

Nuclear Weapons Budget Fact Sheet

January 20, 2012

Reducing National Nuclear Security Administration Weapons Spending

On Jan. 5, President Obama and Defense Secretary Panetta unveiled a new military strategy to guide a \$500 billion reduction in defense spending over the next decade. The strategy document states that “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.”¹

The National Nuclear Security Administration (NNSA) plans to spend more than \$88 billion on the U.S. nuclear weapons production complex over the next decade. That’s more than the United States can afford or needs in the 21st century. Below are recommendations for how the United States can save at least \$7 billion over the next decade from two NNSA programs while still maintaining a formidable nuclear force.

1. Cancel the New Nuclear Bomb Plant at Los Alamos

The two-phase Chemistry and Metallurgy Research Replacement (CMRR) project at the Los Alamos National Laboratory (LANL) is designed to replace a building that performs technical analyses on materials, in particular the plutonium used in U.S. nuclear weapons. Phase one, a radiological laboratory, is completed. Phase two, the CMRR-Nuclear Facility, would do materials analysis as well as allow Los Alamos to increase the number of plutonium “pits”—the fissile cores of modern nuclear warheads—the Lab can produce, from the current 10-20 per year to 50-80 annually. CMRR’s estimated construction costs have increased to

nearly \$6 billion.

NNSA proposes to build at the same time the ~\$7.5 billion Uranium Processing Facility (UPF) in Tennessee for nuclear weapons work. But Congress cut the Administration’s FY2012 request of \$300 million for the CMRR to \$200 million and barred any construction activities, including advance site preparation. Congress also required a “contingency plan” for sequencing either the CMRR-NF or the UPF one after the other, and a report “on maintaining a pit manufacturing capability to meet stockpile needs” that could show that the Nuclear Facility is not needed.

Congress should:

- *Insist that NNSA sequence the construction of these facilities.* Building the CMRR and UPF simultaneously would require significant budget increases for NNSA or significant cuts to other programs.
- *Cut funding for design of the Nuclear Facility, which has already cost more than \$250 million but is still only 50% complete.* Design work could be slowed down if the UPF is sequenced first.
- *Continue to bar construction startup* (including major site preparation) until the administration provides credible CMRR baseline costs, which cannot be done until design is 90% complete. Congress should then mandate that NNSA cannot exceed those costs.
- *Await the results of new presidential guidance on nuclear weapons.* The Obama administration is revising the policies that determine the size and structure of U.S. nuclear forces. The NNSA and Congress should make decisions on new facilities after the implications of those decisions have been analyzed.
- *Require an independent plutonium capabilities study* that analyzes whether current missions could be moved to CMRR's already completed \$400 million first phase and LANL's existing plutonium pit production facility, and not build the ~\$5 billion "Nuclear Facility."
- *Require NNSA and the Pentagon to justify increased plutonium pit production* when the United States is reducing the number of nuclear warheads.

A decision **not to build the CMRR-Nuclear Facility could save up to \$5 billion over the next 10 years.** Not expanding plutonium pit production could save tens of billions of dollars over the next half-century.

Background

Current cost estimates for the CMRR are now approaching \$6 billion, nearly ten-fold more than the \$660 million initial estimate the NNSA provided Congress in FY2004. Most of the increased cost is due to building the Nuclear Facility in a complex seismic fault zone between the Rio Grande rift valley and a dormant supervolcano.

The mission of the CMRR-Nuclear Facility is to support increased plutonium pit production. CMRR will focus on "materials characterization" and "analytical chemistry" of special nuclear materials, primarily plutonium. Pit production happens at LANL's PF-4 facility, next to CMRR. The two facilities will be connected via tunnel and share a vault capable of holding six metric tons of plutonium. NNSA explicitly states that producing 50-80 pits per year is achievable

only through building CMRR and upgrading PF-4.

