



Pantex, LLC

A VPP Star Site

• p.o. box 30020 • amarillo, tx 79120

• phone 806-477-3000 • www.pantex.com

SEP 20 2012

Mr. Mark A. Padilla
Assistant Manager for
Programs & Projects
U.S. Department of Energy
NNSA Production Office - Pantex
P.O. Box 30030
Amarillo, TX 79120-0030

Subject: Pantex Plant FY2013 Twenty-Five Year Site Plan (TYSP)

Dear Mr. Padilla:

This purpose of this letter is to transmit the final subject plan. Please note that the subject document dated July 9, 2012, has incorporated the administrative changes requested by Ann Walls, Office of Infrastructure and Capital Planning (NA-161). The document has been submitted electronically and approved for public release.

If you have any questions, please contact me at extension 5616 or Mike Law at extension 3329.

Respectfully,

A handwritten signature in black ink that reads 'Michael Sims'.

Michael Sims
Director, Program Management
RTBF Programs

Enclosures: As stated

cc w/att: M. Law, 12-5H
D. Gray, 15-5H

TWENTY-FIVE YEAR

SITE PLAN

FY2013 – FY2037

July 9, 2012

PanTEX

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FY2013 – FY2037
Twenty-Five Year Site Plan

Approved by:

A handwritten signature in black ink, appearing to read "John D. Woolery", written over a horizontal line.

John D. Woolery
General Manager
B&W Pantex

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for Steven C. Erhart
Manager
NNSA Production Office
U.S. Department of Energy

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Section 1-Executive Summary

The Pantex Twenty-Five Year Site Plan (TYSP) is aligned with the 2012 Stockpile Stewardship and Management Plan (SSMP), 2010 Nuclear Posture Review (NPR), and the Complex Transformation Supplemental Programmatic Environmental Impact Statement (SPEIS) Record of Decision (RoD). As noted in the SSMP, key elements of the nuclear weapon infrastructure established during the Cold War are now 50-60 years old and are exceeding their original design lifetimes. The infrastructure must be recapitalized to be made more efficient, correctly-sized, and able to execute life extension activities, dismantlement of surplus weapons, surplus fissile materials management, explosives components manufacturing, and other nuclear security-related programs. The identified path forward, with the right investments and priorities, will serve to sustain the physical infrastructure and capabilities needed for the long-term.

Accomplishments

Pantex worked diligently to successfully overcome a variety of challenges. These challenges involved technical issues, receipt of components that fell short of their scheduled lead times, and multiple weather events that impacted critical production facilities and operations. Attention to problem resolution and commitment to aggressive recovery schedules resulted in completion of 107% of planned weapon deliverables through April 2012, including exceeding the W76-1 Life Extension Program (LEP) baseline with 117% of the YTD planned deliverables. Pantex also completed process prove-in activities for the new machining process that will be used on the W-80 surveillance program.

In support of the President's commitment for nuclear stockpile stewardship, Pantex achieved a major accomplishment with the early completion of the B53 Dismantlement. This success occurred as a result of the dedication and teamwork shared among

Pantex and other Nuclear Security Enterprise (NSE) sites.

Pantex was commended by the National Nuclear Security Administration (NNSA) for the B53 team's commitment, strategic focus, and ability to accelerate the salvage of national asset parts which proved beneficial to non-proliferation and counter-terrorism efforts.

Pantex completed the modification of a shipping container (H1700) for use as handling gear for Limited Life Component Exchanges (LLCEs) between LANL, NNSA, and DoD. These activities were executed while sustaining superior safety and security performance that continues to be among the best in the Enterprise.

Pantex developed the first-ever comprehensive barrier analysis process that strengthens operational reliability through comprehensive system mapping and barrier analysis and implemented the multi-year High Reliability Organization (HRO) Implementation Plan.

Pantex completed proof-of-concept tooling and successfully pressed two sets of Universal Hemispheres using the Dual Stack Pressing method. The process is on the path to full production implementation prior to the end of the fiscal year.

Pantex received the prestigious 2011 Dwight D. Eisenhower Award for excellence which recognizes large prime contractors that have excelled in their utilization of small businesses as suppliers and subcontractors.

Pantex continued its drive to enhance operational safety performance and maintain its position as a "best-in-class" safety leader within the NSE. Employees demonstrated their strong safety culture by setting an all-time record low for Total Recordable Case (TRC) rate at 0.33 in Fiscal Year (FY) 2011 and 0.27 for the first 8 months of FY12.

The High Explosive Pressing Facility (HEPF) project is under construction and is instrumental in sustaining High Explosives

(HE) component manufacturing essential for stockpile stewardship mission requirements.

Pantex submitted the HE Science, Technology, & Engineering project Mission Need documentation and received Critical Decision (CD)-0, approval in November 2011. This project is another key piece of the Pantex HE Center of Excellence (CoE) infrastructure modernization plan.

Pantex executed an effective reimbursable Work for Others (WFO) program fully supporting NSE HE initiatives and increasing FY11 total WFO Program value by 7% over FY10.

These Pantex accomplishments were the result of the support received from the NNSA Production Office (NPO) and the Plant's shared philosophy of, "*One Plant, One Mission, One Team-Different Roles, Same Goals*" and our partners at the national laboratories and other Production Sites working together under the theme "*One NNSA, working together*".

Pantex-Current State

The Pantex Plant mission includes: manufacture of specialty explosives, fabrication and testing of HE components; assembly, disassembly, maintenance, and surveillance of nuclear weapons and weapon components in the stockpile; dismantlement of retired stockpile nuclear weapons; sanitizing and disposing of components from dismantled weapons; interim staging and storage of nuclear components from dismantled weapons; pit requalification; pit surveillance; and pit packaging. Activities are directed through the Production and Planning Directive (P&PD), Program Control Document (PCD), and the Development and Production (D&P) Manual. Pantex supports Stockpile Systems by performing disassembly, inspection and rebuild of weapon evaluation cycle units, assembly of Joint Test Assemblies (JTAs) and post mortem analysis, assembly, disassembly, and analysis of testbed units, Limited Life Component Exchange (LLCE), programmatic alterations (usually defined as

Alts or Mods), weapon repairs, weapon and component radiography and non-destructive evaluation, HE testing and explosive component evaluation, pit and non-nuclear evaluations, electrical and mechanical tests, and surveillance/evaluation testing in support of Quality Evaluation Reports (QERs). Babcock & Wilcox Technical Services Pantex, LLC (B&W Pantex) activities ultimately support the core mission of nuclear weapons stockpile stewardship.

Pantex-Future State

This TYSP defines an overall path for modernizing the NNSA Pantex Plant over the 10 and 25 year planning horizon. Pantex supports NNSA's long-term commitment to providing the nation a modern infrastructure ready to accomplish the NSE mission. This plan summarizes key infrastructure necessary to implement the strategies delineated in the guiding documents noted above and the P&PD and PCD.

The future end state includes:

The HE CoE is managed and operated in a manner consistent with NNSA and other national needs. Modern infrastructure maximizes productivity while minimizing operating costs. Projected HE production demands are continually assessed and addressed while maintaining essential capabilities in a continuous state of readiness to meet existing needs. Mature productivity modeling ensure available capacities always satisfy manufacturing requirements.

Category I/II Special Nuclear Material (SNM) storage, as well as weapon staging, is consolidated and adjoined with the weapon assembly area thus achieving more modern, efficient, secure, and effective operations at a lower overall cost.

Comprehensive non-destructive diagnostics for weapon and weapon components evaluation, as well as reacceptance and refurbishment, are mature and responsive thus minimizing overall Enterprise costs and more effectively supporting increased surveillance demands.

SNM component environmental testing capabilities (relocated from Lawrence Livermore National Laboratory [LLNL] as directed by the Complex Transformation SPEIS) are fully functional and competently staffed to meet corresponding surveillance and LEP requirements.

Pantex serves as an integrated hub for the Production Planning & Scheduling system which coordinates Enterprise-wide planning, provisioning, and inventory management. Pantex would also serve as an integrated Container Logistics Center to effectively direct NSE Type B container packing, shipping, and related stewardship activities. This hub thus optimizes application of critical NSE resources, enhancing Enterprise productivity and minimizing operating costs.

Mature renewable energy systems take advantage of the geographical attributes and incorporation of facility sustainability strategies that have institutionalized responsible, enduring Plant environmental and energy management policies that contribute to long-term viability.

The safety and environmental compliance endeavors have the established maturity and external oversight confidence and status to maintain the NSE benchmark.

Facility reutilization strategies have consolidated function/operations in a manner that sustains a modern infrastructure while minimizing costs and operating footprint.

Management Concerns/Gaps

In support of NNSA, B&W Pantex has identified facility and infrastructure gaps that require resolution to ensure implementation of NNSA’s Strategic Plan. The gaps will continue to be refined, communicated, and collectively resolved to support continued progress, and ultimately, the transformation of Pantex.

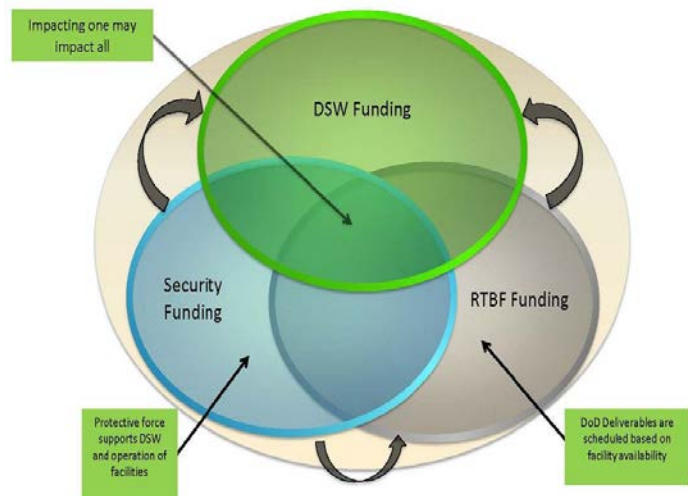
Integrated Funding to Sustain Peak Operations

Integrated funding of Directed Stockpile Work (DSW), Readiness in Technical Base

and Facilities (RTBF) and Safeguards & Security (S&S) is needed to accomplish the overall mission-related work scope.

The current NA-122 Federal Program Managers’ DSW targets for FY13 provide adequate funding to sustain operations; however, targets for FY14-FY18 are not adequate to accomplish the overall mission-related work scope. Additionally, Campaigns has no funding identified in FY14-FY18 to support projects critical to the B61 and other LEPs.

All Major Funding Sources At Pantex Are Closely Integrated



Funding profiles for Pantex show the Operations of Facilities budget to be adequate to support minimum operations in FY13-FY16. It does not fully maintain operations or arrest the growth of Deferred Maintenance (DM).

Mission Operations

Based on FY12 funding, B&W Pantex is proceeding in accordance with the workload as defined by NA-12. Future workload projections suggest enhanced testing and corresponding support activities will be necessary to satisfy basic stockpile stewardship and life extension program activities. Depending on requirements for each program, this would include increased non-destructive and destructive evaluation, explosive component manufacturing, and pit

requalification/reuse processes, as well as Canned Sub Assembly (CSA) surveillance. The increase in surveillance work will be addressed through the construction of a new Weapon Surveillance Facility, existing facility modifications, and the installation and qualification of essential diagnostic and support equipment.

High Explosives Center of Excellence

The cornerstones of the HE CoE are the HE Pressing, HE Science, Technology & Engineering (ST&E), HE Packaging and Staging (P&S), HE Formulation, Inert Machining, and the HE Component Fabrication and Qualification facilities. These facilities are used to support elements of the explosives mission including research and development. As noted earlier, HEPF construction continues. The HE P&S and the HE ST&E facilities were supported by the NNSA Construction Working Group (CWG) and CD-0 documents were prepared and submitted for approval. The HE ST&E CD-0 was approved in November 2011 and the HE P&S CD-0 approval is pending. The remaining facilities will require continued Headquarters’ sponsorship to fully complete the transformation to a modern HE CoE capable of reliably producing and performing surveillance activities in support of the Stockpile Stewardship Program (SSP).

Facilities and Infrastructure Sustainment/Modernization

The Capability Based Facilities and Infrastructure (CBFI) Program and the Corporate Physical Infrastructure Business Plan (CPIBP) initiative identified the anticipated near-term, intermediate, and long-term needs at Pantex to sustain and recapitalize the infrastructure required to support the NNSA mission. The common theme of these two initiatives is that the infrastructure requires sustainment and recapitalization of the capabilities. Infrastructure includes real property, installed equipment, and related real property that is supporting multiple program

missions at a multi-program site. Of concern are the systems and equipment that are reaching the end of their useful life or the manufacturer no longer supports. The “End-of-Life” table below lists a few of the systems and equipment that will require replacement over the planning period to support the Pantex mission.

Commercial application of technology is accelerating the need for “technical obsolescence” replacement. The lack of availability of replacement parts and supported software is decreasing system maintainability and reliability. As examples, manufacturers of the Ultraviolet (UV) Flame Detection System, the Radiation Alarm Monitoring (RAM) equipment, and the Lightning Location and Protection Warning System have notified Pantex that the systems are or soon will be no longer supported.

Systems at “End of Life” or Technologically Obsolete
Flame Detection System
High Pressure Fire Lead-Ins
Radiation Alarm Monitoring System
Building Systems (HVAC/Chillers/Electrical)
Fire Alarm Control Panels
Emergency Vehicles
Lightning Location and Protection System
Boiler Controls
Blast Door Interlocks
Enhanced Thermal Monitoring
Radiation Dosimetry Monitoring
On-site Transportation Trailers
Water Distribution System
Sewer Collection System
Process equipment: LINACS/Manipulators Vacuum Chambers Leak Check Manifolds Computer systems MRP II-(currently being replaced by the Operations Systems Development & Integration Project) HE Synthesis Controllers

Pantex has met mission deliverables with an aging infrastructure; however, risks are increasing due to failing systems and constrained and inconsistent budgets limiting recapitalization and modernization initiatives. The FYNSP is being reviewed to assess the ability to support “end of life” and technical obsolescence replacement of essential systems and infrastructure.

Material Staging Facility

A new underground facility will provide the capability and capacity for safe and efficient staging of weapons and weapon components while enhancing the site’s security posture at a reduced infrastructure cost. The facility supports the consolidation of the Pantex site and reduces the future recapitalization mortgage related to Zone 4 West and the associated Perimeter Intrusion Detection and Assessment System (PIDAS) replacements. Pantex representatives were key members of a team assembled to study potential options for deactivating Zone 4 West as a pit and weapon staging area. The outcome of the study recommended construction of a more secure, efficient facility to replace Zone 4



West. As a result, NNSA requested submission of CD-0 documentation to resume the facility acquisition process. Pantex prepared and submitted the Material Staging Facility Mission Need. As this project is likely to be funded by multi-program assets, corresponding supporting sponsors are required at NNSA.

