

“NNSA ensures the U.S. nuclear weapons stockpile remains safe, secure, and effective without the use of nuclear explosive testing.”

- Dr. Charles Verdon, Deputy Administrator for Defense Programs

Overview

One of NNSA’s core missions is to ensure the United States maintains a safe, secure, and effective nuclear weapons stockpile through the application of unparalleled science, technology, engineering, and manufacturing. NNSA extends the service life of weapons that have reached the end of their original design life through Life Extension Programs (LEPs). Other modernization efforts include Alterations (ALTs), which do not change the weapon’s operational capabilities, and Modifications, which do change the weapon’s operational capabilities. NNSA also conducts surveillance and assessment to ensure that weapons currently in the stockpile remain safe, secure, and effective. Labs, plants, and sites across the Nuclear Security Enterprise work together on this enduring national security mission.

Modernization Milestones

The U.S. nuclear warhead lifecycle begins with Phase One: Concept Study and ends with Phase Seven: Retirement, Dismantlement, and Disposition. All of NNSA’s LEPs are in Phase Six: Quantity Production and Stockpile Maintenance and Evaluation.

PHASE 6.1 Concept Assessment	PHASE 6.2 Feasibility Study & Down Select	PHASE 6.2A Design Definition & Cost Study	PHASE 6.3 Development Engineering	PHASE 6.4 Production Engineering	PHASE 6.5 First Production	PHASE 6.6 Full-Scale Production
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Annual Assessment and Surveillance

NNSA conducts extensive stockpile evaluations through surveillance of deployed weapons returned from Department of Defense delivery systems to identify any potential defects or aging concerns. These data are a key component in an annual report to the President on the current state of the stockpile. For the last 23 years, the three NNSA Laboratory Directors have certified that the stockpile remains safe, secure, and effective, and that additional underground nuclear explosive testing is not required at this time.



B61-12 flight test