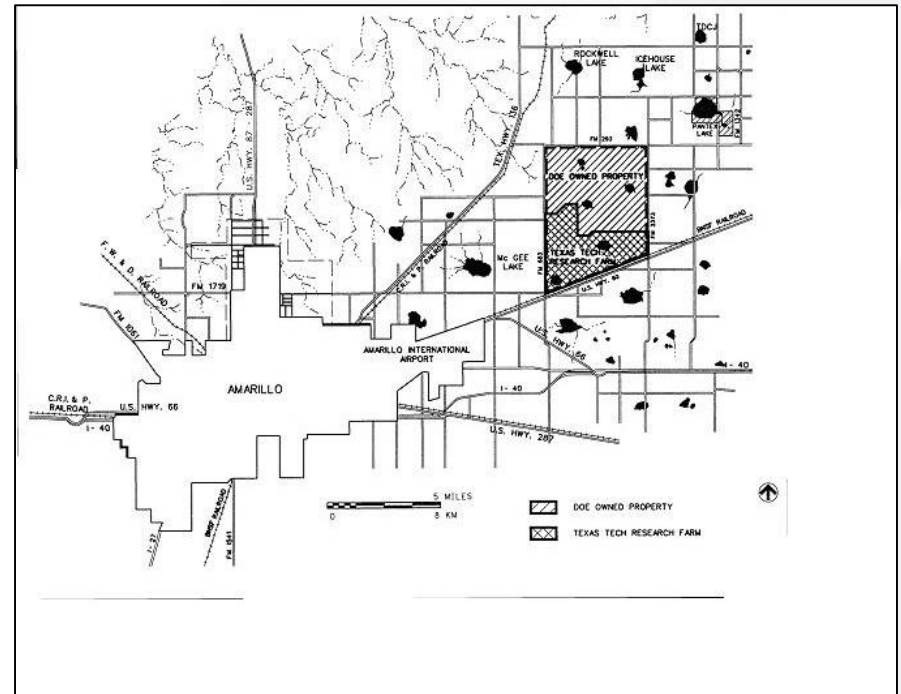




# Pantex History

# 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



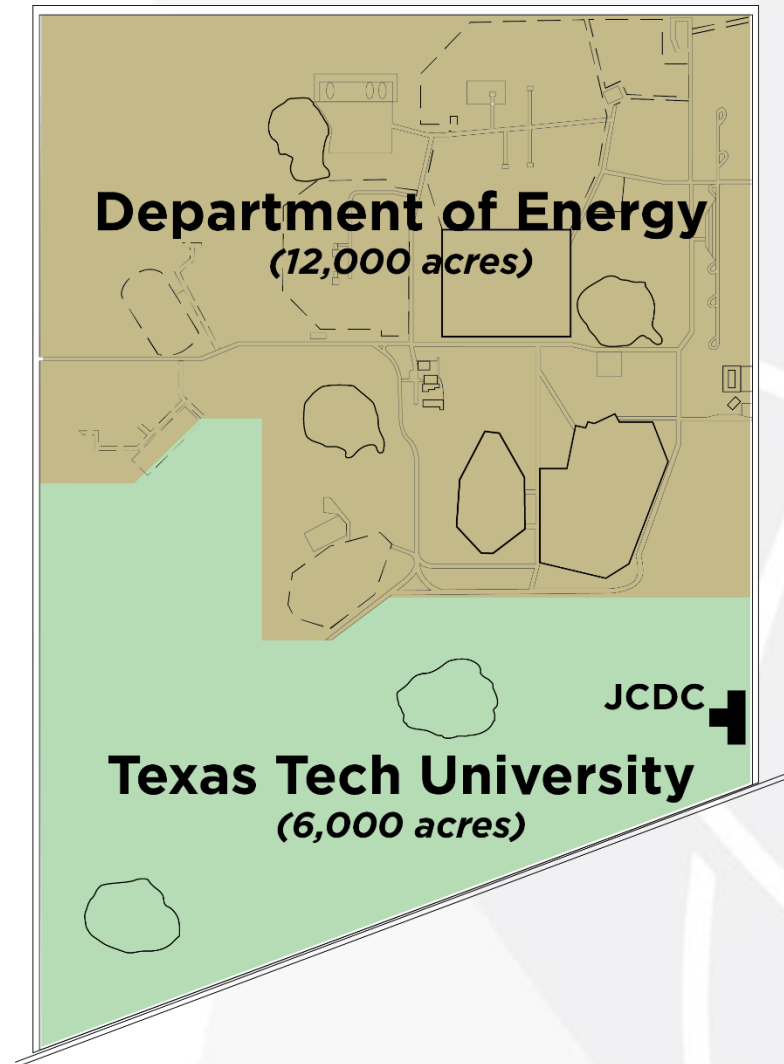
## Prehistoric bison bones

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 produce the equivalent of 60 percent of plant electricity