Classified Material Disposition

There are approximately 319,200 “scrap” components stored at Pantex and of these

approximately 46,000 are classified. The most cost effective disposition of classified nuclear weapon components with radiologic concerns is shipment to the Nevada National Security Site (NNSS). This approach aids in overcoming severely limited available storage capacity for radiological items at Pantex. Classified weapon components disposition with radiologic concerns for which sanitization-disposition paths can be identified and developed (on-site or off-site) represents considerable additional cost that is not currently included in Pantex funding allocations or baseline requests. B&W Pantex has identified potential short-term (FY13-14) actions necessary to address the potential for storage capacity and production schedule impacts that involve both on-site and outsourced disposition. At present, outsourced disposition actions will be funded on a case-by-case basis.

A Note about the FY13 TYSP

The contents of the new TYSP has been revised to reflect the needs of the NSE and now provides a condensed “snapshot” of the current state, near term and long-term projections for the mission and the infrastructure required to sustain the capability. The TYSP contains strategic planning associated with the Program of Record.



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Section 2-Site Overview and Snapshot

Location: Amarillo, Texas

Type: Multi-Program Site

Web site: <http://www.pantex.com>

Contract Operator: B&W Pantex, LLC

Responsible Field Office: NNSA
Production Office

Site Manager: S. Erhart

Site Overview

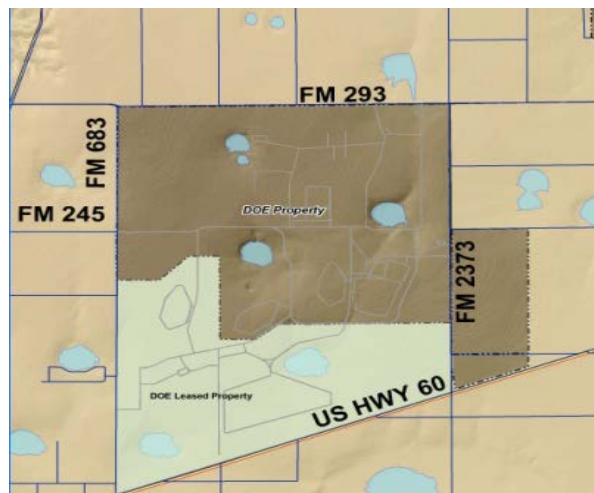
The Pantex Plant is operated by the Management and Operating (M&O) contractor, B&W Pantex under the direction of NNSA Production Office (NPO).

As denoted in Appendix C of this Site Plan, Pantex sustains core capabilities in HE production, development, synthesis, formulation, pressing, machining, and analytical/ performance testing (C5); weapon assembly/disassembly (C7); category I/II SNM storage (C9); and the key infrastructure supporting these capabilities (C10). Additionally, Pantex is instrumental in providing capabilities for other mission/program requirements including surveillance of weapon components used for certifying weapons and in providing scientific, technical, engineering, and safety basis for HE, as well as surveillance and requalification capabilities for pits. These supporting capabilities are further defined in Appendix C - NNSA Core Capabilities.

The Pantex mission supports Stockpile

component evaluation, pit and non-nuclear evaluations, electrical and mechanical tests, and surveillance and evaluation testing in support of QERs. B&W Pantex activities ultimately support the core mission of nuclear weapons stockpile stewardship.

The Pantex Plant, located 17 miles northeast of Amarillo, Texas, resides on 11,606 acres owned by the Department of



FY11 Funding by Source:

FY2011 Total NNSA/DOE Funding: \$ 581.5M

FY2011 Total Non-NNSA Work: \$ 4.4M

FY2011 Total Site Operating Funding: \$ 585.9M

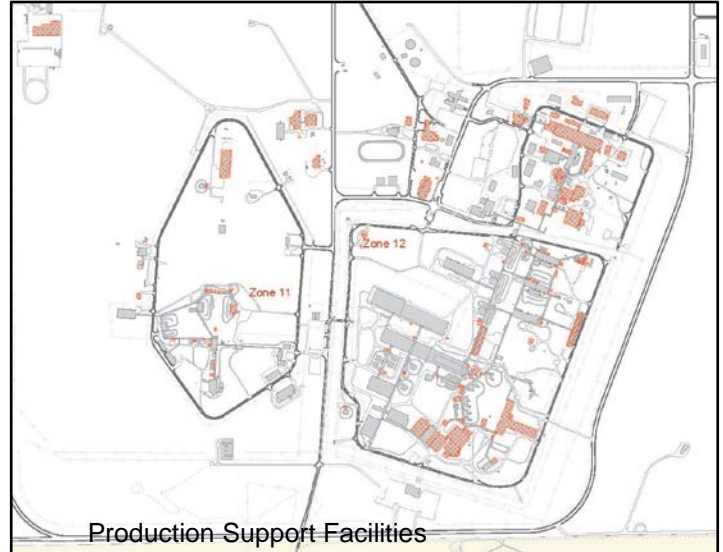
Systems by performing disassembly, inspection, and rebuild of weapon evaluation cycle units, assembly of JTAs and JTA post mortem analysis, assembly and disassembly of testbed units, LLCE, programmatic alterations (usually defined as Alts or Mods), weapon repairs, weapon and component radiography and non-destructive evaluation, HE testing and explosive

Energy (DOE) including the land acquired just east of Farm to Market (FM) 2373. Pantex operations near the southern boundary require DOE to lease approximately 5,800 acres of land between the Plant and U.S. Highway 60 from Texas Tech University (TTU), primarily for safety and security buffer areas. An additional 9 acres are leased for support functions. Approximately 2,500 acres of Pantex Plant proper are used for industrial operations, the burning grounds, and firing sites. Some land not actively used for Plant operations is provided to TTU for agricultural purposes through a service agreement. Approximately 8,070 acres of agricultural land within the combined main plant area and the Pantex Lake property are managed

by TTU through a service agreement with DOE for farming and ranching use. The Pantex Ordnance Plant was originally authorized February 24, 1942, as a conventional munitions site to support World War II (WWII) and was operated by Certain-Teed Products Corporation. The plant consisted of 15 "Zones" and was supported by rail lines to each. The site was closed in 1946 after the end of the war. In 1951, the Atomic Energy Commission recaptured the Plant from Texas Technological College and refurbished some of the structures to support HE research and nuclear weapon assembly operations. The plant was managed and operated by Procter & Gamble from 1951 to 1955. Operating contractor changed in 1956 to Mason & Hanger - Silas Mason Co. Inc. Mason & Hanger continued to operate the plant until being purchased by Day & Zimmerman in 2000. Day & Zimmerman was replaced by the current contractor, Babcock & Wilcox Technical Services Pantex, LLC.

Pantex consists of approximately 623 buildings containing 3,122,542 square feet.

There are 52 enduring Mission Critical (MC) facilities, 388 Mission Dependent Not Critical (MDNC) facilities, and 183 Not Mission Dependent (NMD) facilities. Of the 388 MDNC facilities, there are 234 Production Support (PS) facilities directly sustaining the capabilities and mission



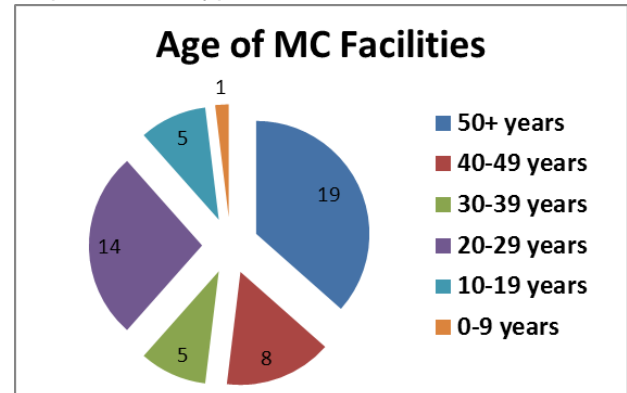
operations in the MC facilities. Examples of the PS facilities includes: weapon and component staging, explosive storage, MC equipment rooms and fan rooms that are not physically adjoined to the building, tooling, maintenance facilities, utility systems (including steam generation and distribution, compressed air, water, sewer, and electricity and natural gas distribution), generator facilities, guard headquarters, and alternate command post.

Over 52% of the MC and 54% of the MDNC Facilities are over 40 years old and will require some type of refurbishment or

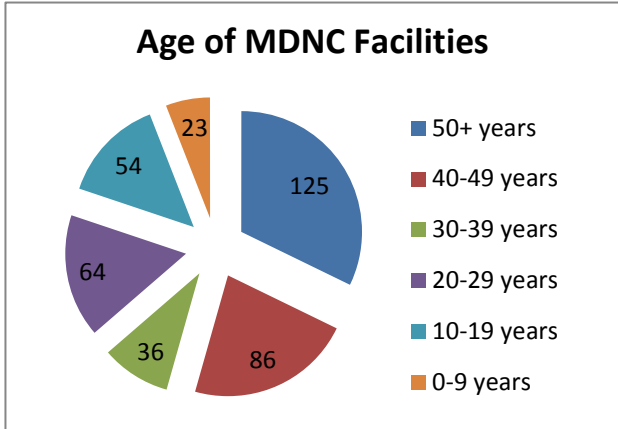
Real Property

- 17,415 Acres (Leased / Owned)
- 623 Buildings/Trailers:
- 3,000,363 gsf Active & Operational
- 35,983 gsf Non-Operational
- 86,196 gsf Leased
- Replacement Plant Value: \$ 4.17B
- Deferred Maintenance: \$ 317M
- Facility Condition Index:
 - MC: 2.4 %
 - MDNC: 11.3 %
- Asset Utilization Index (Overall): 98.0%

Age of MC Facilities



replacement in the planning horizon. The initial CPIBP, published March 2011, identified those anticipated recapitalization infrastructure needs over the next 30 years.

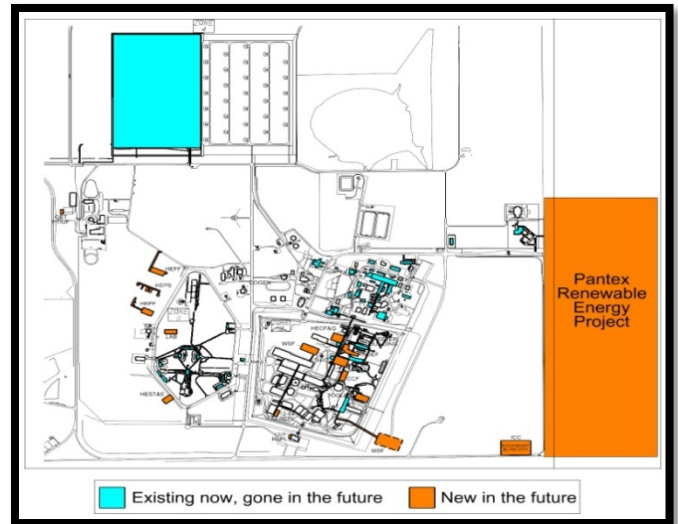


DOE/NNSA/NPO completed consultations with the Texas State Historic Preservation Office (SHPO) and the President’s Advisory Council in 2004, culminating in a final Programmatic Agreement and Cultural Resource Management Plan (PA/CRMP). This plan identifies a range of preservation activities for 173 eligible facilities including preservation *in-situ* of 10 mission-related buildings (Buildings 11-20, 12-17, 12-17A, 12-17B, 12-17E, 12-26, 12-33, 12-44 Cell 1, 12-60, and 12-64). Other buildings determined eligible for the Register can be Decontaminated and Demolished (D&D) when measures are developed to resolve any adverse effects to the property and agreed upon measures have been taken to preserve the historic significance of the property.

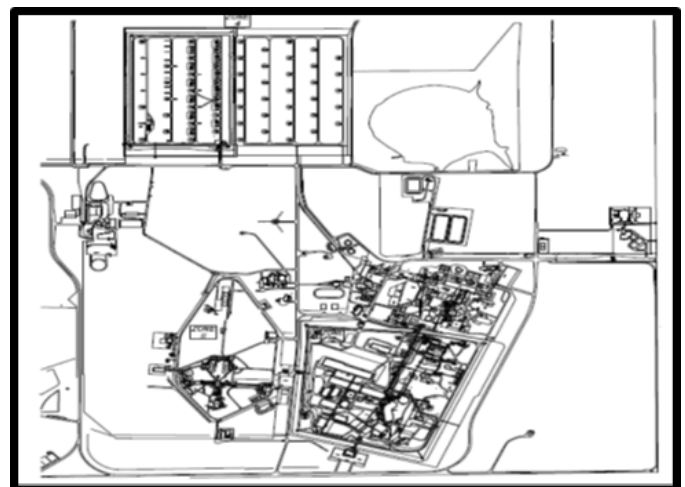


Future plans for Pantex include reinvestments to be smaller and more responsive to the country’s needs in accordance with the strategies delineated in the Complex Transformation SPEIS and the nation’s nuclear posture. Those initiatives include developing and refining the HE CoE, consolidating category I/II SNM, providing non-destructive testing evaluation, developing area attribute for renewal energy, and consolidating laboratory destructive surveillance operations.

Future



2011



Staffing

As of May 2012 approximately 3,573 people are employed at the Pantex Plant. The exact number varies weekly based on terminations and new hires. This population consists of NPO-Pantex, B&W Pantex, Office of Secure Transportation (OST), Sandia National Laboratory’s (SNL) Weapons Evaluation Testing Laboratory (WETL), and the Tri-Lab Project Office personnel. Numerous other organizations also have a presence at Pantex including the Defense Nuclear Facilities Safety Board (DNFSB), the State of Texas Division of Emergency Management, and subcontractors. Other major groups on site include technical subcontractors and construction personnel. The numbers of construction personnel increased with the award of the HEPF in May 2011. Both NPO and the B&W Pantex organizations are flat to minimize duplications and provide better communication channels both up and across the organizations.

At the time the development of this TYSP, the M&O contracts for Y-12 and Pantex were being combined and proposals evaluated. The NNSA Production Office (NPO) was established to oversee the combined contract for the two sites. Formulation of the NPO has been completed. The organizational chart on the next page represents the new NPO organization.

