CNS consolidated nuclear security, llc
PANTEX PLANT | Y-12 NATIONAL SECURITY COMPLEX

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 ≈ 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
World War II Ends

Wednesday, August 14, 1945

PEACE! IT'S OVER

WASHINGTON, Aug. 14. — (AP) — Japan surrendered unconditionally tonight. History’s most destructive war is over except for formalities.

President Truman released the stirring news at 7 p.m., Eastern Time.

Arrangements still must be completed for the signing of formal surrender terms. General Douglas MacArthur has been appointed Supreme Allied Commander to receive the surrender. Then V-J day will be proclaimed.

“Meantime,” the President announced, “the Allied armed forces have been ordered to suspend offensive action.” And while the world celebrated with unrestrained joy, he ordered a Japanese rearmament, 50,000 a month and forecast the return of government (which once had promised 5,000,000 to 5,500,000 soldiers to civil life within 12 or 18 months).

As the great news became known, hundreds of Washingtonians raced to the White House to join hundreds already massed around the grounds.

Mr. Truman, accompanied by his wife, walked out on the porch and stepped up to a hastily erected microphone. He waved and smiled. Then he spoke:

“Ladies and gentlemen, this is the great day. This is the day we have been looking for since December 7, 1941.

“This is the day when Fascism and police governments cease in the world.

“This is the day for the democracies.

“This is the day when we can start on our real task of implementation of free government in the world.

“We are faced with the greatest task we ever have been faced with. The emergency is as great as it was on December 7, 1941.

“It is going to take the help of all of us to do it. I know we are going to do it.”

For millions of Americans, for hundreds of millions of Allied people, his surrender announcement signified victory, peace and the eventual return loved ones from the war. To millions beneath stark skies, their sacrifices had paid.
August 15, 1945

PANTEX CLOSED
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

40  50  60  70  80  90
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

Diagram showing the lifecycle of weapons, including surveillance processes.

- **Assembly of New Units**
- **DOE Acceptance**
- **DoD Custody Stockpile Units**
- **DOE Factory Modification**
- **Rebuild Unit**
- **Disassembly & Inspection**
- **QA Disposal**
- **Component Disposition**

Processes include:
- **Accelerated Aging Evaluation**
- **Test Bed Assembly**
- **JTA Assembly**
- **High Explosive Testing**
- **DoD/DOE Flight Test**
- **Post Mortem**

Other losses include:
- **DoD Use in War**
- **Stockpile Confidence Test**
- **Other Unrecoverable Use**

Component disposition includes:
- **Processing for Scrap**
- **Design Agency**
- **DOE/DoD Vendor**

Retired units go through various stages including dismantled components, unusable parts, and reaccepted DA parts.

Diagram details include:
- **High Explosive Testing**
- **Test Bed**
- **Assembly**
- **Evaluation**
- **Post Mortem**
- **Units for repair**
- **Units for field alt**
- **Units for conversion**
- **Test bed unit**
- **Test bed unit**
- **Eval components**
- **Evaluated components**
- **Evaluated components**
- **Evaluated components**
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
- 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

1967

1997
February 1, 2001 – New M&O Contractor

The Beginning of a New Era!

BWXT Pantex Assumes Management on Feb. 1, 2001
July 1, 2014 – New M&O contractor

- Project Management
- Construction
- Operations
- High Exposives
- High-Hazard Operations
- Security
- Safeguarding Special Nuclear Material

- Transformation
- Cost Savings

- Operations
- Information Technology
- Supply Chain Management

Booz | Allen | Hamilton
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
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?