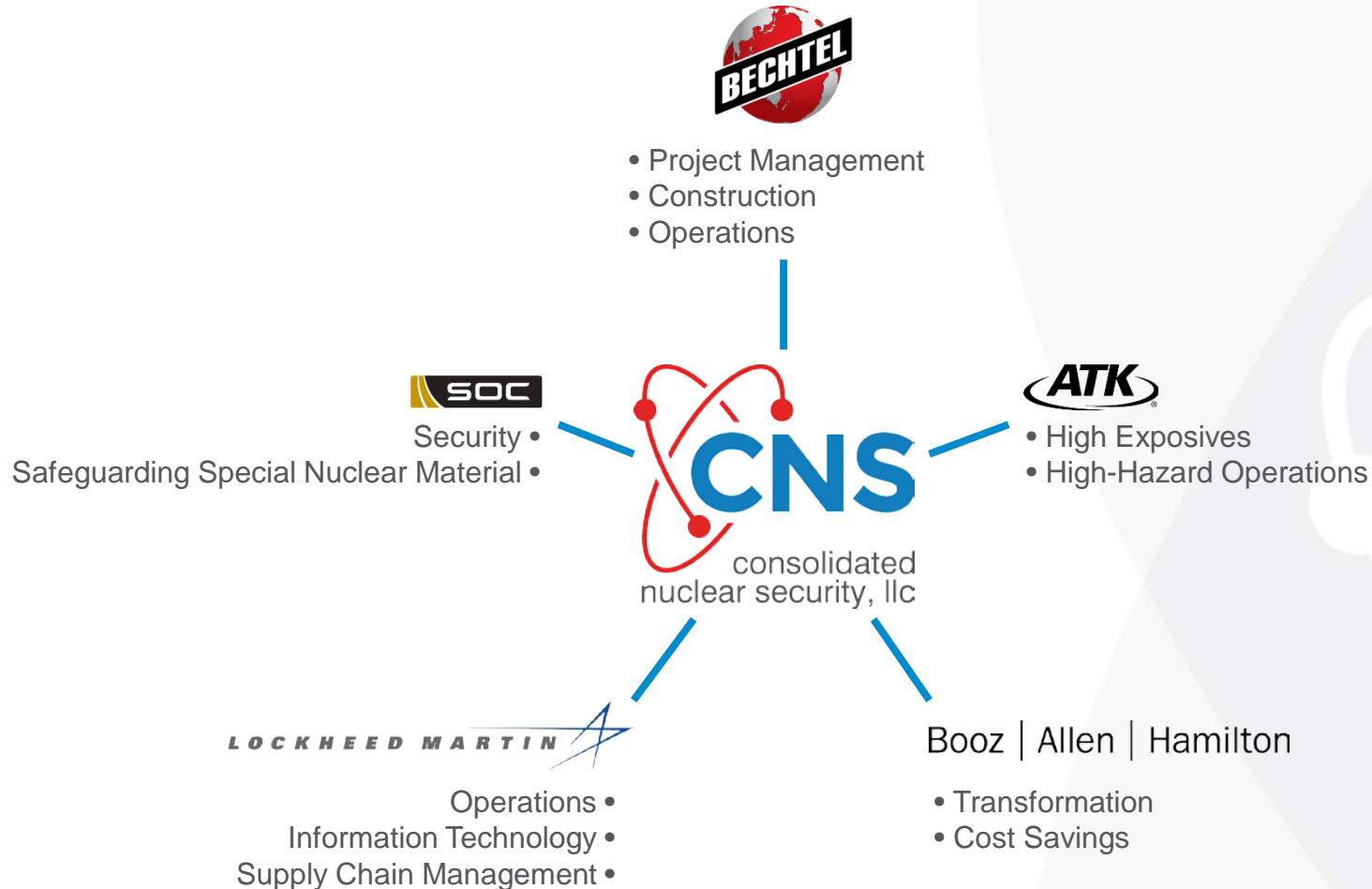


1997

February 1, 2001 – New M&O Contractor



July 1, 2014 – New M&O contractor



Pantex missions



National Security

- Safeguards & Security
- Non-Proliferation
- Stewardship
- Environmental
- Infrastructure
- Human Capital
- Energy