Pantex provides ongoing workforce planning to insure the needed skills are available as workload changes occur. This planning provides a map to workforce restructuring, realignment, staffing, and employee development. Pantex skill mix continues to adjust to the needs of mission work. Forecasts and plans are developed based on the NNSA weapons workload for

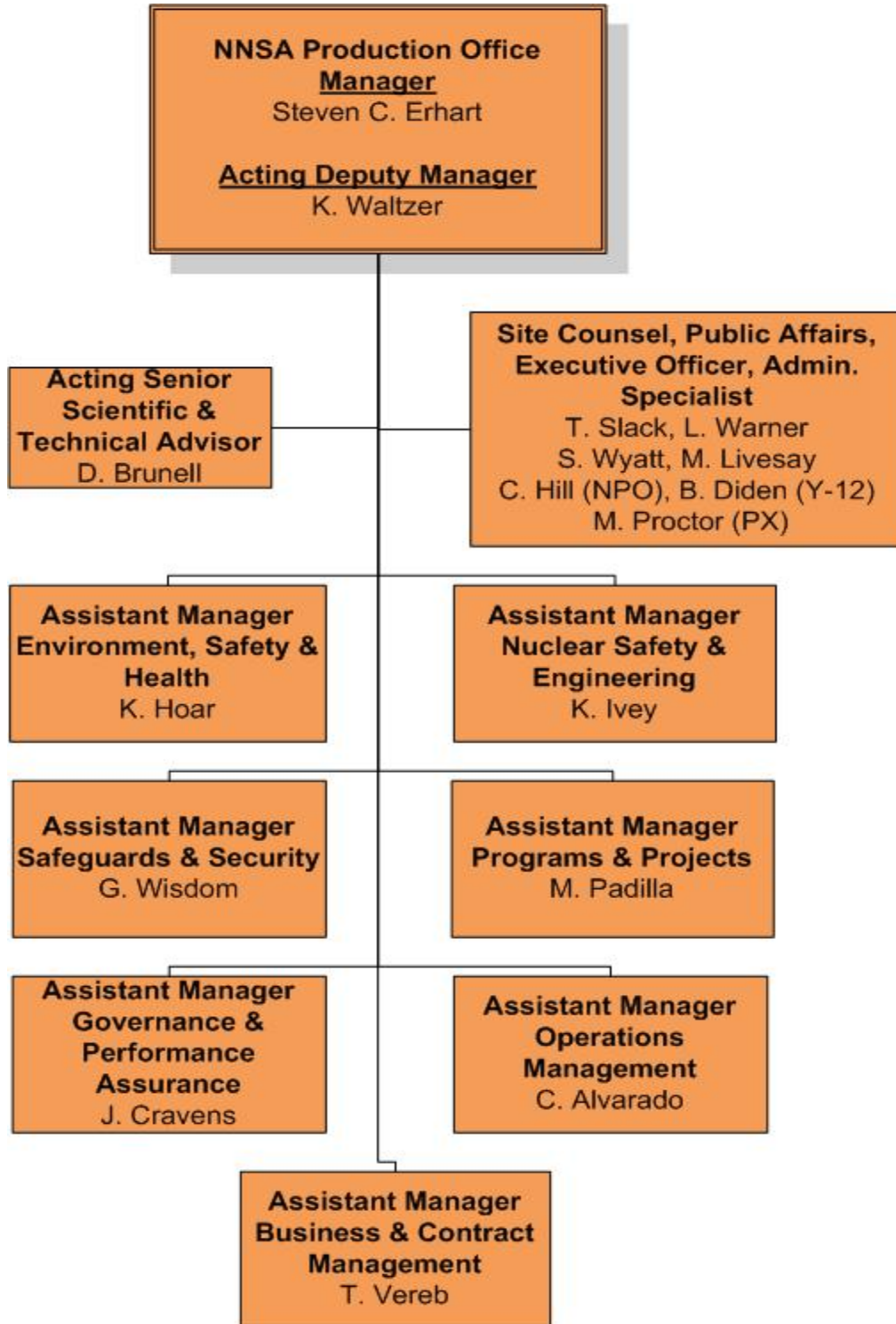
FY13 to FY38 provided by the P&PD and PCDs. Essential/Critical skills staffing requirements for FY12-22 have been identified at 1,425 with a staffing focus on

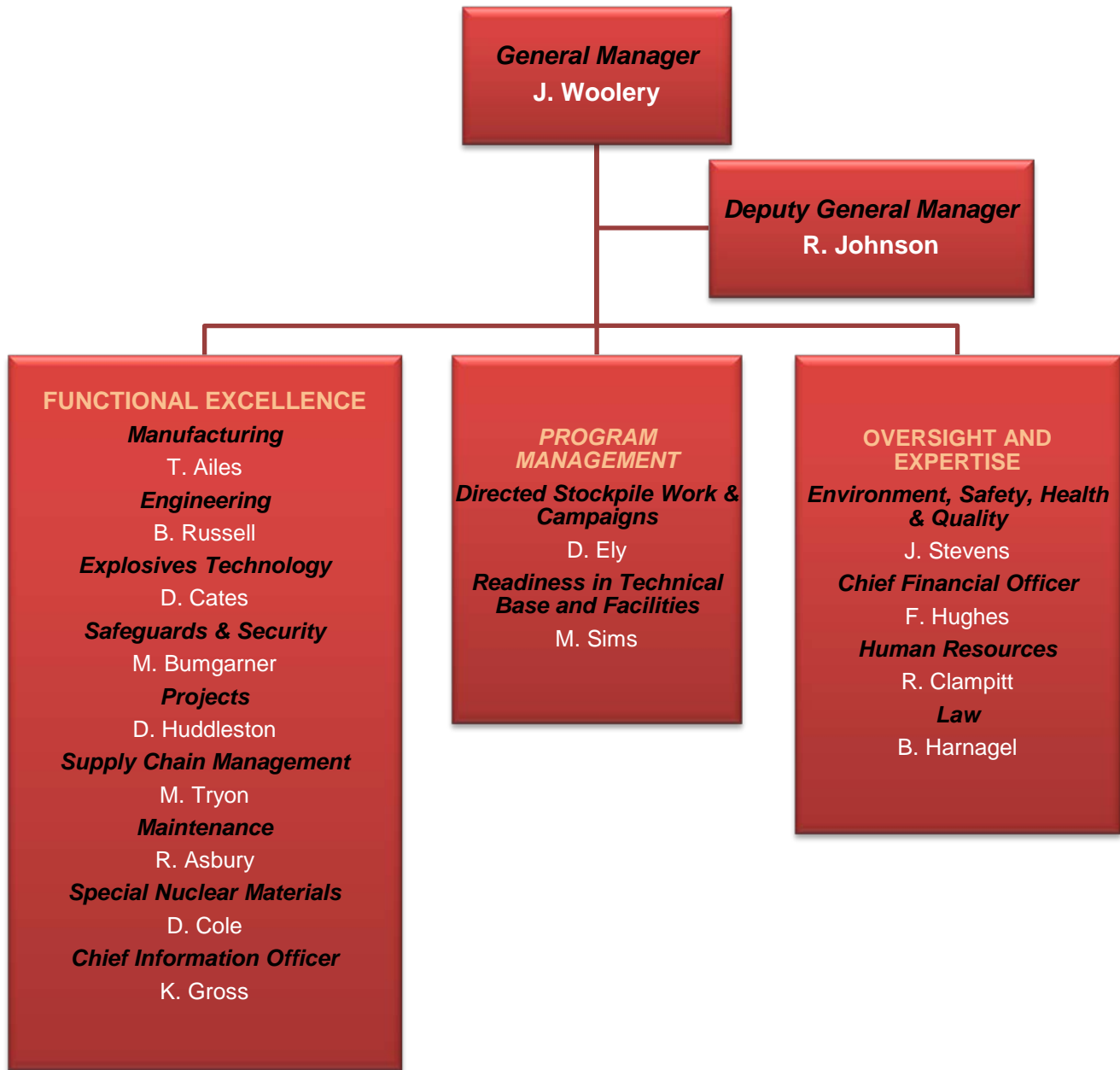
Organization (May 2012)	Number of Employees
B&W Pantex	3326
DOE/NPO-Pantex	76
OST	140
SNL	19
Tri-Labs	12
Subtotal	3573
Other (excludes construction personnel)	255
Construction Personnel	494
Total	4322

engineers and technicians. Pantex continues to partner with regional universities to provide a pipeline for the critical skill needs for future missions. In addition, compensation and benefits are monitored to stay competitive for talent in the lean technical market. Attrition has increased from 3% in FY10 to 5% in FY12 due to market/economy improvements easing concerns for those ready to retire.

Essential/Critical Skills (May 2012)	Number of Employees
Crafts	51
Engineers	314
Laborers	6
Managers	226
Professionals	65
Radiography-Operators	325
Scientists	120
Technicians	306
Total	1413

Organizations





Section 3-Assumptions

This document is based on various assumptions concerning projected budget targets, projected workload, regulatory environment, available facilities, technology, productivity, the work environment, and NNSA's transformation. In some cases, operating basis assumptions are interdependent, and one may affect another.

Noteworthy assumptions include:

- Prioritization will be driven by mission need and ability to continue safe and secure operations in support of the P&PD and PCD
- Budget data for OST, DSW, Campaigns, RTBF, and S&S are based on the FY13 President's Budget Request. FY14-17 targets are based on planning numbers provided in March 2011 for OST, DSW & Campaigns, and RTBF. Safeguards & Security are based on planning numbers provided in January 2012
- The HEPF, as well as other facilities, are key components of the current and future LEPs. These facilities have been submitted for NNSA support through the CWG process and captured in the Nominal Schedule of Current and Proposed Line Item Construction Projects
- As the Facilities and Infrastructure Recapitalization Program (FIRP) program terminates, any remaining unfunded projects will be included as project candidates for the CBFi program and coordinated with the Site for priorities and funding requirements
- CBFi is assumed to fund Bay/Cell Upgrades per year (~\$36M) for Flame Detection, Radiation Alarm Monitoring System (RAMS) and Lead-in

replacement starting in FY13. The continual funding of these upgrades will generate the needed spare parts to support the remaining systems until all the areas are upgraded

- Land use is expected to remain constant
- Pantex Plant's ability to meet the goals set forth by Executive Order for Energy Sustainability resides in the implementation of the Pantex Renewable Energy Project (PREP) and execution of projects identified in the Pantex Site Sustainability Plan
- Maintenance and some recapitalization will continue to be required in facilities until consolidation projects are complete, operational, and the old facilities demolished
- For major Line Item (LI) construction, facility demolition usually occurs after operations are started. In some cases, demolition of facilities occurs many years after operations are started
- Detailed planning data is provided by Facility Information Management System (FIMS)

Planning for the Enterprise of the future and the modernization that will occur over the next several decades will require constant revision to match changing missions, priorities, funding, and implementation impacts at the NSE sites.



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Section 4-Changes from Prior Year TYSP

Major changes from the FY12 TYSP include:

- Guidance has been changed from a Ten Year Site Plan to a Twenty-Five Year Site Plan
- Section 7 Planned Projects and Cost was removed from the TYSP
- Appendix D has been changed from NNSA workload to NNSA Special Interest Activities
- Appendix E has been changed from Pantex Maps to RTBF Key Milestones
- Appendix F has been changed from Pantex Funding Targets to Acronyms formerly Appendix N
- The old Appendix G has been included in Section 2
- The old Appendix H and I have been included in Section 6
- Attachments A, E, F, and J have been removed from the TYSP The CBF1
- Program mission is to support capability with the recapitalization, modernization, and refurbishment of facilities and infrastructure, including utility systems; disposition of non-process contaminated facilities excess to the mission; and implementation of energy sustainability

projects. The Program consists of three elements:

- Recapitalization/Life Extension for Enduring Facilities
- Disposition
- Energy Sustainability

CBF1 projects include the planning of a series of facility upgrades to sustain the facilities for planned mission workload. These projects include: modernization of production facilities by replacing “end of life” systems (flame detection, RAM, fire protection lead-in, etc.) and recapitalization projects executed over several years to address Pantex needs.

Project completions in FY12 include:

- Electrostatic Discharge (ESD) Footwear Checker Installation
- 12-6 and 12-42A Heating Ventilating & Air Conditioning (HVAC) Replacements
- Building 12-21 Chiller Replacement and Piping Upgrade
- Caltrop Barrier Gate Installation
- Hydro Log Installation
- Demolition of 11-10/11-30 and 12-2B
- Building 4-148 Modifications
- Utility Line Erosion Repair and Mitigation



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Section 5-Future Vision and Core Capabilities

Future Vision/Core Capability 5-High Explosive Production

Core Capability

Pantex HE synthesis operations are performed in an enduring facility. Pantex is currently the only national supplier of War Reserve (WR) quality Hexanitrostilbene (HNS), booster and detonator grade High Melting Explosive (HMX), Pentaerythritol Tetranitrate (PETN), and booster grade ultra-fine Triamino Trinitrobenzene (TATB), Research Department Explosive (RDX), and LX-07 explosives.

Pantex currently formulates up to 200 lb. batches and must blend the batches to reduce inconsistencies and variations. Quality testing is performed on each of the smaller batches. Pantex is the only producer of war reserve qualified extrudable HE XTX 8003 and 8004, LX-16, LX-07, and Mock 900-24 for test flights. Pantex is also backup for Holston for Plastic Bonded Explosive (PBX)-9501.

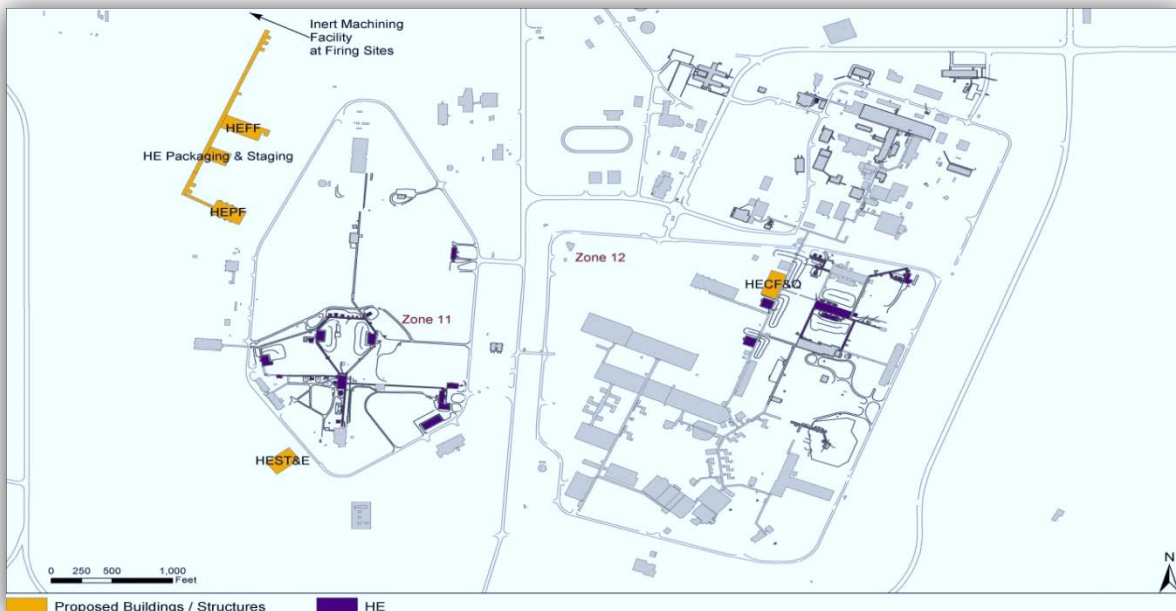
Pressing operations are being maintained in the current WWII facility until the HEPF is completed in FY16.

Machining operations are performed in an enduring facility. Pantex is the only producer of machine finished parts for nuclear weapons production. Unique machining operations include producing HE surveillance samples to support core and enhanced surveillance, performing required safety inspections on as-pressed HE parts, producing specially-fabricated HE parts for NNSA Labs and other off-schedule customers, and sanitizing HE main charges resulting from weapon disassembly.

Main charge explosive materials recovered from dismantled weapons are either made available to Department of Defense (DoD) (after sanitization) for use in conventional munitions, transformed into commercially viable products, or destroyed by suitable means on-site.