## 1942 – World War II

- Constructed in 1942 on 16,000 acres
- 17,500 acres today
- Last of 14 bomb-loading plants constructed during WWII
- Amarillo Air Force Base, 1941-1968



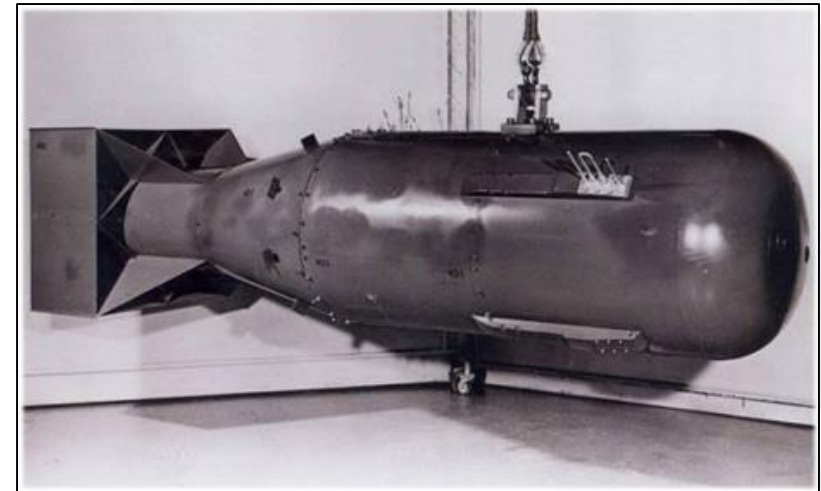
## 1942-1945 – World War II

- **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**
- **Pantex Village (1943-1968)**