Nuclear Explosive Operations

- Life Extension
- Surveillance
- Dismantlement

Nuclear Material Operations

- Storage
- Surveillance
- Reuse / Requalification

High Explosive Operations

- Manufacturing
- Surveillance
- Testing

Programs



Weapons assembly

- Joint test assemblies
- Test beds
- Modifications
- Repairs
- Surveillance rebuilds

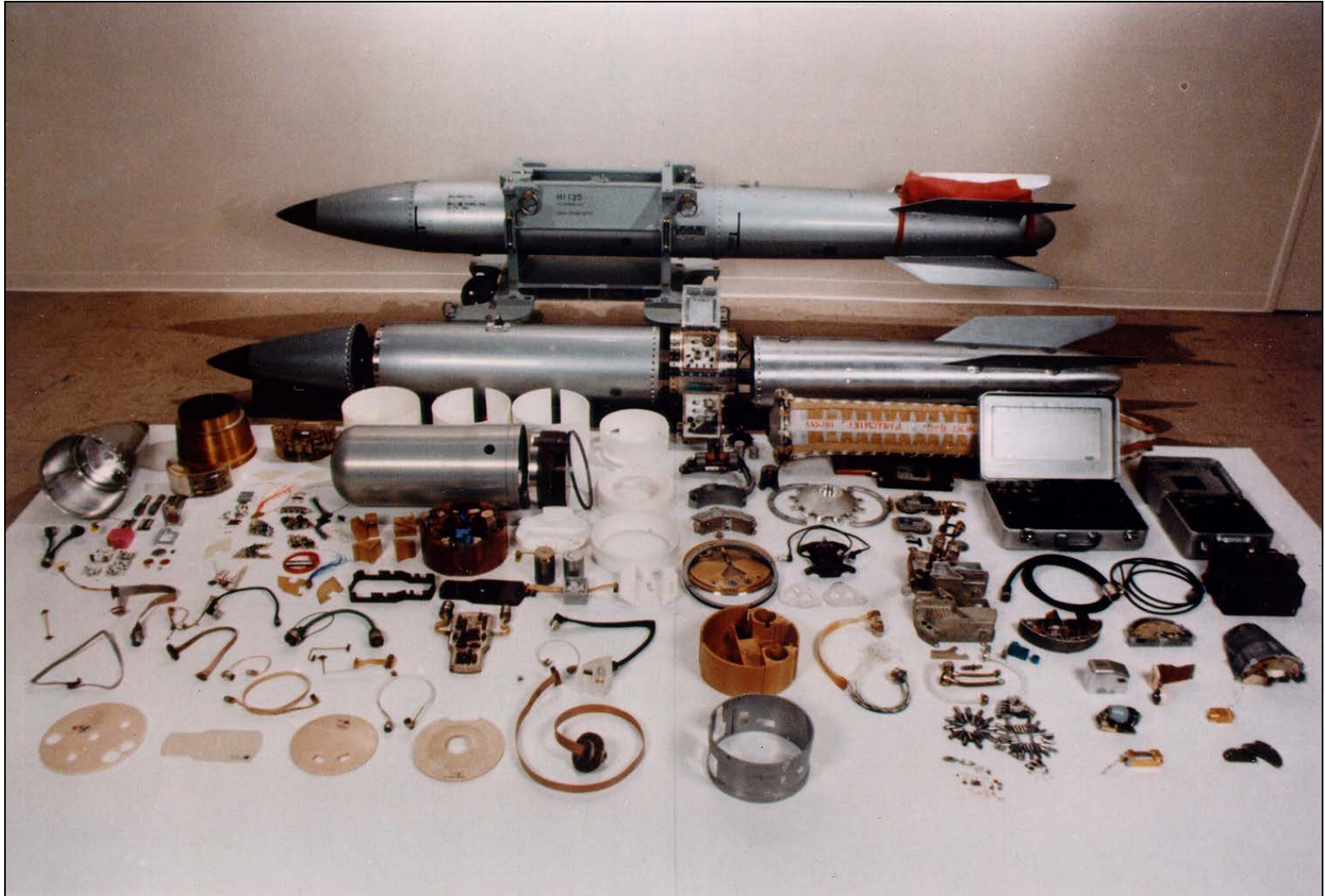


Weapons disassembly

- Disassemble nuclear weapons retired from the stockpile



Disassembled B61



Weapons maintenance, modification, and evaluation



High Explosive Center of Excellence

- Pantex Plant was selected by the National Nuclear Security Administration (NNSA) as the High Explosive Center of Excellence



Fabrication of high explosives

- Research
- Development
- Fabrication
- Testing