Key projects supporting the HE CoE production efforts include:

- HE Pressing Facility
- HE Science, Technology, and Engineering
- HE Packaging and Staging



- HE Inert Machining
- HE Formulation
- Zone 11 HPFL Replacement
- HE Component Fabrication and Qualification Facility

These same projects support the HE R&D efforts. The HEPF is under construction. The HE ST&E CD-1 documentation is being finalized and should result in design efforts being started within the next year.

Future Vision

The RoD for the Complex Transformation SPEIS selected Pantex Plant as the CoE for HE production. The Pantex HE production mission is required to support nuclear weapons stockpile stewardship while continuously improving levels of safety and productivity. Major activities include:

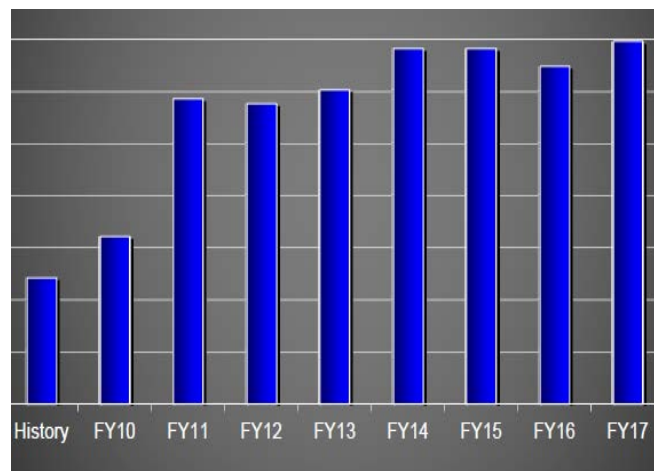
- Manufacturing special stockpile explosives
- Fabricating explosive components
- Performing comprehensive destructive/non-destructive testing of explosive products
- Providing explosives asset stewardship

When the HE CoE is fully implemented, Pantex will have the sustainable infrastructure in place to support the HE need for the foreseeable future. Production will be performed in modern sustainable buildings with efficient and effective processes to minimize costs and maximize operability. Explosive formulation could be performed in large lots to minimize variations and testing. Pressing could be done with near net-shape precision and machining will be minimal.

The Physics Laboratories will have validated aging models developed through the accumulation of surveillance and testing data that will allow historical materials to be minimized reducing the footprint currently required for long-term storage. Pantex will continuously manage its explosive inventory to ensure sufficient storage space to meet future stockpile stewardship requirements.

*Tactical Horizon (FY13-FY22)
Capability/Needs to Achieve NNSA Strategic Goals and Objectives*

- Commence and sustain two-shift operations for main charge fabrication (pressing and machining) to satisfy W76-1 LEP schedule demands
- Planning is also underway with regard to the B61 LEP scheduled for FPU at Pantex in FY19. In preparation for this LEP, the site must establish appropriate Insensitive High Explosives (IHE) main charge fabrication processes. This effort will require some degree of process development and formalized implementation at the site
- Establish and implement appropriate IHE charge fabrication process for B61 LEP scheduled for FPU at Pantex in FY19
- Modernize extrudable HE loading and testing capability to meet B61 LEP requirements



Relative HE Pressing Workload

- Implement tracking and inventory system to enhance productivity and to prevent potential HE over-load and incompatibility issues in operations
- Implement 900 17/LM Mock HE capability for production setups and JTA applications
- Develop and implement virtual training methods

- Implement Design to Manufacture (D2M) explosives fabrication and acceptance processes
- Deploy Non-Destructive Density determination (ND3) production system for main charge HE hemispheres inspections pending completion of prove-in and DA approval
- Actively pursue replacement of experienced personnel lost to retirement with talented scientists and engineers willing to commit to the NSE. Invest in employees' future through education and training
- Modernize HE pressing and machining capabilities to maintain WR production levels and support national laboratory demand for the stockpile stewardship, LEP, and national hydrodynamic programs
- Capitalize on existing Pantex Plant HE core competencies to expand and improve the HE mission work for NNSA, other government agencies, and non-governmental organizations
- Establish project management discipline for explosives operations to ensure production, project, and development deliverables are provided on time, safely, securely, and with a high degree of quality

- Complete the HE CoE transformation with the construction and startup of the HE ST&E, HE P&S facilities

***Strategic Horizon (FY23-FY37)
Capability/Needs to Achieve NNSA Strategic
Goals and Objectives***

- Sustain and recapitalize the infrastructure to support production commitments related to the W78 LEP
- Align resources and infrastructure required to support the FPU of the W88 LEP
- Sustain and recapitalize the infrastructure to support production commitments related to the W88 LEP
- Sustain and recapitalize the infrastructure to support production commitments related to the W80 LEP
- Sustain and recapitalize the infrastructure required to support the FPU of the W87 LEP
- Launch environmentally contained testing and disposition of explosives
- Complete the HE CoE transformation with the construction and startup of the Inert Machining, HE Formulation, and HE Component Fabrication and Qualification facilities



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Future Vision/Core Capability 5- High Explosives Research & Development (R&D)

Core Capability

Explosive production and associated development is concentrated within the elements of the programmatic explosives mission categories of synthesis, formulation, pressing, precision explosives machining and assembly, component fabrication and assembly, mechanical testing, chemical materials characterization, and performance testing. Much of this work supports production qualification, stockpile-related surveillance, or process improvement initiatives.

Future Vision

Pantex, as the HE CoE for explosives production for the NSE, ensures that essential mission capabilities are sustained, including the ability to support HE research and development initiatives by the national laboratories. From its roots of conducting significant explosives research and development activities primarily in concert with the national laboratories, to today, where HE development activities focus on manufacturing process improvements and HE safety. In the future, development and research information will be shared via secure media where simulations and actual test data are shared and validated and used to facilitate weapon improvements and maintain a high confidence in the nuclear stockpile. It is anticipated that consolidation of the HE functions will reduce the Plant footprint; however, the newer facilities will reduce maintenance and operating costs as well as substantially improve operating efficiencies.

Key projects needed to support HE production and realize the HE CoE vision include:

- HE Pressing Facility
- HE Science, Technology, and Engineering
- HE Packaging and Staging

- HE Inert Machining
- HE Formulation
- Zone 11 HPFL Replacement
- HE Component Fabrication and Qualification Facility

Tactical Horizon (FY13-FY22)

Capability/Needs to Achieve NNSA Strategic Goals and Objectives

- Capitalize on existing Pantex Plant HE core competencies to expand and improve the HE work for NNSA, other government agencies, and non-governmental organizations
- Integrate HE R&D work with hydro-testing, detonation systems, and surveillance of the legacy stockpile through the updating testing of diagnostics for chemical, physical, and performance testing
- Maintain the capability to functionally test programmatic HE systems for acceptance and surveillance activities
- Actively pursue replacement of experienced personnel lost to retirement with talented scientists and engineers willing to commit to the NSE. Invest in employees' future through education and training
- Build on WFO governmental and commercial opportunities to maintain the intellectual vitality of personnel and to exercise HE processes and stockpile stewardship by being the low-cost, high quality provider of materials and services
- Continue the HE CoE transformation with the construction and startup of the HE ST&E, and HE P&S facilities

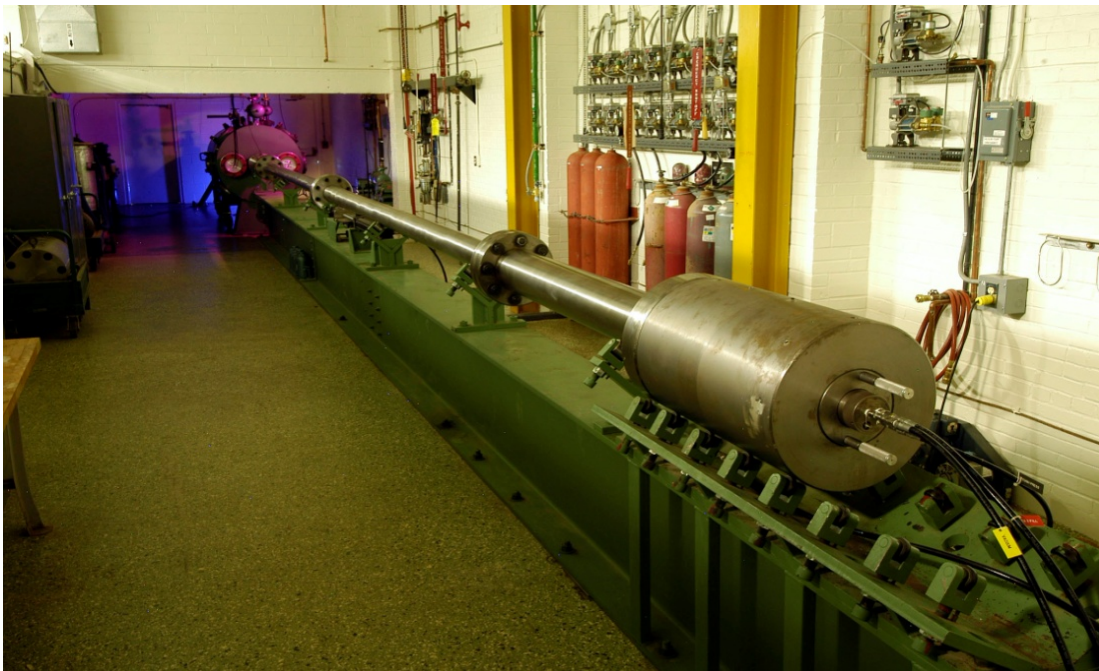
Strategic Horizon (FY23-FY37)

Capability/Needs to Achieve NNSA Strategic Goals and Objectives

- Develop and sustain the HE expertise necessary to support essential missions through a variety of programs. This expertise spans the range of synthesis, formulation, fabrication and production, surveillance, analysis, shock physics, materials characterization,

experimentation, modeling, and simulation

- Be the provider of choice to appropriate customers for HE material and related intellectual products through the effective leveraging of available resources as realized by overall reduction in product cycle time and reduced direct costs to the customer
 - Provide sufficient HE capacities and capabilities to efficiently support current and proposed NSE demands; thus, ensuring competency retention
 - Position the Pantex Plant to be the NSE preferred site for HE analysis and programmatic HE performance testing
 - Increase WFO opportunities, performance, contributions to the site budget by maintaining a presence and reputation as HE experts and partners, and to ensure continued support of critical HE mission work
 - Establish a responsive infrastructure and work processes that enable quick response to NNSA/DOE mission
- changes or new developments in the HE manufacturing business environment
 - Increase collaboration with Universities, Design Agencies (DA), NNSA plants, and the Atomic Weapon Enterprise (AWE) to leverage technical exchange and research opportunities
 - The HE CoE is managed and operated in a manner consistent with NNSA and other national needs. Modern infrastructure maximizes productivity, while minimizing operating costs. Projected HE production demands are continually assessed and addressed while maintaining essential capabilities in a continuous state of readiness to meet existing needs responsively. Mature productivity modeling ensures available capacities always satisfy manufacturing requirements
 - Complete the HE CoE transformation with the construction and startup of the Inert Machining, HE Formulation, HE Component Fabrication and Qualification facilities



Future Vision/Core Capability 7- Weapons Assembly/Disassembly

Core Capabilities

Under the Complex Transformation SPEIS, Pantex remains the Weapons Assembly/Disassembly CoE with the following capabilities:

- Performing stockpile surveillance, retrofitting, and repairing weapons in support of both LEPs and certification of weapon systems safety and reliability
- Requalify/refurbish pits for use in LEPs
- Dismantling weapons surplus to enduring stockpile needs
- Sanitizing and disposing of components from dismantled weapons

Future Vision

Recognizing that the nuclear weapons stockpile is aging beyond its original design life, the NNSA is undertaking new surveillance initiatives that increase the projected Pantex workload. This includes augmented sampling, increased testing, and deployment of new diagnostics to meet revised testing requirements. More diagnostic tests are being conducted on components than ever before. As the Enhanced Surveillance initiative establishes new capabilities and a more predictive approach to stockpile evaluation is applied, new testing techniques are incorporated into the Core Surveillance Program.

In addition, potential options to perform non-destructive surveillance on CSAs at Pantex are currently being considered within the NSE. In cases where CSA disassembly is not required, this approach will yield timely, less expensive, more logistically efficient data acquisition for stockpile certification purposes.

Tactical Horizon (FY13-FY22) Capability/Needs to Achieve NNSA Strategic Goals and Objectives

Planning is underway with regard to the B61 LEP scheduled for First Production Unit (FPU) at Pantex in FY19. In preparation for

this LEP, the site will be required to refurbish/requalify pits used during the primary assembly. Although the effort will be similar to that performed for the W76 LEP, some degree of process development and formalized process implementation will be required at the site.

Performing CSA reacceptance at Pantex remains an option for B61 and W78 LEPs based predominately on minimizing cost. When applying non-intrusive processes similar in nature to those used for W76-1 pit requalification, the option offers efficient component recovery and essentially eliminates inter-site transport of large quantities of CSAs during the term of the LEP.

As planning proceeds, the site stands ready to provide necessary cost and schedule estimates related to such activities upon request. The following mission-related challenges will be addressed over the next decade:

- Plan and secure resources and infrastructure required to support the FPU of the B61 LEP and sustain production schedule commitments



- Plan and apply pre-screening and refurbishment capabilities as necessary to support B-61 LEP requirements
- Plan and apply CSA reacceptance capabilities in support of the B61 LEP
- Sustain two-shift operations on plant Linear Accelerator (LINAC) systems to maintain existing surveillance schedule

- Dispose of backlogged legacy components resulting from dismantlement occurring 10 (or) more years earlier
- Support NNSA commitments to Congress for dismantling retired warheads
- Apply automated tracking and inventory systems as appropriate
- Plan and begin to apply diagnostics required to perform non-destructive CSA surveillance
- Plan, secure, and apply resources and capabilities required to support the FPU of the W78 LEP and prepare to sustain production schedule commitments
- Plan and apply pit pre-screening and refurbishment capabilities, as necessary, to support W78 LEP FPU requirements
- Plan and apply CSA reacceptance capabilities in support of the W78 LEP FPU
- Upgrade Vacuum Chambers to provide additional capacity and backup
- Complete the transformation and modernization with the construction and startup of the Non-destructive Evaluation Facility, Fire Protection Building Lead-ins, and Material Staging Facility LI projects.
- Implement the CBF1 program and execute the required infrastructure recapitalization, sustainment and demolition of projects
- Maintain, sustain, and recapitalize the infrastructure to support production commitments related to the W88 LEP
- Plan, secure, and apply resources and capabilities required to support the FPU of the W80 LEP
- Plan and apply pit pre-screening and refurbishment capabilities, as necessary, to support W80 LEP requirements
- Apply CSA reacceptance capabilities in support of the W80 LEP
- Maintain, sustain, and recapitalize the infrastructure to support production commitments related to the W80 LEP
- Maintain, sustain, and recapitalize the infrastructure required to support the FPU of the W87 LEP
- Complete the production modernization with the construction and startup of the Weapons Surveillance Facility and the Non-Destructive Evaluation Facility LI projects
- Continue CBF1 program execution by recapitalizing and sustaining projects

Strategic Horizon (FY23-FY37)

Capability/Needs to Achieve NNSA Strategic Goals and Objectives

- Maintain, sustain, and recapitalize the infrastructure to support production commitments related to the W78 LEP
- Plan and align resources and infrastructure required to support the FPU of the W88 LEP
- Plan and apply pit pre-screening and refurbishment capabilities, as necessary, to support W88 LEP requirements



Future Vision/Core Capability 7- Campaigns

Core Capability

The Campaigns and the Plant Directed Research, Development and Demonstration (PDRD&D) Program will develop and implement new capabilities for weapon production and surveillance.