# 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



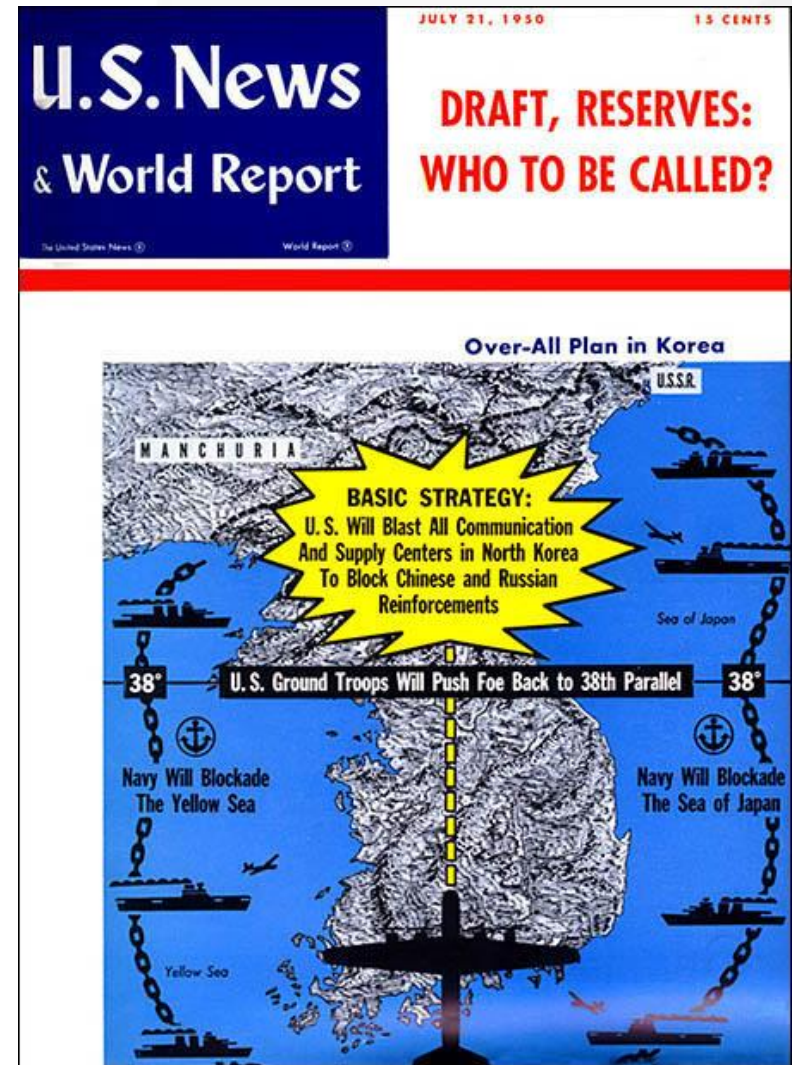
## 1948-1952 – Truman Administration

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



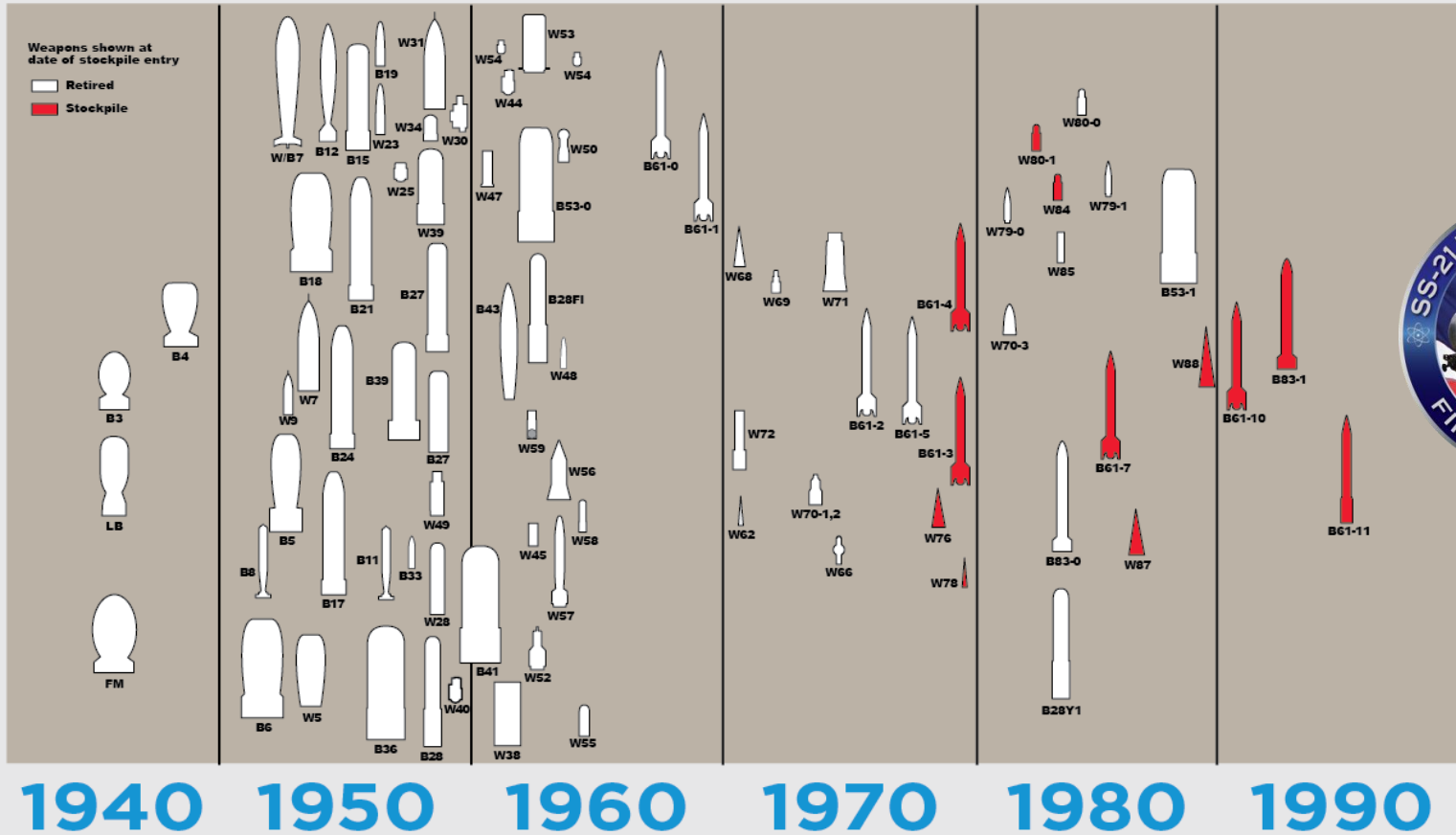
