Nuclear Weapons "Modernization" Myths and Realities

Issue Briefs

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Eighteen years after the last U.S. nuclear test, it is abundantly clear that maintaining the reliability of existing U.S. nuclear warheads does not depend on a program of nuclear test explosions. Over the past decade the U.S. Life Extension Program has successfully refurbished major warhead types, and with sufficient resources can continue to do so indefinitely.

Moreover, the delivery systems for U.S. nuclear forces are also reliable, effective, and modern. The United States is already engaged in the process of upgrading all of its strategic nuclear delivery systems, the warheads they carry, and the production complex for the next 20-30 years or more.

With the fiscal year (FY) 2011 budget request, the Obama administration is clearly committed to making sure that a more than adequate budget is available to support the task.

In February, the administration proposed a 10 percent increase (to $7 billion) in FY 2011 funding for weapons activities in the Department of Energy's National Nuclear Security Administration (NNSA), which oversees the U.S. nuclear stockpile and production complex. The administration plans to spend an additional $5 billion on NNSA nuclear weapons activities over the next five years.

Linton Brooks, who ran NNSA during the Bush administration, said April 7 that he "would have killed" for that budget when he was there and "I think it does put us on a very firm, firm basis."

Former Secretary of Defense James Schlesinger told the Senate Foreign Relations Committee April 29 that "What we have is a step forward, a major step forward ... with regard to upgrading the nuclear weapons stockpile."

Outdated Thinking Persists

Despite the overwhelming evidence to the contrary, a few Senators cling to the outdated notion that the United States is not "modernizing" its nuclear weapons production infrastructure and that new-design warheads should be pursued to maintain the reliability of the U.S. nuclear stockpile.

Senator Jon Kyl (R-Ariz.) told The PBS NewsHour April 9, "I think the Senate will find it very hard to support [New START] if there is not a robust modernization plan."

In reality, there is a robust modernization plan already underway. The United States is in the process of upgrading all of its strategic delivery systems, the warheads they carry, and the production complex for the next 20-30 years or more, including:

- **Enhancing Nuclear Warheads**: The U.S. stockpile of nuclear warheads and bombs is certified annually to be safe and reliable and is continually enhanced through NNSA's Life Extension Program (LEP). For example, the W87 Minuteman warhead has already been refurbished to last past 2025, and NNSA is requesting $63 million for additional work on this warhead in FY 2011. The B61-7 and B61-11 bombs for the B-2 bomber were recently refurbished for an additional 20 years. In 2009, NNSA began delivery of refurbished W76 Trident warheads with service lives of an additional 30 years. NNSA is requesting almost $1
billion over the next five years for an LEP study on the W78 Minuteman warhead. This ongoing process can continue indefinitely.

- **Modernizing the Production Complex**: The U.S. nuclear weapons production complex is being modernized, with new facilities planned. The FY 2011 NNSA budget request includes large increases for the Chemistry and Metallurgy Research Replacement plutonium facility at Los Alamos National Laboratory, N.M., which would see its budget jump from $97 million in FY 2010 to $225 million in FY 2011. The Uranium Processing Facility at Oak Ridge, Tenn., would increase from $94 million to $115 million.

- **Maintaining Strategic Delivery Systems**: U.S. nuclear delivery systems are undergoing continual overhaul, including complete rebuilds of the Minuteman III Intercontinental Ballistic Missile (ICBM) and Trident II Submarine-Launched Ballistic Missile (SLBM). Air Force Gen. Kevin Chilton, head of U.S. Strategic Command, recently said the Minuteman can serve until 2030, and the Trident is expected to last until 2042. The service lives of Trident Ohio-class ballistic missile submarines are being extended, and a brand new submarine, the SSBN-X, is under development at an expected cost of $85 billion. The B-2 "stealth" bomber is being upgraded at a cost of $1 billion over the next 5 years. The Air Force is also planning to replace the Air-Launched Cruise Missile (ALCM).