Future Vision

Enhanced Surveillance continues to provide new or improved diagnostic techniques for detection and quantification of age-related degradation and other potential defects in the stockpile. Enhanced Surveillance works with DSW to develop and deploy new diagnostic tests that enable evaluations to be more sensitive to these concerns.

Implementation of many of the new diagnostic tools has not required new facilities; however, diagnostic tools such as neutron or high-energy x-ray imaging will require new facilities. A new Weapon Surveillance Facility (WSF) will provide the needed infrastructure for these new diagnostic tools.

The High Explosives & Weapon Operations (HEWO) Readiness Campaign is currently using carryover funds for FY12 and is not funded in the future. However, discussions are ongoing to identify funds to meet future process capability demands in support of current program LEP planning. HEWO is vital to Pantex for delivering these capabilities, as well as process improvements and for sustaining essential mission competencies that would otherwise become technologically obsolete. As a result of past HEWO sponsorship, capabilities that meet evolving stockpile demands, while substantially reducing production costs and delivery times within the Enterprise, have been planned and delivered in an integrated and cost-effective fashion.

PDRD remains an invaluable part of the plant's process improvement effort by continuously evaluating new manufacturing-related approaches. The PDRD Program

provides the feedstock for the Technology Maturation Process. With declining Campaign budgets, PDRD is essential to maintaining a minimal investment in technologies. Investments in technology will enable B&W Pantex to establish critical capabilities, which are key to performing more work within constrained budgets.

Tactical Horizon (FY13-FY22) Capability/Needs to Achieve NNSA Strategic Goals and Objectives

- Implement improved HE performance diagnostics
- Deploy Non Destructive Evaluation (NDE) diagnostics to obtain the relevant data on more samples without costly destructive tests pending completion of prove-in and DA approval
- Implement new and expanded capabilities for thermal performance, sensitivity, and mechanical properties testing of explosive materials and components
- Establish sustainable provisions for TATB and TATB-based insensitive explosives
- Implement enhancements to explosive component fabrication processes that ensure the enduring capability to support B61, W78, W88, and W80 LEP primary design requirements (i.e. Near net-shape pressing, E-fabrication, extrusion processes, etc.)
- Develop additional pit pre-screening and refurbishment capabilities to include pit tube replacement and shell over-cladding in support of B-61 LEP requirements
- Develop and implement prescreening and reacceptance processes for CSAs in support of the B61 LEP
- Develop and implement diagnostics required to perform non-destructive CSA surveillance
- Develop procedures utilizing a (Defense Programs Package (DPP)-1 container as a breached pit contingency that contains the component locally and

facilitates shipment to Los Alamos National Laboratory (LANL)

- Develop and implement sustainable manufacturing processes for specialty explosive and mock formulations
- Implement D2M explosives fabrication and acceptance processes
- Facilitate enterprise-wide interactive production planning and scheduling system
- Comprehensively implement automated tracking and inventory system
- Develop and implement comprehensive pit and explosives surveillance diagnostics
- Develop and implement additional pit pre-screening and refurbishment capabilities in support of W-78 LEP requirements based on NNSA decisions
- Develop and implement pre-screening and reacceptance processes for CSAs in support of the W78 LEP based on NNSA decisions
- Efficiently administer NSE Type B container logistics system
- Package and transport Radioisotopic Thermoelectric Generator (RTGs) off-site for surveillance and disposition
- Implement new test apparatus for qualification of materials used to mitigate insults to explosives
- Design and implement new gas gun firing mechanism

***Strategic Horizon (FY23-FY37)
Capability/Needs to Achieve NNSA Strategic Goals and Objectives***

- Implement paperless manufacturing, assembly, and acceptance processes
- Launch contained testing and disposition of explosives
- Apply remote sensor technology for weapon/component surveillance based on NNSA decisions
- Deliver virtual training methods site-wide to improve efficiencies and reduce costs
- Develop and implement additional pit pre-screening and refurbishment capabilities in support of W-88 LEP requirements based on NNSA decisions

- Develop and implement pre-screening and reacceptance processes for CSAs in support of the W88 LEP based on NNSA decisions
- Develop and implement additional pit pre-screening and refurbishment capabilities in support of W80 LEP requirements based on NNSA decisions
- Develop and implement pre-screening and reacceptance processes for CSAs in support of the W80 LEP based on NNSA decisions



Future Vision/Core Capability 9- Special Nuclear Material Accountability, Storage, Protection, Handling, and Disposition

Core Capability

This SNM program provides for receipt, storage, inventory, and surveillance of nuclear and non-nuclear material and weapon components from dismantled weapons and disposition of legacy components. Sub-elements funded at Pantex are defined as follows:

- Storage of SNM includes provisions for the directed storage of nuclear components at the site. Activities include planning, design, engineering, and start-up activities related to processing, packaging, and placing components in safe storage. Ancillary activities include thermal monitoring and periodic inventory of the population. In addition, out-year forecasts of nuclear component storage requirements at the site are provided to NNSA annually
- Pit Inspection/Surveillance including the inspection and various measurement activities associated with pits in storage. Activities include weight and leak testing, gas sampling, visual inspections, digital imaging, dimensional inspection, and radiography
- Disposition of Legacy Material including identification of legacy material, identification of currently available disposition processes, development of new disposition processes, and off-site shipment of material to ultimate disposition sites
- Continue to execute container surveillance programs (Type B and on-site storage containers)
- Maintain pit pre-screening and routine surveillance capabilities
- Provide environmental control and physical security for the pits

- Ensure pit storage samples meet safety and reliability requirements as specified in DA requirements documents
- Package and facilitate transport of components, as required, to LANL for material recovery



Future Vision

- Develop and implement process for DPP-1 container pit packaging for off-site shipment
- Execute container surveillance programs (Type B and on-site storage containers)
- Establish and Implement Type B container processes for packaging and shipping RTGs to accommodate surveillance and disposition activities
- Establish a Type B Container logistics depot to provide NSE-wide stewardship capabilities for nuclear shipping containers
- Establish required capability and capacity for dimensional inspection, laser gas sampling, and micro-focus computed tomography (CT) for pit surveillances
- Implement a Zone 12 Material Staging Facility to improve operational efficiencies and reduce PIDAS maintenance and recapitalization costs that are currently planned

Tactical Horizon (FY13-FY22)***Capability/Needs to Achieve NNSA Strategic Goals and Objectives***

- Implement SNM environmental testing capability at Pantex
- Provide environmental control and physical security for the pits
- Increase the storage capacity for pits in Zone 12 South through the construction of the Material Staging Facility
- Ensure pit storage samples meet safety and reliability requirements as specified in DA requirements documents
- Establish DPP-2 & DPP-3 packaging lines for inter-site transport of uranium components

- Package and facilitate transport of components, as required, to LANL for material recovery
- Modify facility as necessary to accept glove box for the B61 LEP pit refurbishment/re-qualification process(es)

Strategic Horizon (FY23-FY37)***Capability/Needs to Achieve NNSA Strategic Goals and Objectives***

- Provide environmental control and physical security for the pits
- Ensure pit storage samples meet safety and reliability requirements as specified in DA requirements document



Future Vision/Core Capability 9- Special Nuclear Material Accountability, Storage, Protection, Handling, and Disposition

Material Disposition (MD)

The Office of Fissile MD (NA-26) provides for the safe, secure, and environmentally sound storage of fissile materials, thermal monitoring, storage sampling surveillance, development of processes to utilize the new surplus pit shipping container (MD-2), special pit shipments, and the ultimate disposition of non-weapons grade unusable fissile materials declared surplus to national security needs.

Core Capability

Perform pit repackaging activities for surplus pit off-site shipment to the DA to support storage sample surveillance requirements and Advanced Recovery and Integrated Extraction System (ARIES) demonstrations, as directed per DOE authorization letters.

Monitor the thermal environments of pits in Zone 4 magazines and trailers and thermally characterize additional magazines for pits stored in the Sealed Insert (SI) containers. The project includes retrieval and reporting of thermal data, instrumentation of storage areas containing pits, and monitoring/characterization of storage facilities.

Inspect surplus pit storage samples, selected by the DA, to ensure they continue to meet safety and reliability requirements as specified in DA requirements.

Future Vision

Develop and implement process for MD-2 container pit packaging and off-site shipment. Implement enhanced pit thermal monitoring enhanced technology. Package and ship surplus pits to pre-stage items supporting pit disposition and conversion.

Tactical Horizon (FY13-FY22)

Capability/Needs to Achieve NNSA Strategic Goals and Objectives

- Develop and implement process for MD-2 container pit packaging. Package and ship surplus pits to pre-stage items supporting the Pit Disposition and Conversion Project
- Package surplus pits for off-site shipment to the DA to support storage sample surveillance requirements
- Perform pit repackaging activities for surplus pit off-site shipment supporting ARIES demonstrations, as directed per DOE authorization letters
- Implement enhanced thermal monitoring of pits in Zone 4 magazines and trailers and thermally characterize additional magazines for pits stored in the SI containers. The project includes retrieval and reporting of thermal data, instrumentation of storage areas containing pits, and monitoring/characterization of storage facilities
- Inspect surplus pit storage samples, selected by the DA, to ensure they continue to meet safety and reliability requirements as specified in DA requirements
- Support planning, development, and startup of a new Material Staging Facility

Strategic Horizon (FY23-FY37)

Capability/Needs to Achieve NNSA Strategic Goals and Objectives

- Continue storage capability, thermal environmental monitoring, and surveillance activities as defined above
- Transition operations to the new Material Staging Facility
- Package and ship surplus pits supporting pit disposition and conversion

Future Vision/Core Capability 10- Enabling Infrastructure

Core Capability

Pantex infrastructure capabilities include weapons assembly/disassembly bays and cells, HE synthesis, pressing, machining, firing site facilities, and the Production Support infrastructure that directly sustain the capabilities and mission operations in the MC facilities.

Future Vision

A key aspect of the 2010 NPR is, *“Modernization of the infrastructure, including major capital projects, needed to ensure safe, secure, sustainable and cost-effective operations in support of scientific and manufacturing activities.”* Pantex with the support of the NNSA intends to sustain and recapitalize the infrastructure in order to perform the Pantex mission while supporting the consolidation, energy, and sustainability goals of the Department.

Tactical Horizon (FY13-FY22) Capability/Needs to Achieve NNSA Strategic Goals and Objectives

LI and CBF1 projects are required to ensure reliable facilities and infrastructure to sustain long-term benefits to NNSA. Near-term, HE CoE and NDE projects will require support. CBF1 projects will enable Pantex to sustain operations and minimize the disruptions to Production by upgrading individual areas and allowing the obsolete Ultraviolet Flame Detection and RAMS components to be used for spares to repair those facilities that have yet to be upgraded.

The Pantex Renewable Energy Project (PREP) is being pursued as an Energy Savings Performance Contract. This project will play a key role in satisfying the President’s National Objectives and the Secretary of Energy’s priorities and goals for energy conservation. It will cause a reduction in the amount of Scope 2 Greenhouse Gases (GHG) reported by Pantex. Energy generated and used by the Plant is expected to reduce the Plant’s

electrical costs. The first 10 - 15MW will reduce the Plant’s energy consumption and annual cost by approximately 55% based on preliminary analysis.

Initiatives from other NNSA programs include site-wide wireless initiatives, Homeland Security Presidential Directive (HSPD)-12 badge authentications into unclassified networks, and cyber security operations centers. These initiatives are being evaluated for potential future funding requests.

Several other LI projects such as Cells Upgrade, Closed Circuit Television (CCTV), Weapon Surveillance Facility, and other replacement/refurbishment projects will require support to ensure a safe, secure and fully functional infrastructure is available to support the Plant mission.

Strategic Horizon (FY23-FY37) Capability/Needs to Achieve NNSA Strategic Goals and Objectives

Long-term LI projects are required to address previously identified CPIBP projects to recapitalize enduring facilities and ensure reliable facilities and infrastructure to sustain long-term benefits to NNSA.

The Infrastructure Consolidation Complex (ICC) is proposed to consolidate administrative functions, improve operational efficiencies, reduce energy consumption, and eliminate obsolete deteriorated square footage at the site. When complete and the identified vacating facilities are demolished, the new facility is expected to reduce the Plant footprint by 100,000 ft².

Future Vision/Core Capability 12- Support of Other Mission/Program Capabilities-Work for Others

WFO Future Vision

Reimbursable projects provide unique DOE/NNSA contractor goods or services to Other Federal Agencies (OFAs) and the private sector. These projects are fully

funded by the requesting agency and performed on a non-interference basis with DOE/NNSA funded work. Pantex's reimbursable work scope includes but is not limited to: Nuclear nonproliferation, Counterintelligence, HE products and services, Nuclear Counterterrorism Emergency Response group (NCTER), consultation, and other specialized training.

Nuclear Nonproliferation

Pantex has several WFO programs involved in arms control and the nonproliferation of nuclear warheads, materials, and technologies in the former Soviet Union, including the impact of future arms control treaties on Pantex and the prevention of the proliferation of nuclear warhead technologies. The current presidential administration is in advanced planning to determine the capability and technology to support the Bilateral Implementation Commission of the Strategic Offensive Reduction Treaty (SORT, Treaty of Moscow) for a verification regime. If a warhead elimination régime were to be negotiated and ratified, there exists the possibility that sometime in the future a Russian delegation could visit Pantex as part of verification regime.

Counterintelligence (CI) Program

CI interfaces and supports the Federal Bureau of Investigation (FBI), the Central Intelligence Agency (CIA), and the Department of Homeland Security (DHS).

HE Products and Services

B&W Pantex Explosives Technology (ExT) Division provides HE support to NNSA's National Laboratories, as directed on a cost-reimbursable basis. As an added benefit the activities will assist in maintaining capabilities and threshold capacities for synthesis, formulation, pressing, machining, and analytical/performance testing of NNSA explosives, as necessary to meet stockpile acceptance, surveillance, rebuild, JTA, and LEP requirements. These activities also support related elements such as component development, component

replacement, component aging studies, and sanitization.

Nuclear Counterterrorism Emergency Response

B&W Pantex provides qualified technical and professional personnel and equipment for Accident Response Group (ARG), ARG disposition, Joint Technical Operations Team (JTOT), and Radiological Assistance Program (RAP). These enhance DOE capability to respond to accidents and significant incidents involving nuclear weapons or components.

Secure Transportation Asset (STA) Program

B&W Pantex provides services to the OST. These services include performance of inspections, maintenance, and modifications of OST trucks/tractors, escort vehicles, Safe Secure Trailers (SSTs), Safeguard Transporters (SGTs), and associated electronics and communications equipment.