## 1948-1952 – Truman Administration

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



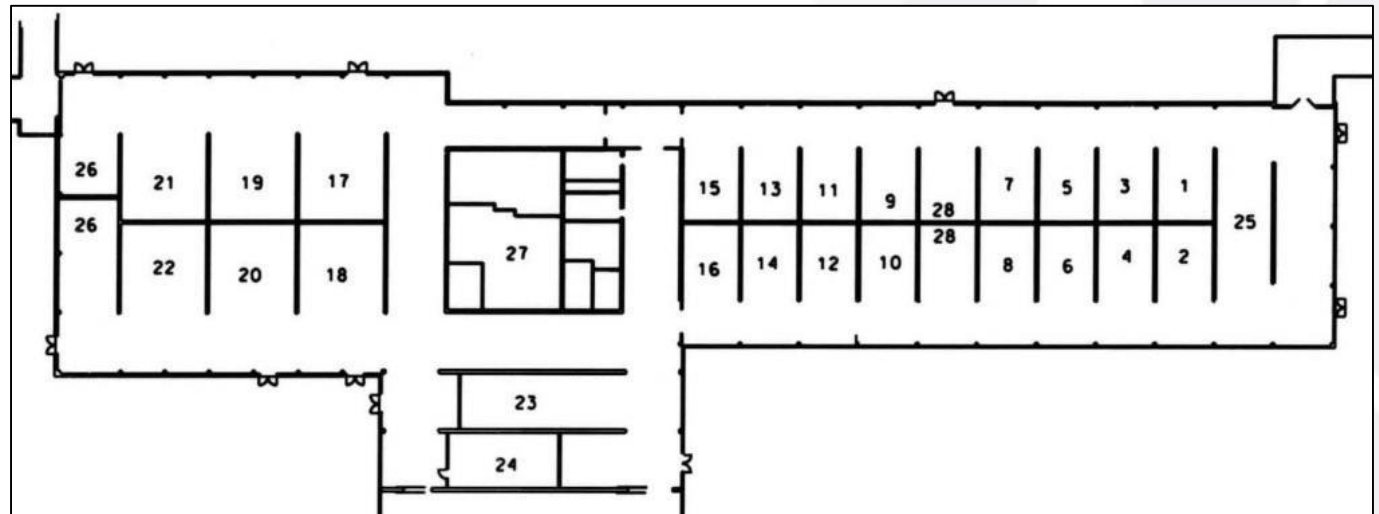
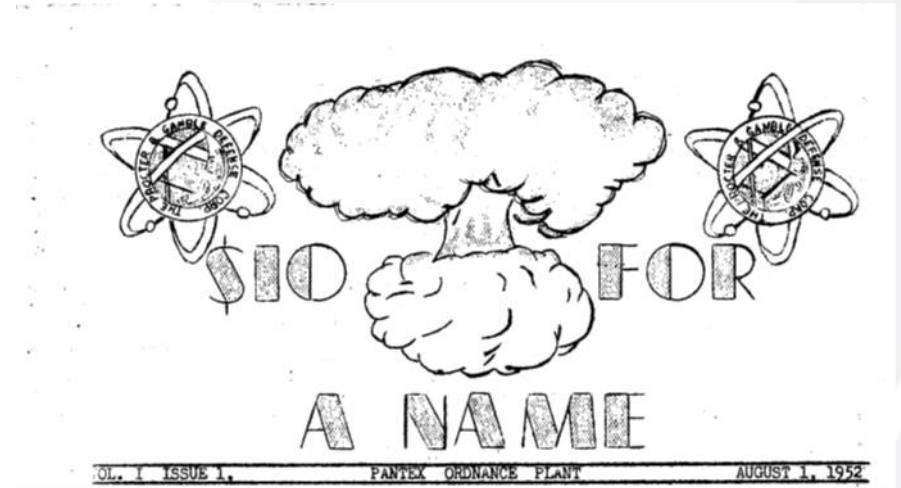
# Cold War arms race

