

Pantex INFO

Stockpile Stewardship Campaigns

Campaigns are important contributors to the Department of Energy/National Nuclear Security Administration (DOE/NNSA) Stockpile Stewardship Program.

Campaigns are focused scientific and technical efforts to develop and maintain critical capabilities needed to ensure the safety, reliability and performance of the nation's nuclear weapons stockpile for the long term.

Pantex is directly involved with two of these campaigns:

Engineering Campaign

The Engineering Campaign provides NNSA's Stockpile Stewardship Program with modern tools and capabilities in engineering sciences and technologies to ensure the safety, security, reliability and performance of the current and future U.S. nuclear weapon stockpile, as well as, a sustained basis for stockpile certification. Pantex is involved in the Enhanced Surveillance (ES) sub-program.

The goal of the ES sub-program is to develop the tools needed to predict or detect the precursors of aging-related defects in weapons before they jeopardize safety or reliability. Predictive modeling and simulation are central to this activity. With sufficient lead-time, the necessary redesigning, refurbishing and qualifying can be made efficiently and cost effectively within the capabilities and capacity of the complex. ES is developing the technologies and methods, as well as the fundamental understanding of material properties and weapons science, to improve detection and predictive capabilities.

A major benefit of this program will be the ability to better predict component and material lifetimes, a critical element of the Stockpile Stewardship Program.

Readiness Campaign

The Readiness Campaign is chartered to cost effectively support future stockpile manufacturing capability needs. The mission of the Readiness Campaign is to transform beneficial applied science and technology concepts and methods into operationally-ready capabilities that deliver cost-effective and rapid product realization. The Readiness Campaign provides process capabilities to all weapon programs, across all product lines, from development through manufacturing activities, and anticipates capabilities needed for enduring readiness. Pantex is involved in two of the five Readiness Campaigns

subprograms, Advanced Design and Production Technologies (ADAPT) and High Explosives and Weapons Operations (HEWO).

Advanced Design and Production Technologies (ADAPT)

The ADAPT Subprogram supplies a vital link in supporting the NSE's mission to assure a safe, reliable and secure nuclear weapons stockpile. It often acts as a bridge between advanced development and product or capability implementation in the stockpile.

It also carries the responsibility to pursue selected, promising technological improvements that could result in significant, "transformational" improvements or reductions in risk to the Life Extension Program.

This campaign has evolved over the years and now supports predominately cross-cutting, enterprise-level process enhancements.

High Explosives and Weapon Operations (HEWO)

The HEWO Subprogram was established to assure that the NSE is fully ready to support mission and workload requirements associated with:

- Production of specialty high explosives and energetic components
- Requalification of weapon components for reuse
- Assembly and disassembly of war reserve (WR) nuclear weapons
- Production logistics and support system improvements

The goal of this subprogram is to achieve/sustain production readiness by enhancing existing capabilities, deploying new capabilities, modernizing processes and facilities to establish the required capacity and to use science-based design, engineering, and manufacturing capabilities to achieve better integration across the Enterprise, higher efficiency and impeccable quality at a reduced cost.

This campaign was established by the NNSA to ensure that the techniques developed in ADAPT and ES are implemented for directed stockpile work.

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