



DOE Stockpile Stewardship and Management Plan

DOE PLAN PROMISES ADDITIONAL NUCLEAR REDUCTIONS, BUT FEW COST SAVINGS

The Federation of American Scientists (FAS) and the Union of Concerned Scientists (UCS) have obtained unpublicized sections of the Obama administration's first detailed plan for the future of the U.S. nuclear arsenal and its supporting infrastructure. These two unclassified sections are from the "FY 2011 Stockpile Stewardship and Management Plan," which is part of the Department of Energy's (DOE) proposed fiscal year 2011 budget that was written by the DOE's National Nuclear Security Administration (NNSA).

On July 13 the science organizations released the two sections along with the plan's summary section, which already had been made public. Altogether, the unclassified portions of the document reveal new information about U.S. plans for its nuclear arsenal and infrastructure through 2030. Below are the most significant revelations in the sections, according to FAS and UCS.

The United States Plans Further Reductions in Its Nuclear Arsenal

The plan indicates that the United States currently intends to reduce its nuclear arsenal by 30 to 40 percent from today's total of approximately 5,000 weapons. Reductions begun under the last administration will reduce the arsenal to 4,700 weapons by the end of 2012. In addition, the Obama administration's Nuclear Posture Review (NPR), released in April, indicated that additional weapons now in storage will be retired.

This is consistent with the new plan, which states, "The future NNSA infrastructure will support total stockpiles up to a range of approximately 3,000 to 3,500 ... warheads." That is about twice the limit on the number of strategic weapons permitted by the New START treaty. Of course, the United States could reduce its arsenal to still lower levels through additional negotiated agreements with Russia and other nuclear weapon states.

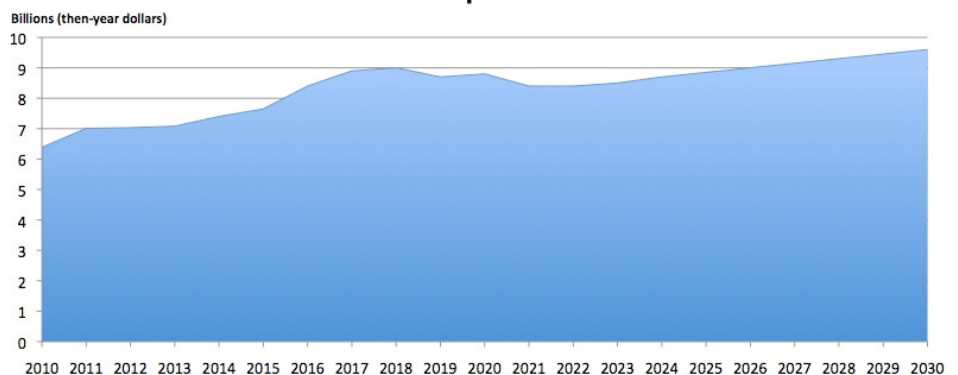
Reductions Will Not Save Much or Reduce Size of Nuclear Complex

According to the plan, once the stockpile drops below a given level, the costs to maintain the weapons and infrastructure are "essentially independent of the size of the stockpile." The plan suggests that even with a stockpile of some 500 warheads, the size and cost of the weapons complex would only be a little smaller than what is proposed for a stockpile of 3,000 to 3,500 weapons. The plan states that to maintain the required nuclear weapons expertise and facilities, a minimal number of nuclear weapons would have to be produced each year as part of the ongoing efforts to extend the lifetimes of existing weapons. It does not specify the number.

Future Nuclear Weapons Spending Detailed

The plan contains details and cost estimates that NNSA has not previously released. The new information (see figure 1 below) shows a significant increase in the annual budget from 2013 to 2022 when several new weapons production, testing and simulation facilities will be built. After this 10-year period, the real budget appears to be flat, with increases consistent with modest rates of inflation. The total budget from 2010 to 2030 is about \$175 billion (in then-year dollars). However, the expenditures could be far greater, since finishing projects on time and on budget

NNSA Nuclear Weapons Costs 2010-2030



Graphics: FAS/UCS, based on NNSA, FY2011 Stockpile Stewardship Management Plan Summary, May 2010, figure S-7, p. 27.

has been a chronic problem for NNSA.