## Stockpile Milestones



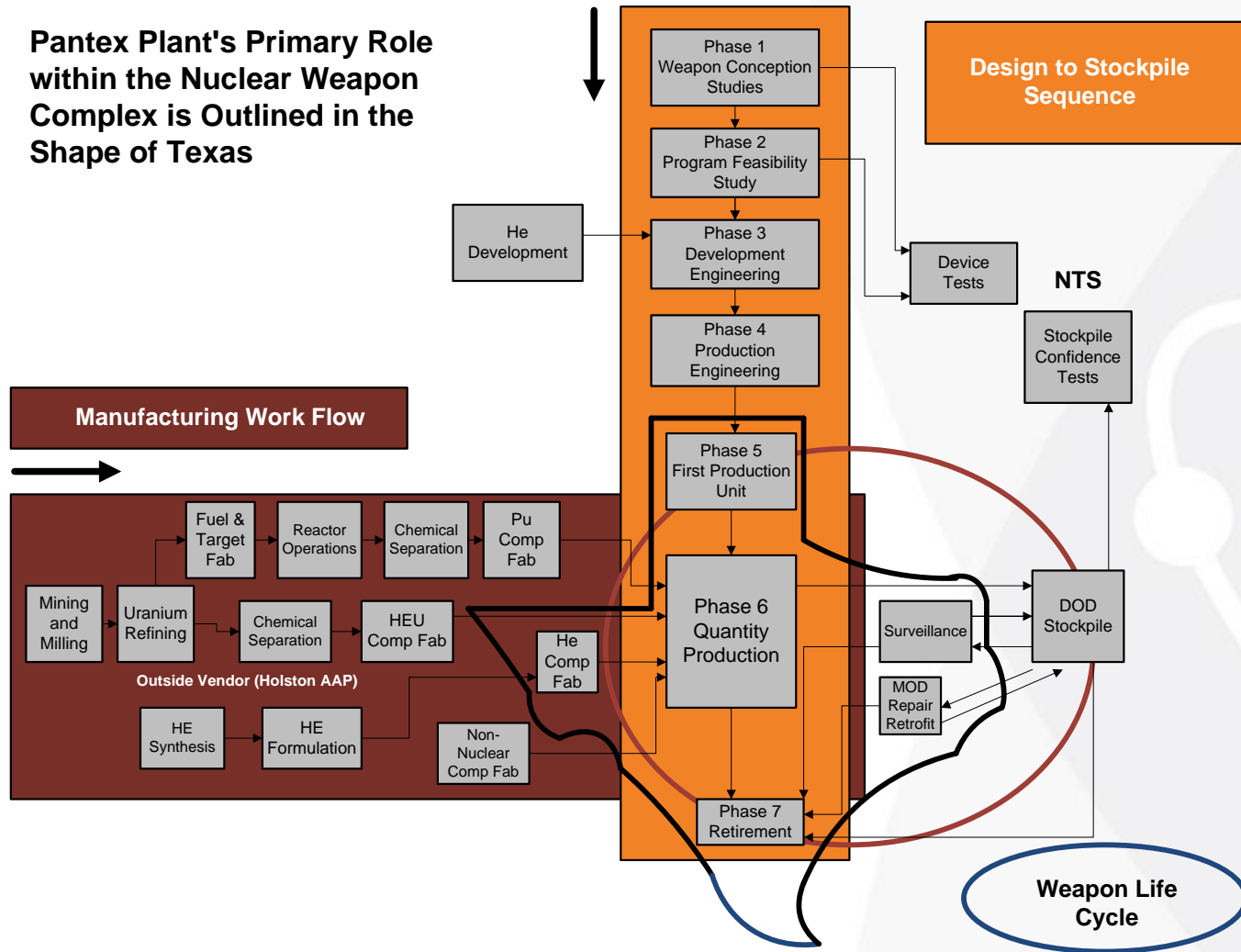
# 1951 – AEC reclaims Pantex

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



# 1951 – AEC reclaims Pantex

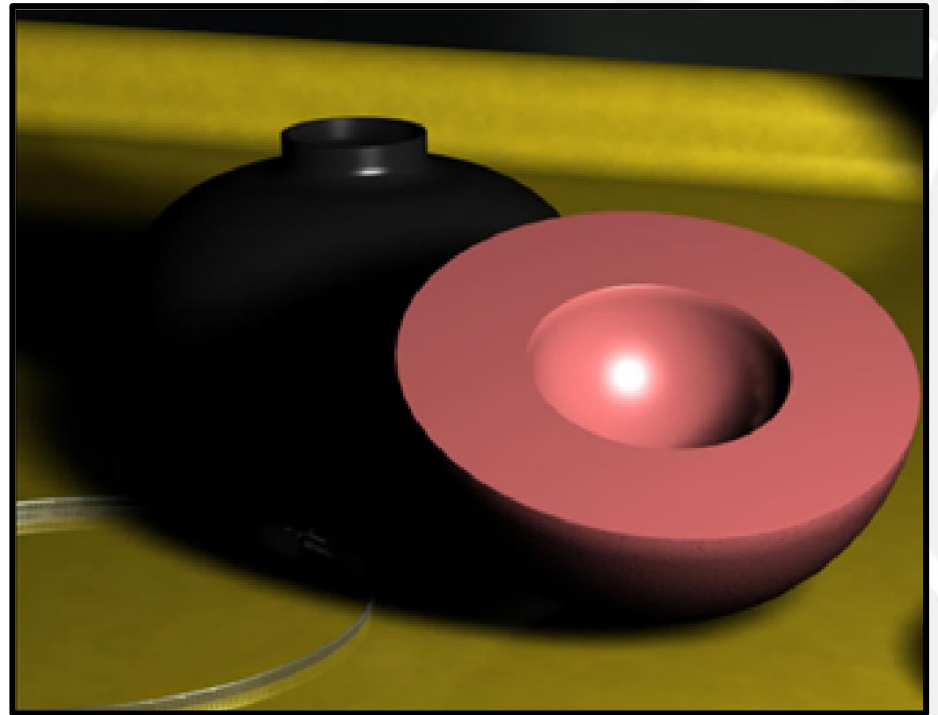
**Pantex Plant's Primary Role within the Nuclear Weapon Complex is Outlined in the Shape of Texas**





