

## **Remarks of Nuclear Modernization**

Hans M. Kristensen  
Federation of American Scientists

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Nuclear modernization has become a controversial term. Supporters of reducing the numbers and role of nuclear weapons see it as a contradiction of the arms control and disarmament vision presented by President Barack Obama in Prague. President Obama also said that he wanted to put an end to Cold War thinking – a tall order.

Supporters of modernization see it as a natural consequence of maintaining a safe, secure and effective nuclear arsenal as long as nuclear weapons exist, the other promise made in Prague.

During a heated debate over the New START Treaty, Congressional opponents extracted a pledge from the administration to spend in the order of \$214 billion over the next decade to modernize the nuclear forces and infrastructure.

I see nuclear modernization as a dilemma for the administration's arms control and disarmament message because modernization, if combined with protection of the existing force structure, inevitably will be seen by the international community as saying one thing but doing another. Some will begin to ask what has actually changed, except for slicing a little here and there in the force structure.

Putting an end to Cold War thinking will require a great deal more. We're now at a crossroad where decisions will have to be made about the next generation of key components of the nuclear posture. Decisions we make now will cost enormous sums, lock us into a force structure for half a century, and influence how adversaries and allies adjust their postures and attitudes for the next decades.

The basis for these force structure decisions tie in with the White House nuclear targeting review that is nearing completion. The decisions and scope are not known but the review is intended to identify new reductions that can be pursued with Russia and possibly others. This includes adjustments in targeting requirements and alert levels, including whether it is still necessary for the military to plan against a Russian surprise nuclear attack – a scenario the Intelligence Community has already concluded will most likely not occur.

### **Force Structure**

The force structure analysis conducted in preparation for the New START treaty and the Nuclear Posture Review protected the existing force structure and was based on presidential guidance that had been in place for some time. This force structure is bloated and will increasingly be out of sync with Russia's nuclear forces structure, which is already declining below the New START Treaty limit. The U.S. must adjust its force structure to demonstrate that it intends to follow Russia and avoid that the

large U.S. force structure and warhead upload capability deepen mistrust and drive Russian worst-case planning.

The most immediate decision concerns the Ohio-class replacement with the next generation ballistic missile submarine. The Navy has selected a design that is 2,000 tons larger than the Ohio-class, but it only includes 12 boats with 16 missiles each compared with 24 missiles on each of the 14 Ohio-class SSBNs. Long-lead procurement is already underway and purchase of the first boat is scheduled for 2021 with the first boat sailing on patrol in 2031 – almost 20 years from now.

The current SSBN force is bloated, both in terms of boats, missiles, warheads, and operations. To meet the New START limit, the Navy will start emptying four of 24 tubes on each boat beginning in 2015, leaving 20 missiles per boat for a total of no more than 240 deployed missiles. But given that the U.S. has already decided to transition to an SSBN fleet of 12 SSBNs with 192 missiles, the U.S. should cancel the refueling overhauls of the next two SSBNs, retire the boats, and reduce the loading on the remaining 12 boats to 16 missiles each. These are decisions that could be made now.

By the end of the decade, the SSBN force will carry 70 percent of all U.S. deployed strategic warheads. Currently each SLBM carries an average of 4-5 warheads, with a large inventory in reserve for upload if necessary. A next START treaty will mainly have to trim warheads from the SSBN force.

Of course, there is nothing – except STRATCOM’s interpretation of presidential guidance – that requires the United States to retain 12 boats. The force could be trimmed further to ten or even eight. No other nuclear weapon state is building more than eight SSBNs.

The ICBM force is equally bloated and should be reduced. The Minuteman III has been life-extended through 2030 and can probably be extended further with a relatively modest investment. No decision is needed soon on a replacement ICBM but a study is already underway.

Up to 420 single-warhead ICBMs are planned under New START. This is an unnecessarily large force, especially considering the warhead upload capability. Russia is heading toward an ICBM force of perhaps half that size, due to retirement of three types of ICBMs over the next decade. To maintain some form of parity and counter worst-case planning, the United States should at least cut its ICBM force to 300 by retiring one missile squadron at each of the three bases.

The force could be trimmed even further, and former STRATCOM commander General Cartwright has, in cooperation with Global Zero, recommended eliminating the ICBM force altogether.