Environmental Management

The DOE Office of Environmental Management (EM) and Office of NNSA have initiated the closeout of the Pantex Plant Environmental Restoration (ER) program and transition to Long-Term Stewardship (LTS). In FY11, NNSA became responsible for Pantex LTS management. Pantex entered into an Interagency Agreement (IA) between the U.S. Environmental Protection Agency (EPA), Region 6, the U.S. DOE, and the Texas Commission on Environmental Quality (TCEQ) in early 2008. The IA is pursuant to Section 120(e) of Comprehensive Environmental Response Compensation and Liability Act (CERCLA). The IA describes the process by which the DOE/NNSA will complete cleanup activities to address impacts from legacy operations at Pantex, and defines the roles and responsibilities of each party. NNSA will be responsible for continuing to meet the regulatory requirements as documented in the RoD and amended Compliance Plan.

Tactical Horizon (FY13-FY22)
Capability/Needs to Achieve NNSA Strategic Goals and Objectives

- Reimbursable systems and processes will continue to be developed and/or upgraded to ensure increased efficiencies and lower costs associated with the Pantex reimbursable work program
- Examples include:
 - Make the WFO program as seamless as possible such that the private sector wants and can do business with B&W Pantex without undue paperwork and bureaucracy
 - Maintain a site-wide integrated project baseline management system to ensure project managers can properly monitor project costs against schedule, while enabling Pantex sponsors to access the same unclassified data
 - Maintain an intellectual property function in which ideas from plant-specific activities can be patented and actively marketed for licensing potential with the commercial sector

- Maintain the capability to support HE projects for other governmental agencies with respect to the fabrication and testing of HE assemblies and evaluation of HE issues
- Provide DOE/Headquarters (HQ) with training and training aids for Other Governmental Agencies (OGA) with respect to Weapons Incident Response

Strategic Horizon (FY23-FY37)
Capability/Needs to Achieve NNSA Strategic Goals and Objectives

- Develop an external E-Business capability enabling potential Pantex reimbursable sponsors to:
 - Identify the plant capabilities and services desired
 - Communicate with the responsible plant management
 - Enter into appropriate contractual instruments electronically
 - Enable the sponsor to update project status and receive unclassified summary reports



Section 6-Real Property Asset Management

B&W Pantex has developed a long-range plan that balances new construction, energy conservation, and facilities disposition and is aligned with workload projections to ensure support of the mission. Based on the planning assumptions, Pantex square footage is anticipated to increase as shown in the TYSP timeframe.

The FY13 President’s Request and FYNSP funding profiles (Feb. 2011) for Pantex show the Operations of Facilities budget to be adequate to support minimum operations in FY13-FY16. The current funding level for these years supports the DSW mission deliverables. It also provides funding to support base program non-labor costs for utility services, regulatory compliance contracts, direct material, minimum unplanned expenditures and/or emerging issues, and onboard headcount. It does not fully maintain operations or arrest the growth of Deferred Maintenance (DM). The immediate challenge is to increase the site funding for critical infrastructure improvements, upgrades needed to maintain HE pressing capabilities until new

facility is operational, and stabilize the growth of DM.

The funding target for FY17 is nearly \$28M below the minimum operations level for Operation of Facilities. This funding level is inadequate to support the projected on board head count and the base operations. The DSW mission deliverables will be placed at high risk.

Over the past several years, Pantex has been inadequately funded to sustain facility and infrastructure requirements to support NNSA objectives. Due to these funding constraints, available resources were focused on ensuring mission critical facility availability. This was at the expense of the rest of the plant and is evidenced by the increased rate of degradation of facilities and equipment over the last several years

Site Footprint (Current and Future)

Pantex has identified facility and infrastructure LI projects in support of the site mission. NNSA evaluates and selects LI construction projects to satisfy the program requirements and funding targets identified in the FYNSP. Planned major construction includes six new HE related facilities, a staging facility, an evaluation facility, and a maintenance facility.

FY 2012-2018 Operations of Facilities Budget							
\$ in Millions							
	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
Min Operable Requirement (FY12 incl. \$17.2M for Flood Recovery)	177.8	152.2	158.0	162.9	168.5	174.0	179.5
Bay/Cell Reinvestment (FY13-18), Vacuum Chamber (FY13 only), Addtl OPC (FY14 only)	0	19.8	14.8	12.9	10.4	10.8	11.3
Target Funding	164.0	172.0	170.2	173.1	172.9	157.0	TBD
Unfunded Requirement	(13.8)	0.0	(2.6)	(2.7)	(6.0)	(27.8)	

Funding for general plant, expense, and capital equipment projects come primarily from RTBF. The current RTBF budget does not allow for adequate recapitalization of plant infrastructure nor does it allow for improvements related to environmental sustainability. Pantex Plant has historically been dependent on FIRP and Plus-Up funding for plant recapitalization and without adequate RTBF funding the plant infrastructure will continue to deteriorate. Pantex has identified a backlog of unfunded General Plant Project (GPP), expense, and capital equipment projects. Some of the key projects in the backlog include the replacement of the deteriorated high pressure fire loop lead-in piping to production and production support buildings, classified wiring for HE areas, safety and efficiency related projects, and security capital improvements.

Site Footprint (Current and Future)

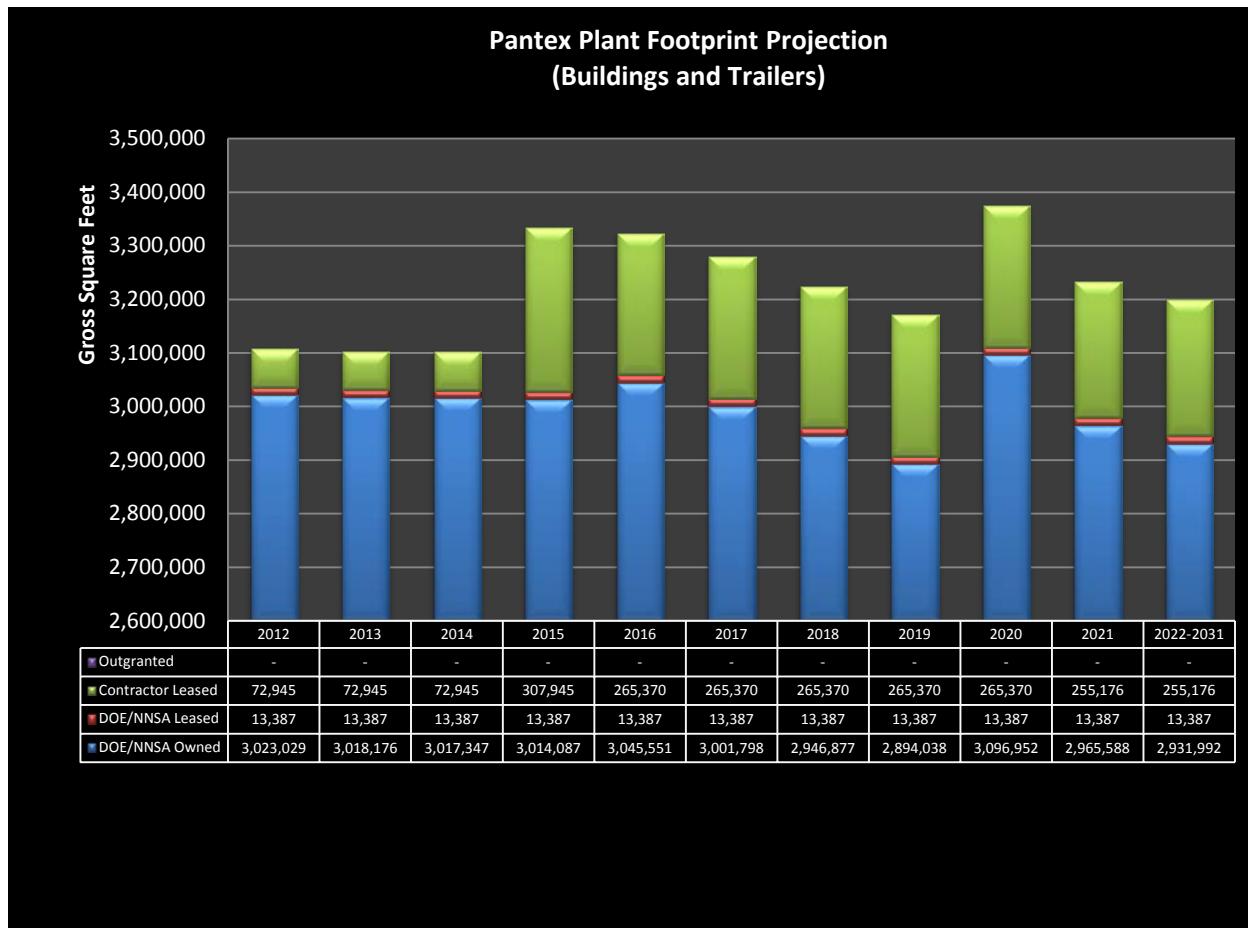
Assumptions:

Based on the guidance to include approved construction, only those projects currently funded or included on the CWG Nominal Schedule and demolition associated with those projects are included in the table below.

Deferred Maintenance Reduction

The DM backlog at the end of FY11 was \$317M, which is \$300K more than the end of FY10. DM buy down in FY11 was \$14M, while new growth due to the minimal inspections performed was \$14M. A significant portion of the increase, \$6.5M, was due to inflation of the backlog to current year dollars. DM reduction since FY03 is approximately \$260M. The projected DM reduction for FY12 is approximately \$5M.

B&W Pantex DM estimates for deficiencies



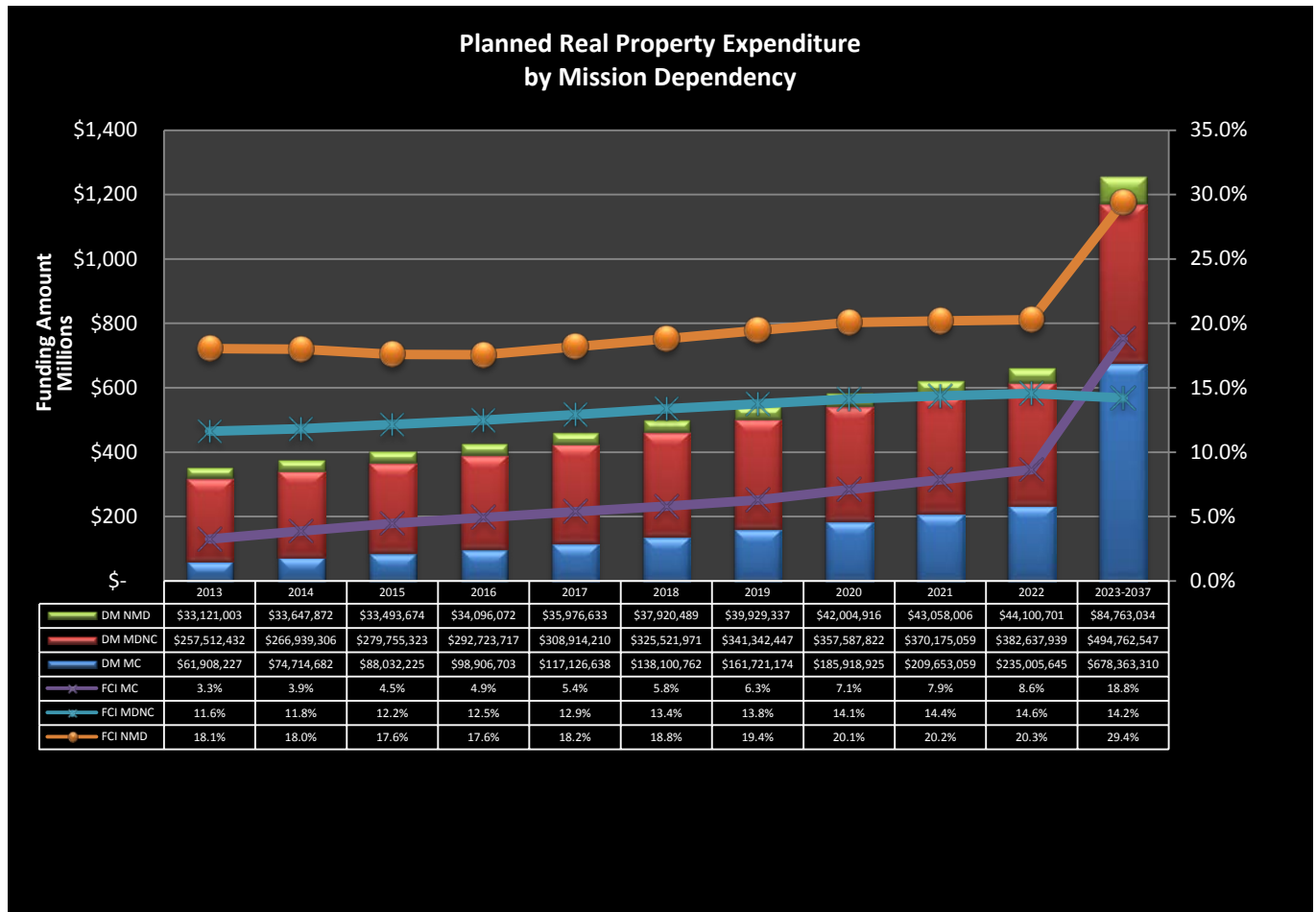
identified during Condition Assessment Survey (CAS) inspections are derived from the Condition Assessment Information System (CAIS) database. Future DM backlog projections are based on a mathematical model that includes factors for plant deterioration, inflation, and plant growth. The model is also used to estimate required maintenance based on funded and approved projects. Estimated required maintenance is based on maintaining a 2.7% Facility Condition Index (FCI) for MC facilities, and an FCI for MDNC facilities of 11.8% in FY10 and improving to 11% in FY21 for an average combined (MC/MDNC) FCI of 7% or below, and a stabilized total FCI of 7.5% or below through FY21.

Due to RTBF funding limitations, there is currently no funding available to address DM, which impacts the plant's ability to maintain an adequate condition for all facilities and infrastructure. The result of

this is evident in chart below which reflects the in-balance in the FCI for mission critical and mission dependent not critical facilities and infrastructure.

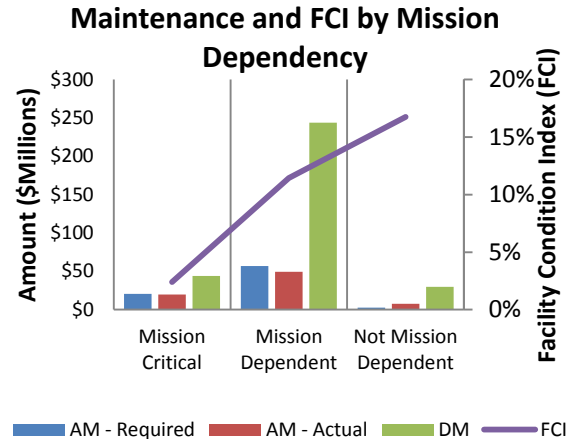
The FIRP Program was the primary funding source used to restore, rebuild, and revitalize the physical infrastructure at Pantex. As such, the Pantex FIRP Program was the primary funding source focused on reduction of deferred maintenance that significantly increases the operational efficiency and effectiveness of facilities and systems in support of stockpile stewardship mission.