The \$175 billion does not include the costs of maintaining and operating the delivery systems for the weapons, which are covered by the Department of Defense.

Extending Weapon Lifetimes Will Cost Some \$1 Billion a Year After 2014

At any given time during the next 20 years, the weapons laboratories will be working simultaneously on three weapon types to modify them and extend their lifetimes. The plan provides budget details for the first three: the W76 warhead, deployed on submarine-launched ballistic missiles (SLBMs); the B61-3, -4, -7 and -10 bombs, variants of which are deployed on long-range and short-range bombers; and the W78 warhead, deployed on land-based intercontinental-range ballistic missiles. The total cost for these three life-extension program will be more than \$10 billion (in then-year dollars), and the annual cost for the three programs will peak at more than \$1 billion in 2017. The plan states that after 2021, life-extension efforts will cost \$1 billion per year.

The next weapons slated for life extension are the W88 warhead, deployed on SLBMs; the W80-1 warhead, deployed on air-launched cruise missiles carried by long-range bombers; and probably the B61-11 and B83-1 bombs, deployed on long-range bombers. The plan does not provide detailed budget figures for these three

programs; the budget profiles in the figure below are estimates.

All Warheads Will Be Modified

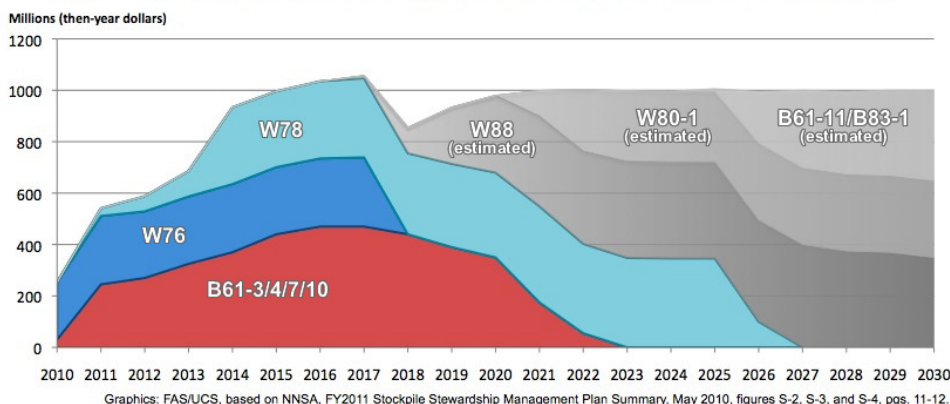
The plan describes nuclear warhead modifications planned as part of the life-extension process, including “vastly improved capabilities for next system arming, fuzing and firing and/or radar componentry.” The arming, fuzing and firing components initiate the detonation of the warhead, and improved capabilities likely would include new security mechanisms to prevent an unauthorized user from detonating the warhead. Radar components are used to detonate the warhead at a specified altitude, and modifications can lead to a weapon with new military capabilities. All warheads also will receive modified safety features, which ensure that plutonium is not dispersed and the warhead does not detonate in the event of an accident. However, such safety modifications can reduce weapon reliability and may be of marginal utility.

A New Approach to Maintain Ability to Resume Explosive Testing

The plan indicates that the United States will adopt a different approach to maintaining its ability to resume nuclear testing if the need arises. Since the United States stopped explosive nuclear testing in 1992, it has maintained its existing testing infrastructure so it could resume testing within a specified amount of time, which has varied from 24 to 36 months. The plan refers to test-readiness investments as “outdated” and states that if the

need for explosive testing arose, such tests would instead rely on “modern capabilities.” More generally, the plan states that the intellectual and physical capacity to resume testing will be maintained through NNSA’s ongoing work. This new approach would leave the United States with an inherent ability to resume testing within the specified time frame, but would no longer rely on maintaining existing equipment at the test sites.

U.S. Projected Nuclear Weapons Life-Extension Costs 2010-2030



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