## 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



Zones 11 and 12 - 1959

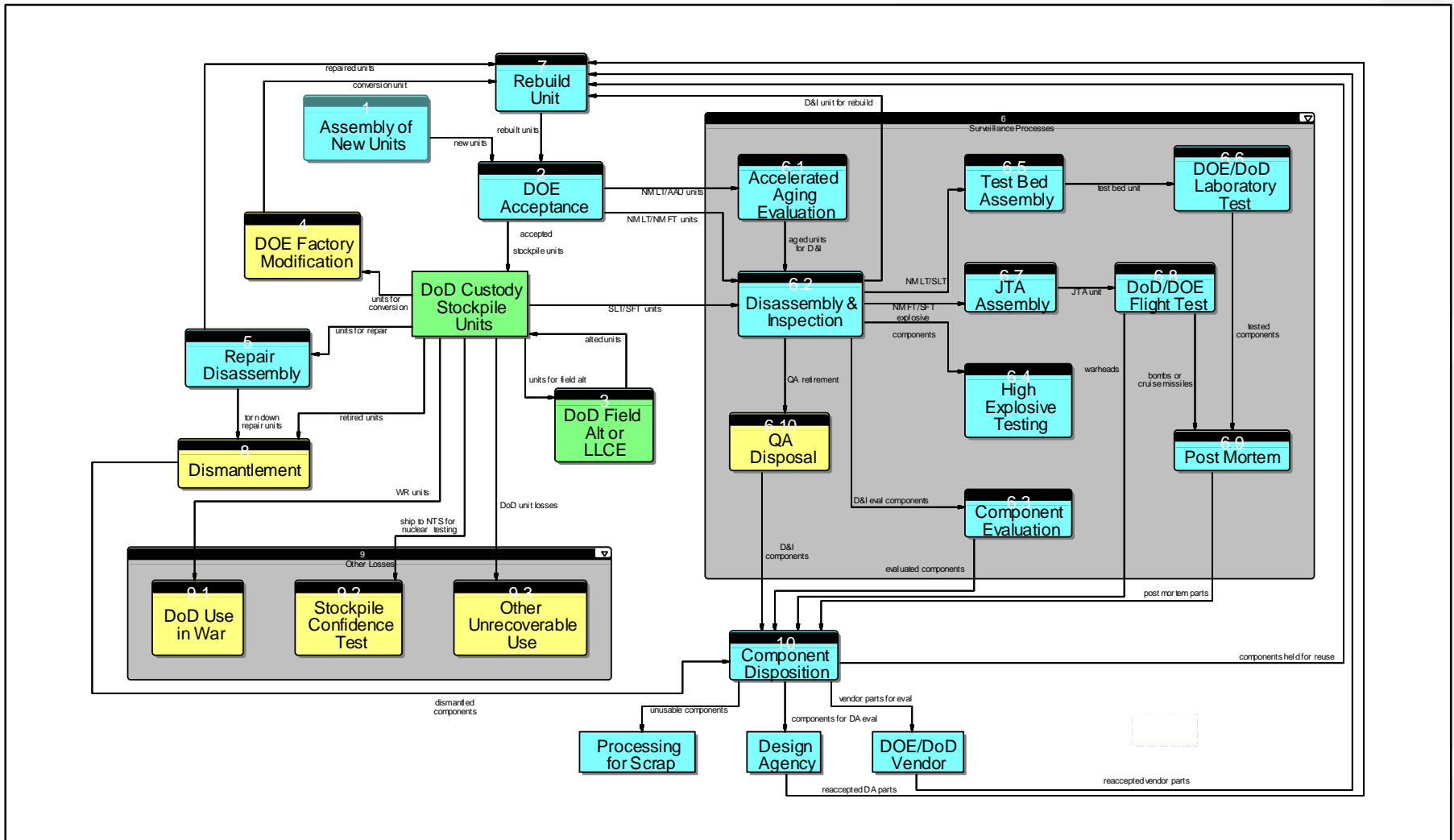


## 1965-1966 – AEC consolidation

- **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



0680-040-01 / 6-29-1980

PANTEX TRAIN MAKE-UP

0080087-60 / 12-7-2007



## 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

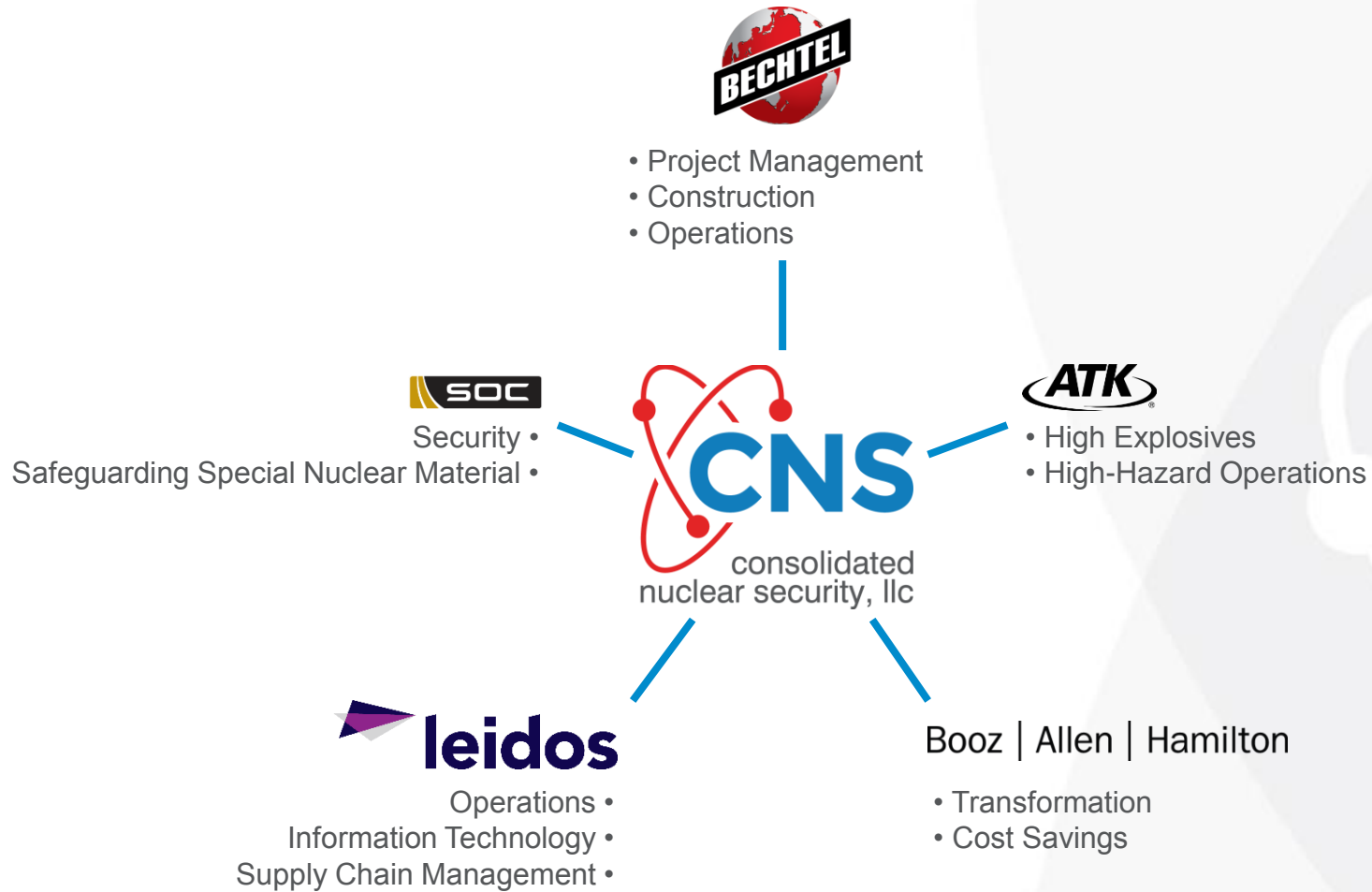


1997

# February 1, 2001 – New M&O Contractor

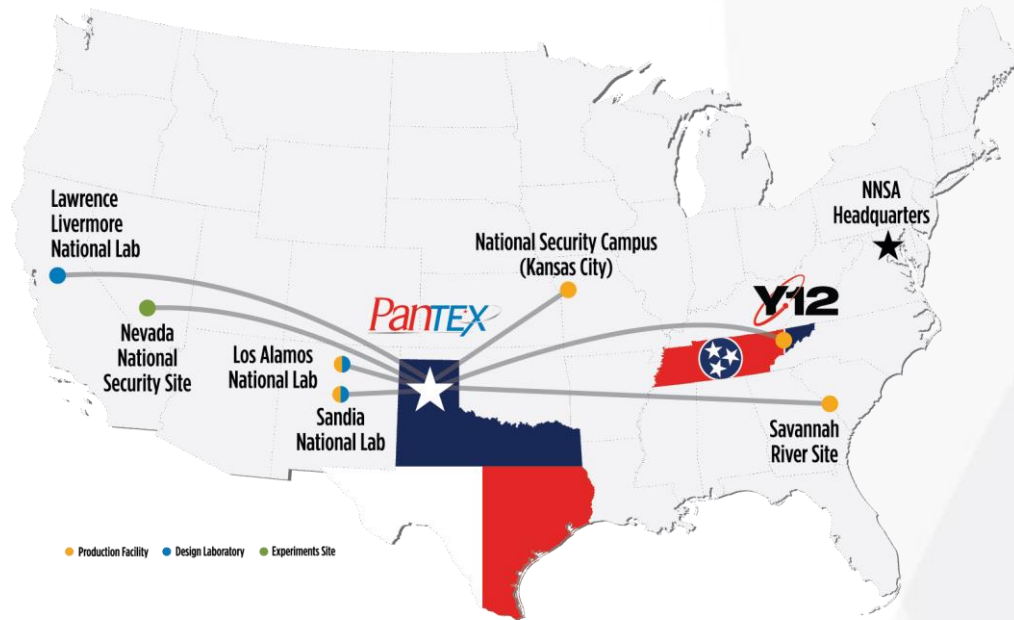


