

NNSA's Reliable Replacement Warhead (RRW) Program

*Modernizing the Nuclear Weapons Complex Today
To Make It More Responsive to the Challenges of Tomorrow*

In order to achieve President Bush's vision of the smallest nuclear weapons stockpile needed for our national security, the National Nuclear Security Administration (NNSA) has outlined a strategy that will not only reduce the number of weapons, but lead to a safer and more secure stockpile, with weapons that are more easily manufactured and maintained, backed up by a more responsive nuclear weapons infrastructure.

The vehicle for this transformation is NNSA's concept for the Reliable Replacement Warhead (RRW). RRW is not a new weapon providing new or different military capabilities and/or missions. It will meet the same military requirements as current legacy warheads by utilizing replacement components. It will be able to ensure greater long-term confidence in safety and reliability while decreasing the likelihood that underground nuclear testing would ever be needed to ensure that confidence. Through innovative and enhanced safety and surety features, RRW will also have the capability to prevent unauthorized use.

In the meantime, NNSA will continue to maintain and extend the life of the current stockpile through its Life Extension Program. The current stockpile consists of warheads that were developed and nuclear tested during the Cold War to stringent requirements. As weapons are refurbished and their lifespan extended, the inevitable accumulation of small changes that occur results in refurbished weapons that have moved away from their original designs. This raises concerns among scientists about our ability to assure the safety and reliability of the legacy stockpile indefinitely, absent underground nuclear testing.

The RRW study underway is intended to mitigate that risk. It is funded at approximately \$25 million for FY 06 and FY 07.

Key Facts and RRW Overview:

- Stockpile Stewardship is working - Today, the stockpile remains safe and reliable. This assessment is based on cutting-edge scientific and engineering experiments and analysis, including extensive laboratory and flight tests of warhead components and subsystems since nuclear testing was banned in 1992.

- As Stockpile Stewardship continues, the long-term implications of successive refurbishments of legacy warheads from the Cold War must be considered. Each refurbishment takes us further from the tested configurations of these highly sophisticated systems, raising concerns about our ability to ensure stockpile safety and reliability over the very long term.
- RRW is the next logical step. That program, now in the design phase, is examining the feasibility of providing replacements for legacy warheads. It will allow us to design replacement warheads that are easier to manufacture and maintain, are safer and more secure, and eliminate environmentally dangerous materials.
- RRW will help ensure long-term confidence in reliability and a correspondingly reduced necessity of future nuclear testing.
- RRW offers the pathway to a complete transformation of the U.S. nuclear stockpile, resulting in a more efficient and responsive nuclear weapons research, development and production infrastructure.
- Once it is demonstrated that replacement warheads can be reproduced on a timescale in which geopolitical threats could emerge, or the nuclear weapons complex can respond in a timely way to technical problems in the stockpile, further reductions can be made in reducing non-deployed warheads.
- The design competition between Lawrence Livermore National Laboratory and Los Alamos National Laboratory, with support from Sandia National Laboratories, is exploring RRW options. The program is on schedule and on budget and should result in the selection of a preferred design by the end of 2006.
- If the administration decides to develop the RRW and Congress provides funding, the next step will be to proceed to the engineering development phase that should take approximately 60 months.