With the sunset of the FIRP Program, the Operations of Facilities funding is not adequate to arrest the growth of backlog DM. The CBF program, currently being initiated, may allow Pantex to modernize/recapitalize and sustain the infrastructure for current and future weapon programs.



The estimated FCI in the chart is based on funded and approved projects. As shown on the previous page, the FCI for MC facilities goes from 3.3% in FY13 to 8.6% in FY22, and the FCI for MDNC facilities grows from 11.6% in FY13 to 14.6% in FY22.

RTBF Headquarters has provided Site-Wide Level 2 Milestones for Mission Critical (MC) and Mission Dependent/Not Critical (MD/NC) facilities for Facility Condition Index (FCI) at 5% and 8.45% respectively. Due to limited funding, Pantex funds maintenance on MC Facilities to maintain FCI below 5%. However, the 8.45% FCI goal for MD/NC is not being met. Pantex will not meet the goal until additional funding is provided.



Replacement Plant Value (RPV)		\$4,173	Million			
Total Deferred Maintenance		\$317	Million			
Site Wide Facility Condition Index (FCI)		7.7%				
		Facility Condition Index (FCI)	Asset Condition Index (ACI)	Asset Utilization Index (AUI)	# of Assets	Gross Square Feet (GSF) Buildings & Trailers (000s)
Mission Dependency	Mission Critical	2.4%	97.6%	99.7%	52	992
	Mission Dependent	11.4%	88.6%	99.6%	461	1,819
	Not Mission Dependent	16.8%	83.2%	83.9%	196	311
Facility Use	Office	6.2%	93.8%	97.9%	61	490
	Warehouse	5.8%	94.2%	97.6%	236	724
	Laboratory	7.3%	92.7%	98.5%	9	78
	Housing	N/A	N/A	N/A	0	0

Assumptions:

Information in the table above is based on information as of September 30, 2011. The number of assets in Mission Dependency includes Other Structure and Facilities (OSFs). Laboratory space at Pantex has a FIMS usage code of manufacturing/production related laboratories. The Warehouse category includes staging magazines and trailers (400 series FIMS usage codes).

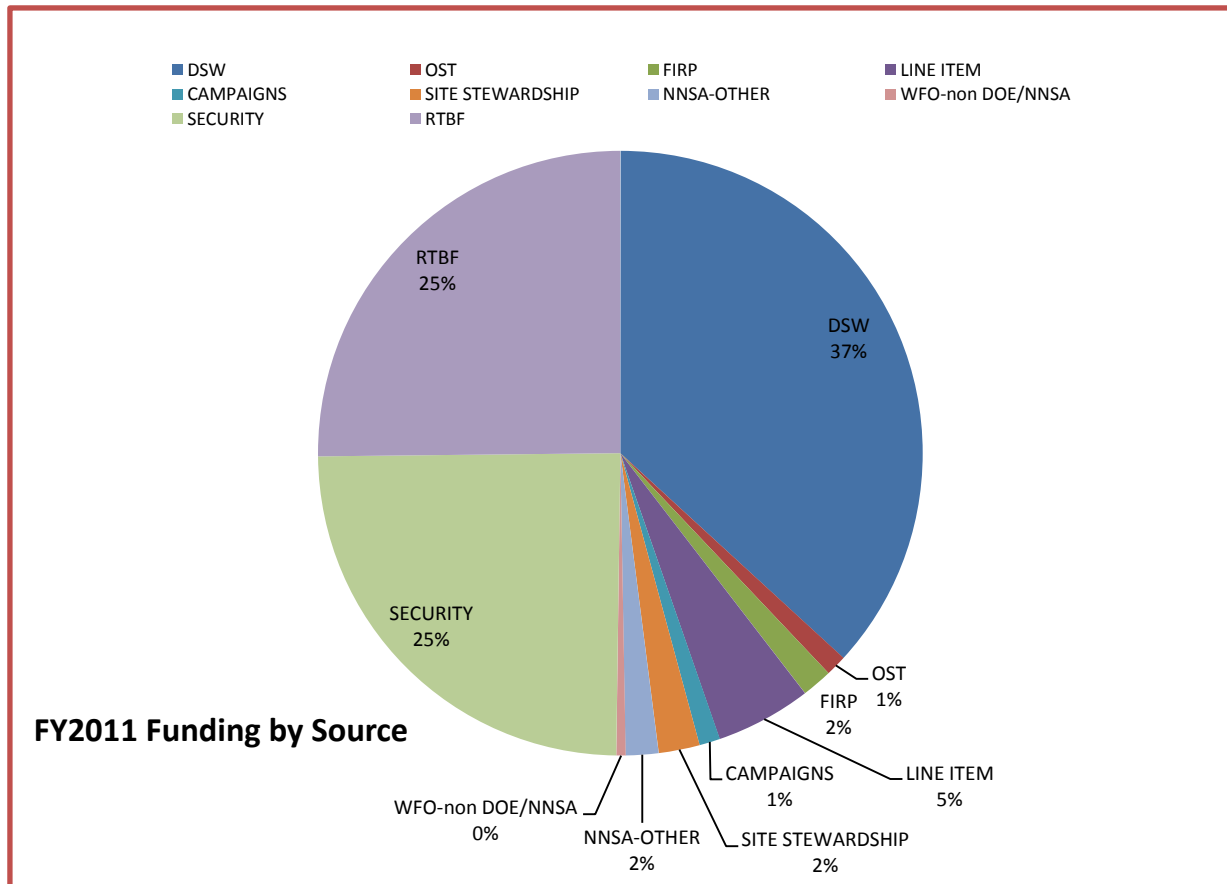
Space Utilization and Consolidation

Space management encompasses all real property owned or leased by DOE. The RTBF Program is responsible for the overall management of space. However to support the site mission, individual facilities are assigned to functional organizations based on space requirements and specialized construction. The functional organizations are responsible for the day-to-day utilization of their assigned buildings. Space utilization remains high at Pantex with space being 98.0% utilized in FY11. Because of this high utilization, site planning efforts are closely coordinated with plant mission and support needs so that operations are in facilities appropriate for their use, and changes in facility requirements are coordinated and implemented in advance.

consider all facets of environmental and energy sustainability. Actions and activities for sustainability encompass the many issues of environmental protection, pollution prevention, resource conservation, waste management, energy and water management as well as the reduction of greenhouse gases resulting from Plant processes and the use of petroleum fuels. Any project can be properly developed to support sustainability, whether it is a specific project to upgrade the efficiency of a building's heating, cooling, and ventilation units; construct a new building; to replace a roof or even to decommission and deconstruct retired buildings. Pantex is striving to replace finite energy sources with sustainable and renewable wind-generated energy and as practical, solar power. Sustainability is a growing concept that will drive improvements in Plant operations for years to come.

Sustainability

Pantex employs a whole building concept to



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Appendices

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Appendix A - NNSA Missions

NNSA is responsible for the management and security of the nation’s nuclear weapons, nuclear non-proliferation, and naval reactor programs. It also responds to nuclear and radiological emergencies in the U.S. and abroad. Additionally, NNSA federal agents provide safe and secure transportation of nuclear weapons and components and special nuclear materials along with other missions supporting the national security.

Code	Mission	Description
M1	Managing the Stockpile	<p>Maintaining the safety, security, and effectiveness of the nuclear deterrent without nuclear testing, especially at lower numbers, requires increased investments across the NSE.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Design and build 21st Century uranium and plutonium processing facilities • Ensure the capabilities to complete ongoing Lifetime Extension Programs • Strengthen science, technology, and engineering base • Reinvest in the scientists and engineers who perform the mission
M2	Preventing Proliferation	<p>Reducing the global nuclear threat by detecting, securing, safeguarding, disposing, and controlling nuclear and radiological material, as well as promoting the responsible application of nuclear technology and science. To accomplish this mission, the Office of Defense Nuclear Nonproliferation works closely with a wide range of international partners, key U.S. federal agencies, the U.S. national laboratories, and the private sector.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Removing and securing dangerous nuclear and radiological material and encouraging indigenous capability • Research and development of technologies to detect proliferation and monitoring treaty obligations • Providing leadership nuclear safeguards and security, nuclear controls, nuclear verification, and nuclear nonproliferation policy • Working cooperatively with international partners to secure and eliminate potentially vulnerable nuclear weapons and weapons-usable material • Strengthen the capability of foreign governments to deter, detect, and interdict illicit trafficking in nuclear and other radioactive materials • Working to dispose of fissile materials
M3	Powering the Nuclear Navy	<p>Providing militarily effective nuclear propulsion plants and ensuring their safe, reliable, and long-lived operation.</p> <p>The Naval Nuclear Propulsion Program comprises the military and civilian personnel who design, build, operate, maintain, and manage the nuclear-powered ships and the many facilities that support the U.S. nuclear-powered naval fleet. The program has cradle-to-grave responsibility for all naval nuclear propulsion matters. Program responsibilities are delineated in Presidential Executive Order 12344 of February 1, 1982, and prescribed by Public Laws 98-525 of October 19, 1984 (42 USC 7158), and 106-65 of October 5, 1999 (50 USC 2406).</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Research, development, and support laboratories • Contractors responsible for designing, procuring, and building propulsion plant equipment • Shipyards that build, overhaul, and service the propulsion plants of nuclear-powered vessels • Navy support facilities and tenders • Nuclear power schools and Naval Reactors training facilities • Naval Nuclear Propulsion Program Headquarters and field offices

M4	Emergency Response	<p>Ensuring that capabilities are in place to respond to any NNSA and DOE facility emergency. It is also the nation's premier responder to any nuclear or radiological incident within the United States (U.S.) or abroad and provides operational planning and training to counter both domestic and international nuclear terrorism.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Planning for Emergencies • Responding to Emergencies • Counterterrorism • International Programs • Emergency Communications • Operations Center • Emergency Operations Training • Continuity Program
M5	Continuing Management Reform	<p>Managing and securing the nation's nuclear weapons, nuclear non-proliferation, and naval reactor programs. It also responds to nuclear and radiological emergencies in the U.S. and abroad. Additionally, NNSA federal agents provide safe and secure transportation of nuclear weapons and components and special nuclear materials along with other missions supporting the national security.</p>
M6	Recapitalizing Our Infrastructure	<p>Investing in the transformation of the nuclear weapons complex into the nuclear security enterprise needed to meet future stockpile needs.</p>

Appendix B - NNSA Programs

NNSA Programs from TYSP Guidance for reference

<p>Directed Stockpile Work (DSW)</p>	<p>The DSW program is responsible for maintaining and enhancing the safety, security, and reliability of the U.S. nuclear weapons stockpile without using underground testing.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Life Extension Program (LEP) • Stockpile Systems • Weapons Dismantlement & Disposition (WDD) • Stockpile Services
<p>Science Campaign</p>	<p>The Science Campaign supports the development of the knowledge, tools, and methods used to assess the performance of the nuclear explosive package of a nuclear warhead.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Primary Assessment Technologies • Secondary Assessment Technologies • Dynamic Materials Properties • Advanced Radiography • Advanced Certification
<p>Engineering Campaign</p>	<p>The Engineering Campaign provides the complex with modern tools and capabilities in engineering sciences and technologies to ensure the safety, security, effectiveness, and performance of the current and future U.S. nuclear weapon stockpile without further underground testing, and provides a sustained basis for stockpile certification and assessments throughout the lifecycle of each weapon.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Enhanced Surety • Weapon Systems Engineering Assessment Technology • Nuclear Survivability • Enhanced Surveillance (ESV)
<p>Inertial Confinement Fusion (ICF) Campaign</p>	<p>The ICF Campaign provides the experimental capabilities and scientific understanding in High-Energy Density Physics (HEDP) necessary to maintain a safe, secure, and reliable nuclear weapons stockpile without underground testing.</p> <p>ICF Campaign has three strategic objectives: (1) achieve thermonuclear ignition in the laboratory and develop it as a routine scientific tool to support stockpile stewardship; (2) develop advanced capabilities including facilities, diagnostics, and experimental methods that access the High-Energy Density (HED) regimes of extreme temperature, pressure, and density required to assess the nuclear stockpile; and (3) maintain the U.S. preeminence in HED science and support broader national science goals.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Ignition • HEDP Support of Stockpile Programs • Diagnostics, Cryogenics, and Experimental Support • Pulsed Power Inertial Confinement Fusion • Joint Program in High Energy Density Laboratory Plasmas • Facility Operations and Target Production • High-Energy Petawatt Laser Development
<p>Advanced Simulation & Computing (ASC) Campaign</p>	<p>The ASC Campaign’s mission is to provide leading-edge, high end simulation capabilities needed to meet weapons assessment and certification requirements and to predict, with confidence, the behavior of nuclear weapons through comprehensive, science-based simulations.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Integrated Codes (IC) • Physics and Engineering Models • Verification and Validation (V&V)

	<ul style="list-style-type: none"> • Computational Systems and Software Environment (CSSE) • Facility Operations and User Support (FOUS)
Readiness Campaign	<p>The Readiness Campaign identifies, develops, and deploys new or enhanced processes, technologies, and capabilities to meet current nuclear weapon design, production, and dismantlement needs and provides quick responses to national security requirements.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Advanced Design and Production Technologies • High Explosives and Weapons Operations • Non-nuclear Readiness • Stockpile Readiness • Tritium Readiness
Readiness in Technical Base and Facilities (RTBF)	<p>The goal of the RTBF program is to operate and maintain NNSA program facilities in a safe, secure, efficient, reliable, and compliant condition.</p> <p>RTBF includes: facility operating costs (e.g., utilities, equipment, facility personnel, training, and salaries); facility and equipment maintenance costs (e.g., staff, tools, and replacement parts); Environment, Safety, and Health (ES&H) costs; and the costs to plan, prioritize, and construct state-of-the-art facilities, infrastructure, and scientific tools within approved baseline costs and schedule.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Operations and Maintenance <ul style="list-style-type: none"> ◦ Operations of Facilities ◦ Nuclear Operations Capability Support (including Containers, Storage and Institutional Site Support (ISS)) ◦ Science, Technology and Engineering (STE) Capability Support (including Program Readiness and Capability Based Facilities and Infrastructure (CBFI)) • Construction
Office of Secure Transportation	<p>The OST mission is to provide a capability for the safe and secure transport of nuclear warheads, components, and materials that will meet projected DOE, DoD, and other customer requirements.</p>
Nuclear Counterterrorism Emergency Response (NCTER)	<p>The NCTER Program mission is to ensure that capabilities are in place to respond to any DOE/NNSA facility emergency, nuclear, or radiological incident within the United States or abroad, and to provide operational planning and training to counter both domestic and international nuclear terrorism and assure that DOE can carry out its mission-essential functions.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Emergency Management • Emergency Response • NNSA Emergency Management Implementation • Emergency Operations Support • National Technical Nuclear Forensics • International Emergency Management and Cooperation • Nuclear Counterterrorism
Facilities and Infrastructure Recapitalization Program (FIRP)	<p>The FIRP mission is to restore, rebuild, and revitalize the physical infrastructure. FIRP applies direct appropriations to address an integrated, prioritized series of repair and infrastructure projects focusing on completion of deferred maintenance that significantly increases operational efficiency and effectiveness of NNSA.</p> <p>Sunsets in FY12</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Recapitalization • Facility Disposition • Infrastructure Planning • FIRP Construction