# July 1, 2014 – New M&O contractor



# Pantex missions

## ALL ROADS LEAD TO PANTEX



### National Security

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

### Nuclear Explosive Operations

- Life Extension
- Surveillance
- Dismantlement

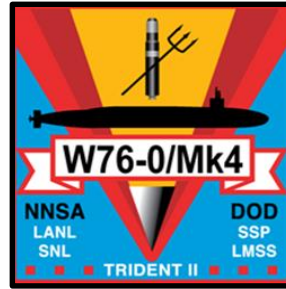
### Nuclear Material Operations

- 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



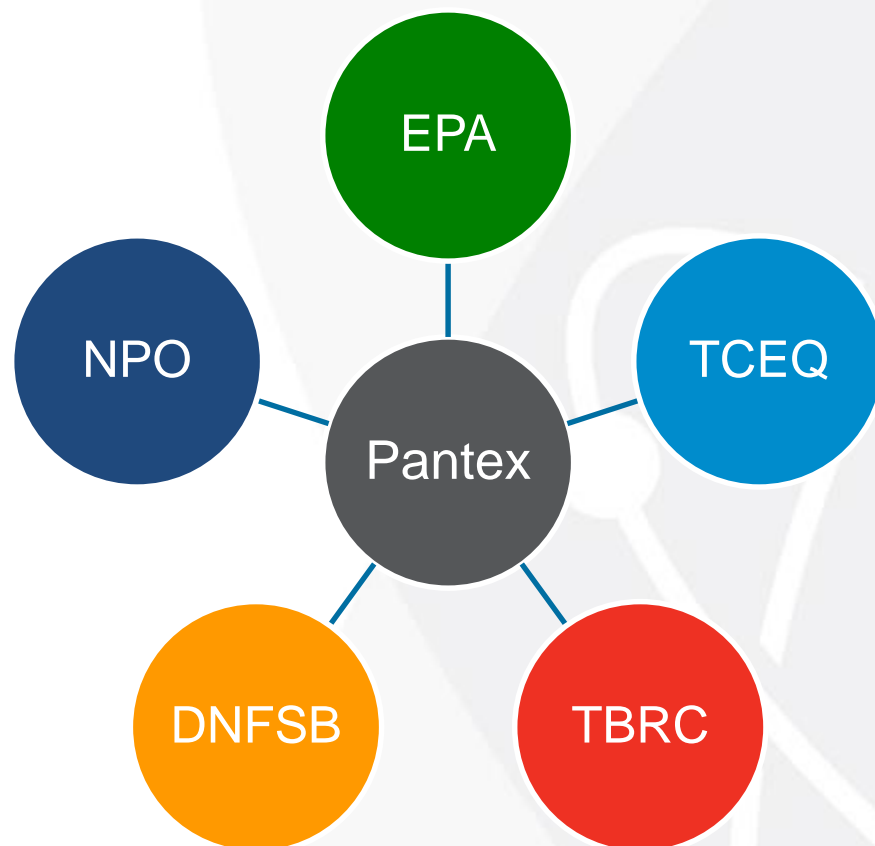
# Sanitization of components

- 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.



An aerial photograph of a large industrial or manufacturing complex, possibly a refinery or chemical plant, situated in a rural area. The facility features numerous large white storage tanks, several large industrial buildings with grey roofs, and a complex network of pipes and roads. The site is surrounded by green fields, some of which are divided into sections, and several large blue ponds or reservoirs. In the background, there are more fields and a line of wind turbines under a clear sky. The word "Questions?" is written in a large, white, sans-serif font across the center of the image.

Questions?





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