The bombers do not serve a day-to-day nuclear role but are mainly conventional platforms. That will also be the case for the next generation bomber. When asked which leg of the nuclear triad to cut, most people say the bombers. Personally, I’m

not convinced it would be smart to switch to a Dyad made up entirely of fast-flying ballistic missiles. Rather than whether the bomber should be nuclear-capable, the biggest question seems to be whether it is necessary to equip it with a new cruise missile. That standoff mission is now limited to 44 B-52 bombers, but given the development in conventional cruise missiles and the growing range of adversarial air defense capabilities I'm not so sure a nuclear air-launched cruise missile mission is relevant.

The non-strategic nuclear force is being trimmed and modernized. The trimming concerns the decision to retire the nuclear Tomahawk. No replacement is planned. Dual-capable aircraft include the F-15E, F-16 and Tornado and the Air Force plans to add nuclear capability to the F-35 Joint Strike Fighters from the early 2020s. Despite newfound interest by some in Russian non-strategic nuclear weapons, the fiscal constraints here and overseas and the decreasing relevance of tactical nuclear weapons in general, the dual-capable aircraft mission might be headed for retirement in the foreseeable future. Reassurance of allies must be based on real reassurance, not a patchwork of leftovers from the Cold War.

### **Nuclear Warheads**

The DOD nuclear weapons stockpile currently contains nearly 5,000 warheads, down from the 5,113 in 2009. The Pentagon's Strategic Guidance published earlier this year states: "It is possible that our deterrence goals can be achieved with a smaller nuclear force, which would reduce the number of nuclear weapons in our inventory as well as their role in U.S. national security strategy."

So it seems inevitable that we're going to see further reductions in the stockpile even in the short term. The stockpile size has never been directly affected by arms control agreements, but those days will be over if efforts succeed in broadening arms control to non-deployed warheads. Yet unilateral stockpile reductions have been made repeatedly in the past and should and will likely be made in the future.

The stockpile currently includes seven basic types of nuclear warheads that have been converted into 14 different versions, of which 11 are active. In the foreseeable future we're going to see consolidations of these warhead types and versions. We already have the W76-0 being converted into the W76-1, and four versions of the B61 are scheduled to be converted into the B61-12. A common warhead is envisioned for the W78 and W88. Some of these efforts will lead to reductions, others less so.

There are two primary interests in these future warhead conversions: one is that the reliability is sufficient to avoid a need to resume nuclear testing; the other is that the current guidelines of the NPR are not weakened. They state that the United States will not develop new nuclear warheads; that LEPs will use only nuclear components based on previously tested designs, and will not support new military missions or provide for new military capabilities; and that replacement of nuclear components would be undertaken only if anything else fails.

In future warhead modifications, addition of new safety and security features should be limited to those that are critical based on specific threat scenarios on a case-by-case and cost-effective basis. From a safety perspective it would be best if warheads have insensitive high explosives and fire resistant pits, but this may not always be possible without reducing warhead reliability or increasing the need for nuclear testing.

The B61 LEP is already turning into a case study of what not to do. Overly ambitious design changes and additions have exploded the project into a management scandal with an estimated cost hike that has increased from \$4 billion in 2010 to more than \$10 billions. This is unsustainable and the mismanagement actually threatens the mission itself. In order to prioritize the B-2 mission, the administration should reconsider a bare-bone upgrade of the B61-7, which was partly life-extended a few years ago. This would avoid adding the guided-tail kit, a troublesome development that will unwisely and unnecessarily increase the military capability of NATO's nuclear posture and reintroduce a more useable weapon similar to the Air Force's PLYWD design of the early-1990s.

### **Nuclear Infrastructure**

Similar to the B61 LEP, the status of the nuclear production complex is threatened by mismanagement and budget overruns. The Chemical and Metallurgy Research Replacement – Nuclear Facility (CMRR-NF) at Los Alamos and the Uranium Processing Facility (UPF) at Oak Ridge in Tennessee are in such flux that they threaten the nuclear mission itself. Instead of focusing on such gold-plated icon projects, the administration should scale back the ambitions to maintain a project based on the expectation of a significantly reduced nuclear stockpile. This may require significantly rethinking current plans and upgrading existing infrastructure.

### **Conclusion**

In conclusion, I'd say that whatever one might think about nuclear weapons modernization, it is important it is in sync with arms control and disarmament objectives and not appear to be contradicting each other. This inevitably requires constraint. The United States cannot declare that it has invigorated its efforts to reduce and eliminate nuclear weapons and then embark upon a nuclear modernization plan that reaffirms and rebuilds the nuclear Triad and a warhead production complex. Putting an end to Cold War thinking takes more than trimming the nuclear force – it requires changing it.

Thanks for your attention. I look forward to your questions.