

The National Nuclear Security Administration (NNSA) maintains and enhances the safety, security, and effectiveness of the U.S. nuclear weapons stockpile without nuclear explosive testing. The B61-12 Life Extension Program (LEP) is essential to enabling the NNSA to accomplish its mission of providing safe, secure, and effective nuclear weapons to support the Nation's nuclear deterrent.

Overview

The B61 nuclear gravity bomb, deployed from U.S. Air Force and North Atlantic Treaty Organization (NATO) bases, has been in service for over 50 years. Numerous modifications have been made to improve the B61's safety, security, and reliability since the first B61 entered service in 1968, and four B61 variants remain in the stockpile: the 3, 4, 7, and 11. However, the aging weapon system requires a life extension to continue deterring potential adversaries and reassuring our allies and partners of our security commitments to them.

The B61-12 LEP will refurbish, reuse, or replace all of the bomb's nuclear and non-nuclear components to extend the service life of the B61 by at least 20 years, and to improve the bomb's safety, security, and effectiveness. This LEP will address all age-related issues of the bomb, and enhance its reliability, field maintenance, safety, and use control. With these upgrades and the addition of a U.S. Air Force



supplied Boeing Tailkit Assembly, the B61-12 LEP will consolidate and replace four B61 weapons: 3, 4, 7, and 10. When fielded, the B61-12 will balance greater accuracy provided by the modern tailkit with a substantial reduction in yield, with no overall change in military requirements or characteristics.

The B61-12 LEP is critical to sustaining the Nation's air-delivered nuclear deterrent capability. The B61-12 first production unit (FPU) will occur in FY 2022. The bomb will be approximately 12 feet long and weigh approximately 825 pounds. It will be air-delivered in either ballistic gravity or guided drop modes and is being certified for delivery on current strategic (B-2A) and dual capable aircraft (F-15E, F-16C/D & MLU, PA-200) as well as future aircraft platforms (F-35, B-21).



Developmental flight test from an F15-E

NNSA Nuclear Security Enterprise Roles

Sandia National Laboratories and **Los Alamos National Laboratory** are the design and engineering labs for the B61-12 LEP. In addition, Sandia is responsible for production of custom electronics, including neutron generators. Los Alamos is responsible for production of detonators and other classified components.

Additional production activities are performed at the following sites:

- **Kansas City National Security Campus** is responsible for producing 39 major non-nuclear component assemblies including firing, safing, and use control components.

- **Y-12 National Security Complex** is responsible for the remanufacture of components made of uranium and other materials.
- **Savannah River Site** is responsible for testing, evaluating, and replenishing the gas transfer system.
- **Pantex Plant** is responsible for producing high explosives, requalifying the B61 pit, and final assembly of the complete B61-12 bomb for delivery to the U.S. Air Force.



Major Accomplishments

- In FY 2019, the B61-12 LEP achieved FPU on 93 of 112 weapon components.
- System qualification of the B61-12 continues with the completion of over 45 system tests since the start of Phase 6.4, including 16 qualification flight test releases.

Major Future Milestones

Certification activities to validate the weapon meets Department of Defense requirements, including joint flight qualification testing, will continue in FY 2020. NNSA is currently on schedule to provide the system-level FPU in Fiscal Year 2022 and will complete production in 2025.



An F-15E conducts a vibration fly-around test