<p>Site Stewardship</p>	<p>Site Stewardship’s mission is to ensure environmental compliance, sustainability, and energy and operational efficiency, while modernizing, streamlining, consolidating, and sustaining the stewardship and vitality of the sites as they transition within NNSA.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Environmental Projects and Operations (EPO) • Nuclear Materials Integration • Energy Modernization and Investment Program (EMIP) • Corporate Project Management • Site Stewardship Program Direction • Construction
<p>Defense Nuclear Security (DNS)</p>	<p>DNS is responsible for the development and implementation of security programs for the NNSA. In this capacity, DNS is the NNSA line management organization responsible for security direction and program management with respect to prioritization of resources, program evaluation, and funding allocation.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Program Management • Performance Assurance • Resource Management • Protective Force • Physical Security Systems • Information Security • Personnel Security • Materials Control and Accountability (MC&A)
<p>Cyber Security</p>	<p>NNSA Cyber Security Program’s mission is to ensure that sufficient information technology and information management security safeguards are implemented throughout the NNSA complex to adequately protect the NNSA information assets.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Infrastructure Program • Enterprise Secure Computing • Technology Application Development
<p>Global Threat Reduction Initiative</p>	<p>The Global Threat Reduction Initiative identifies, secures, removes, and/or facilitates the disposition of high risk vulnerable nuclear and radiological materials around the world, as quickly as possible, that pose a threat to the United States and the international community.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Research Reactor Conversion • Nuclear and Radiological Material Removal • Nuclear and Radiological Material Protection
<p>Nonproliferation and Verification Research and Development</p>	<p>The Office of Nonproliferation and Verification Research and Development improves U.S. national security through the development of novel technologies to detect foreign nuclear weapons proliferation/detonation and verification of foreign commitments to treaties and agreements.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Proliferation Detection • Nuclear Detonation Detection
<p>Nonproliferation and International Security</p>	<p>The Office of Nonproliferation and International Security (NIS) provides leadership in the formulation and implementation of nonproliferation, nuclear security, and arms control strategies to advance U.S. national security objectives.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Nuclear Safeguards and Security • Nuclear Controls • Nuclear Verification • Nuclear Nonproliferation Policy
<p>International</p>	<p>The Material Protection, Control, and Accounting (MPC&A) Program serves as a first line of defense in preventing nuclear terrorism by working cooperatively with international partners to</p>

<p>Nuclear Material Protection and Cooperation</p>	<p>secure and eliminate potentially vulnerable nuclear weapons and weapons-usable material at nuclear sites in Russia and other countries of the former Soviet Union. The Second Line of Defense (SLD) program works around the world to strengthen the capability of foreign governments to deter, detect, and interdict illicit trafficking in nuclear and other radioactive materials across international borders and through the global maritime shipping system.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Nuclear Warhead Protection • Weapons Material Protection • Material Consolidation and Civilian Sites • SLD Core • SLD Megaports
<p>Fissile Materials Disposition</p>	<p>The Office of Fissile Materials Disposition disposes of surplus U.S. weapon-grade plutonium and highly enriched uranium, and helps Russia to dispose of its surplus weapon-grade plutonium, by irradiating it as fuel in nuclear reactors.</p> <p>Program elements include the following:</p> <ul style="list-style-type: none"> • Plutonium Disposition • HEU Disposition • Elimination of Weapons-Grade Plutonium Production

Appendix C - NNSA Core Capabilities

Core Capability Code	Function	Pantex Plant
C1	Design, Certification, Experiments, Surveillance, and ST&E base	
C2	Plutonium	
C3	Uranium	
C4	Tritium	
C5	High Explosives	Yes
C6	Non-Nuclear	
C7	Weapons Assembly/Disassembly	Yes
C8	Transportation	
C9	Special Nuclear Material Accountability, Storage, Protection, Handling, and Disposition	Yes
C10	Enabling Infrastructure	Yes
C11	Counterterrorism and Counter Proliferation	
C12	Support of Other Mission / Program Capability	Yes
C13	Federal Management and Oversight	

Pantex Supporting Capabilities

The capability and capacity for synthesis, formulation, pressing, machining, and analytical and performance testing of all NNSA explosives to meet acceptance, surveillance, rebuild, JTA, and LEP requirements. These explosive materials also support activities such as development work, component work, component replacement, component aging studies, and sanitization activities.	C1, C5, C6, C12
Pantex has several programs involved in arms control and the nonproliferation of nuclear warheads, materials, and technologies in the former Soviet Union. These programs look at diverse issues such as the impact of future arms control treaties on Pantex and the prevention of the proliferation of nuclear warhead technologies.	C11
Pantex provides qualified technical and professional personnel and equipment for Accident Response Group (ARG), ARG disposition, Joint Technical Operations Team (JTOT), and Radiological Assistance Program (RAP). These enhance DOE capability to respond to accidents and significant incidents involving nuclear weapons or components.	C11
Pantex provides services to the OST supporting the secure transportation of nuclear weapons, nuclear components, and other cargoes related to the maintenance of stockpiled weapons. These services include scheduling and performance of inspections, maintenance, and modifications of OST trucks/tractors, escort vehicles, Safe Secure Trailers (SSTs), Safeguard Transporters (SGTs), and associated electronics and communications equipment.	C8, C12
Sanitizing and disposing of components from dismantled weapons.	C7

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Appendix D - NNSA Special Interest Activities

This table is provided for reference.

Code	Special Interest	Description
CWE	Collaborative Work Environment	Projects to protect critical skills by creating an innovative and competitive work environment for scientists, engineers, technicians, and other professional staff and/or to address human factors to enhance performance, productivity, and product timeliness/quality. Examples include: <ul style="list-style-type: none"> • Collaborative Work environments • Teleworking/hoteling centers • Cutting edge interactive technology • Fitness Centers • Cafeterias
ENV	Environmental	Projects that improve confidence in the ability to control the impact of operations on the environment, even if the project is not specifically required by environmental regulations, court orders, statutes, and other requirements.
EO	Emergency Operations	Projects that enhance the capability to manage emergencies inclusive of property, people, and offsite consequences with the exception of fire.
FIR	Fire	Projects improving the ability to detect and respond to fires, including fire stations, fire alarms, and fire suppression systems.
HS	Life, Safety and Health	Projects to correct a life safety or health deficiency or which are needed to comply with regulatory or statutory life safety and health mandates.
LR	Legal Requirement / Costly Fines	Projects needed to comply with court orders or which are needed to prevent regulatory fines on the site, NNSA, or DOE.
NP	Natural Phenomena	Projects that improve the ability of facilities to withstand natural phenomena such as earthquakes, wild fires, and flooding other than those subject to 10 CFR 830 requirements.
NUC	Nuclear Safety	All projects with radiological or nuclear safety aspects, including projects subject to 10 CFR 830 requirements, projects requiring unresolved nuclear safety question determination, projects affecting the ability to manage radiological material and projects requiring radiological work permits at any time during execution.
SEC	Security	Projects specifically supporting the security mission
SY	Sustainability	Projects justified primarily by meeting requirements identified in approved SSP's or DOE's SSPP. Does not use if other needs justify the project and the sustainability benefit is collateral to the primary justification.
WPS	Weapons Operations	Projects essential to or which improve the ability to fulfill Life Extension Program commitments in a timely, reliable, cost effective manner, including those that enhance the manufacturing and assembly operations; projects essential to or which improve the ability to fulfill commitments to dismantle weapons in a timely, reliable, and cost effective manner. Indicate the specific LEP in the notes section.

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Appendix E - RTBF Key Milestones

The following table is provided for illustration and represents the RTBF Key Tactical and Strategic Milestones currently documented in the FY2012 SSMP.

RTBF KEY Tactical and Strategic Milestones FY 2012 SSMP

Capital Projects			
<i>Mission Function</i>	<i>Activity</i>	<i>Tactical Milestone</i>	<i>Strategic Milestone</i>
Non-nuclear Production	KCRIMS	Full Operations FY2014	
High Explosives	HE Pressing Facility	Construction Complete FY2016	
Plutonium	CMRR-NF		Operation Functionality on or before FY2023
Uranium	UPF		Operation Functionality on or before FY2024
Sustainment of Existing Facilities and Infrastructure			
<i>Mission Function</i>	<i>Activity</i>	<i>Tactical Milestone</i>	<i>Strategic Milestone</i>
Varies	FCI for MC Facilities	<5% by FY2017	Maintain at <5%
Varies	FCI for MD-NC Facilities	<8% by FY2015	Maintain at <8%
Excess Facility and Infrastructure Disposition Management			
<i>Mission Function</i>	<i>Activity</i>	<i>Tactical Milestone</i>	<i>Strategic Milestone</i>
Varies	1-Up and 1-Down Compliance	Required Annually	
Varies	Footprint Reduction		TBD
Varies	PIDAS Reduction		139 acres by 2025

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Appendix F - Acronyms

ADAPT	Advanced Design and Production Technology
ARG	Accident Response Group
ARIES	Advanced Recovery and Integrated Extraction System
ASC	Advanced Simulation & Computing
AUI	Asset Utilization Index
AWE	Atomic Weapon Enterprise
CAIS	Condition Assessment Information System
CAS	Condition Assessment Survey
CBFI	Capability Based Facilities & Infrastructure
CCTV	Closed Circuit Television
CD	Critical Decision
CERCLA	Comprehensive Environmental Response Comprehensive and Liability Act
CFR	Code of Federal Regulations
CI	Counterintelligence
CIA	Central Intelligence Agency
CoE	Center of Excellence
CPIBP	Corporate Physical Infrastructure Business Plan
CSA	Canned Sub Assembly
CT	Computed Tomography
CWG	Construction Working Group
D&D	Decontaminated and Demolished
D&I	Disassembly and Inspection
D&P	Development and Production
D2M	Design to Manufacture
DA	Design Agency
DHS	Department of Homeland Security
DM	Deferred Maintenance
DNFSB	Defense Nuclear Facilities Safety Board
DNS	Defense Nuclear Security
DoD	Department of Defense
DOE	Department of Energy
DPP	Defense Programs Package
DSW	Directed Stockpile Work
EM	DOE Office of Environmental Management
EMIP	Energy Modernization and Investment Program
EPA	Department of Homeland Security

EPO	Environmental Projects and Operations
ER	Environmental Restoration
ESD	Electrostatic Discharge
ES&H	Environment, Safety, and Health
ExT	Explosives Technology
EVS	Enhanced Surveillance
FBI	Federal Bureau of Investigation
FCI	Facility Condition Index
FIMS	Facility Information Management System
FIRP	Facilities and Infrastructure Recapitalization Project
FPU	First Production Unit
FSLI	Fire Suppression Lead In
FY	Fiscal Year
FYNISP	Future Years Nuclear Security Program
GHG	Greenhouse Gases
GSF	Gross Square Feet
GPP	General Plant Project
HE	High Explosive
HE CoE	High Explosives Center of Excellence
HED	High-Energy Density
HEDP	High-Energy Density Physics
HE P&S	HE Packaging and Staging
HEPF	HE Pressing Facility
HE ST&E	HE Science, Technology, and Engineering
HEWO	High Explosives and Weapons Operations
HMX	High Melting Explosive
HNS	Hexanitrostilbene
HPFL	High Pressure Fire Loop
HRO	High Reliability Organization
HQ	Headquarters
HSPD	Homeland Security Presidential Directive
HVAC	Heating, Ventilation, and Air Conditioning
IA	Interagency Agreement
IC	Integrated Codes
ICAP	Integrated Construction Alignment Plan
ICC	Integrated Consolidation Complex

ICF	Inertial Confinement Fusion
IHE	Insensitive High Explosive
ISS	Institutional Site Support
JTA	Joint Test Assembly
JTOT	Joint Technical Operations Team
LANL	Los Alamos National Laboratory
LEP	Life Extension Program
LI	Line Item
LINAC	Linear Accelerator
LLCE	Limited Life Component Exchange
LLNL	Lawrence Livermore National Laboratory
LRPPM	Long Range Pantex Production Model
LTS	Long Term Stewardship
M&O	Management and Operating
MC	Mission Critical
MC&A	Materials Control and Accountability
MD	Material Disposition
MDNC	Mission Dependent, Not Critical
MPC&A	Material Protection, Control and Accounting
NCTER	Nuclear Counterterrorism Emergency Response
ND3	Non-destructive density determination
NDE	Non Destructive Evaluation
NG	Neutron Generator
NIS	Nonproliferation and International Security
NMD	Not Mission Dependent Facilities
NNSA	National Nuclear Security Administration
NNSS	Nevada National Security Site
NPO	NNSA Production Office
NPR	Nuclear Posture Review
NSE	Nuclear Security Enterprise
OFA	Other Federal Agencies
OGA	Other Governmental Agencies
OSF	Other Structures and Facilities
OSHA	Occupational Safety and Health Administration

OST	Office of Secure Transportation
P&PD	Production and Planning Directive
PA/CRMP	Programmatic Agreement and Cultural Resource Management Plan
PBX	Plastic Bonded Explosive
PCD	Program Control Document
PDRD	Plant Directed Research, Development and Demonstration
PETN	Pentaerythritol Tetranitrate
PIDAS	Perimeter Intruder Detection and Assessment System
PREP	Pantex Renewable Energy Project
PS	Production Support
R&D	Research and Development
QER	Quality Evaluation Report
RAM	Radiation Alarm Monitoring
RAMS	Radiation Alarm Monitoring System
RAP	Radiological Assistance Program
RDX	Research Department Explosive
RoD	Record of Decision
RPV	Replacement Plant Value
RTBF	Readiness in Technical Base and Facility
RTG	Radioisotopic Thermoelectric Generator
S&S	Safeguards & Security
SDL	Second Line of Defense
SGT	Safeguard Transporters
SHPO	State Historic Preservation Office
SI	Sealed Insert
SNL	Sandia National Lab
SNM	Special Nuclear Material
SORT	Strategic Offensive Reduction Treaty
SPEIS	Supplemental Programmatic Environmental Impact Statement
SSPP	Strategic Sustainability Performance Plan

SRS	Savannah River Site
SSMP	Stockpile Stewardship and Management Plan
SSP	Stockpile Stewardship Program
SST	Safe Secure Trailers
STA	Secure Transportation Asset
ST&E	Science, Technology & Engineering
TATB	Triamino Trinitrobenzene
TCEQ	Texas Commission on Environmental Quality
TRC	Total Recordable Case
TTU	Texas Tech University
TYSP	Twenty-Five Year Site Plan
UV	Ultraviolet
V&V	Verification and Validation
WDD	Weapons Dismantlement & Disposition
WETL	Weapons Evaluation Testing Laboratory
WFO	Work For Others
WIR	Weapon Incident Response
WR	War Reserve
WW	World War

TWENTY-FIVE YEAR

SITE PLAN

FY2013 – FY2037

July 9, 2012

PanTEX