By any common-sense definition, these projects add up to a robust modernization plan.

As Secretary of Defense Robert Gates wrote in his preface to the April 2010 Nuclear Posture Review (NPR), "These investments, and the NPR's strategy for warhead life extension, represent a credible modernization plan necessary to sustain the nuclear infrastructure and support our nation's deterrent."

In a joint statement on the NPR from the directors of the three nuclear weapons laboratories issued April 9, Sandia's Tom Hunter, Los Alamos' Michael Anastasio, and Lawrence Livermore's George Miller said:

"We are reassured that a key component of the NPR is the recognition of the importance of supporting a modern physical infrastructure--comprised of the national security laboratories and a complex of supporting facilities--and a highly capable workforce with the specialized skills needed to sustain the nuclear deterrent."

**New-Design Warheads Not Necessary, But Are Still An Option**

The NPR also establishes that "The United States will not develop new nuclear warheads. Life Extension Programs will use only nuclear components based on previously tested designs, and will not support new military missions or provide for new military capabilities."

This is a prudent and technically sound approach. Given the success of the ongoing U.S. warhead Life Extension Program, there is currently no technical need for new-design warheads and renewed nuclear testing. A September 2009 report by the JASON independent technical review panel's report concluded that the "lifetimes of today's nuclear warheads could be extended for decades, with no anticipated loss in confidence."

To minimize the risks posed by changes to warhead components--particularly the nuclear components in warhead primaries and secondaries--the JASON group has recommended against unnecessary replacement of components not validated by nuclear test experience.

The directors of the three U.S. nuclear weapons labs have strongly endorsed the NPR's approach. In their April 9 joint statement, they said:

"We believe that the approach outlined in the NPR, which excludes further nuclear testing and includes the consideration of the full range of life extension options (refurbishment of existing warheads, reuse of nuclear components from different warheads and replacement of nuclear components based on previously tested designs), provides the necessary technical flexibility to
manage the nuclear stockpile into the future with an acceptable level of risk."

**Alarmism Unwarranted**

Nonetheless, Senator Kyl—who has been an ardent opponent of the nuclear test ban treaty and who recently said in an April 9 profile in *The Wall Street Journal* that "I am not a scientist and I don't pretend to know all the science" --disagrees.

On April 20, Kyl told *The National Journal*: "What I find truly alarming about the Nuclear Posture Review is that it claims to support a 'safe, secure, and effective' nuclear arsenal, but at the same time it imposes unnecessarily strict tests in terms of extending the life of warheads that may need components replaced."

Such alarmism is unwarranted and unsubstantiated by the facts. The technical reality is that the United States does not need to resume nuclear test explosions, nor does it need to build new "replacement" warhead designs to maintain the reliability and effectiveness of the U.S. nuclear stockpile.

If at some point in the future it becomes evident that the replacement of certain nuclear components is the most cost-effective way to improve warhead reliability, safety, or surety, that option remains available.

NNSA Administrator Thomas D'Agostino made clear in an April 14 House Armed Services hearing that the NPR will allow the national nuclear weapons laboratories to "study all options for ensuring the safety, security, and effectiveness of our nuclear warheads, and we'll do so on a case-by-case basis."

**Bottom Line**

Lingering concerns that the United States does not have a plan to maintain and modernize its nuclear forces are based on myth, not reality. It would be tragic if Senators allowed such myths to prevent them from supporting New START and the Comprehensive Test Ban Treaty, which would reduce the very real nuclear weapons threats posed by other nations. - **TOM Z. COLLINA and DARYL G. KIMBALL**

For the full ACA analysis on U.S. Nuclear Modernization Programs, please go to [http://www.armscontrol.org/factsheets/USNuclearModernization](http://www.armscontrol.org/factsheets/USNuclearModernization)

- [Daryl G. Kimball](https://www.armscontrol.org/factsheets/USNuclearModernization)
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