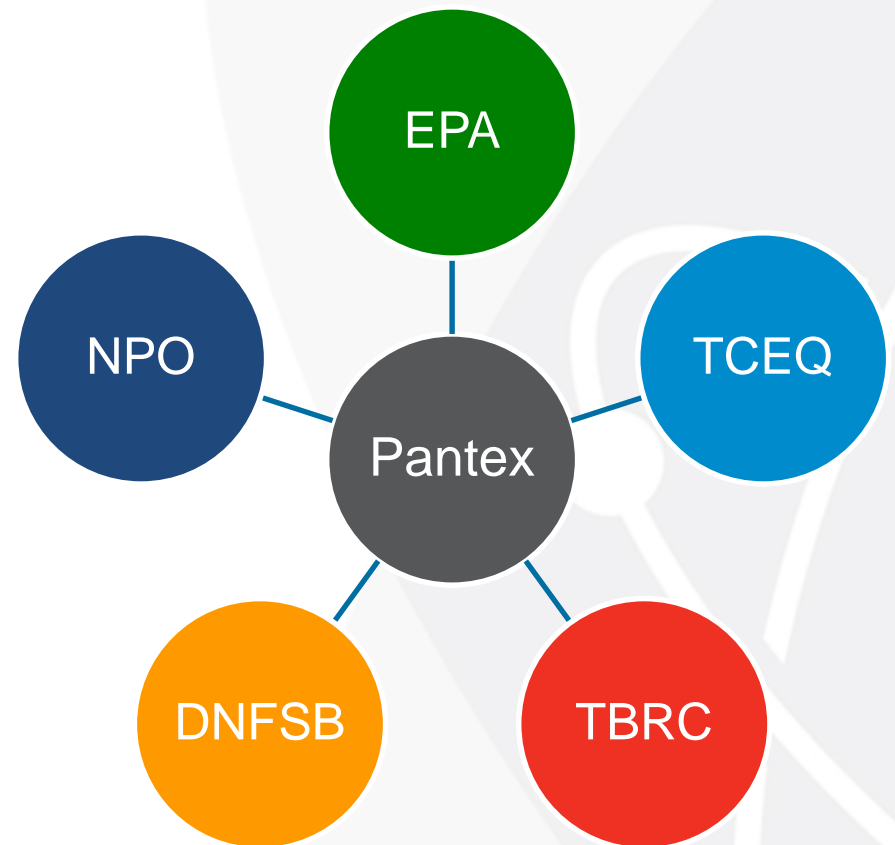
Sanitization of components

- Removal of classified / sensitive information and proliferation concerns



External oversight

- **Environmental Protection Agency (EPA)**
- **Texas Commission on Environmental Quality (TCEQ)**
- **Texas Bureau of Radiation Control (TBRC)**
- **Defense Nuclear Facilities Safety Board (DNFSB)**
- **NNSA Production Office (NPO)**



Nuclear Safety Culture

- Employees stop work when faced with uncertain conditions
- Managers support the decision to stop work and help evaluate the situation



The future

The mission of the Pantex Plant promises to be an enduring one as dwindling worldwide stockpiles of nuclear weapons demand increased reliability to maintain the security of the United States through a credible nuclear deterrent.





Questions?