The Case Against the Nuclear Facility

- *U.S. national security does not depend on the CMRR-Nuclear Facility.* According to the 2010 Nuclear Posture Review, new nuclear weapons production facilities "will be put in place to surge production in the event of significant geopolitical 'surprise.'" This increased production capacity is intended to serve as a hedge against a resurgent Russia or an emboldened China. This is outdated, Cold War-era thinking. Both Russia and China would be deterred by an arsenal far smaller than the 5,000 nuclear weapons (with 2,000 deployed) the United States maintains today. Moreover, expanded plutonium pit production will not deter nuclear-armed terrorists, the most likely catastrophic threat our country faces.
- *The United States does not need to produce 50-80 new pits per year.* NNSA first proposed the CMRR while it was developing "Reliable Replacement Warheads" (RRWs) that would have required new pits. In 2008 Congress rejected RRWs; since then NNSA has failed to make a convincing new case why it needs expanded pit production. NNSA's push also began when it believed pits might only last 45-60 years. The latest science indicates pits are good for at least 85-100 years, and probably longer. The 2010 Nuclear Posture Review endorsed the Nuclear Facility but did not mandate increased pit production.
- *The CMRR will not maintain our existing nuclear stockpile.* Current facilities are adequate to maintain the existing stockpile for decades. They have to be, because the CMRR will not be ready to undertake the current round of sustainment work. Seven of the eight warhead types in the stockpile are in or will soon undergo major Life Extension Programs (LEPs) to extend their service life by 30 years. Of those seven, six LEPs will be completed or be well underway by the time the CMRR is operational, in 2024 at the earliest. By then the size of and requirements for U.S. nuclear forces could be significantly reduced.
- *The enormous CMRR provides no new permanent jobs.* Despite its exorbitant cost the CMRR Project will create zero new permanent jobs, instead merely relocating already existing Lab jobs from one location to another. At best, the CMRR-Nuclear Facility will average 410 temporary construction jobs over nine years, or nearly \$15 million per job.

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National Nuclear Security Administration

An aerial photo shows the full extent of construction at the Mixed Oxide Fuel Fabrication Facility (MOX plant) near in Aiken, S.C., in mid-2011.

2. Cancel the MOX Plutonium Fuel Plant at Savannah River

Congress should cancel the Mixed Oxide Fuel Fabrication Facility (the MOX plant) and pursue other disposition options for plutonium. Originally envisioned as a way to reduce quantities of U.S. and Russia weapons-grade plutonium, the initiative has evolved into a massive pork project. The centerpiece of the MOX program is a plutonium-based fuel fabrication facility being built at NNSA's Savannah River Site (SRS) near Aiken, South Carolina, which is part of the U.S. complex of nuclear weapons facilities.

By canceling the MOX plant, the United States could save an estimated \$2 billion over the next 10 years, plus significant additional operating costs, while reducing the chances that weapons-usable nuclear material could fall into the wrong hands.

Background

The MOX plant is the highest profile and most

expensive component of efforts to significantly reduce U.S. and Russian surplus military plutonium from dismantled nuclear weapons and other sources. The idea is to blend some 34 tons of surplus U.S. plutonium with uranium to use as "mixed oxide" (MOX) fuel in nuclear reactors. Russia pledged repeatedly to undertake a similar program, but has failed to do so.

Reasons to Cancel the MOX plant

- Funding the MOX program puts other, more effective non-proliferation programs at risk, such as the Global Threat Reduction Initiative. NNSA can expect essentially a flat budget for the next few years, even though it is planning several costly construction projects. The MOX program is one of the most expensive, with construction costs for all facilities at around \$9.7 billion. The construction cost of the MOX fuel fabrication facility at the Savannah River Site alone



US Senators Lindsey Graham (SC), Jim DeMint (SC), Saxby Chambliss (GA), and Johnny Isakson (GA) visit the MOX project near Aiken, S.C., on May 1, 2009.

is roughly \$5 billion, a significant increase over the initial cost estimate of \$1 billion.

The FY 2012 House Energy and Water Appropriations report warns that MOX puts other important nonproliferation programs in danger, saying, “The threat posed by rising construction costs to the progress of core nonproliferation activities remains a major Committee concern.”

- The MOX program, beset by delays and unquantified risks, aims to create a product that no one wants. Because it uses plutonium, MOX fuel is more expensive and hazardous to fabricate, transport, store, and use than the standard all-uranium fuel currently used by U.S. nuclear reactors. Since Duke Energy withdrew from the program in 2008, NNSA has been unable to recruit another U.S. utility to accept MOX fuel.

The Senate Energy & Water Appropriations report notes “wavering interest and lack of firm commitments from U.S. utilities to irradiate MOX fuel in their reactors” and states that the “Committee remains concerned with the overall management of the U.S. plutonium disposition program.” Even if any reactor operators agree to accept MOX fuel in the future, licensing requirements as well as a lengthy testing period to certify MOX performance will create further delays and scheduling problems.

Finally, the use of MOX fuel can increase health and safety risks as it can negatively affect safe reactor operation. An accident involving MOX fuel would be more severe than one involving uranium fuel.

- Russia’s program fails to meet nonproliferation goals. The MOX program was devised in the 1990s as a

nonproliferation program in conjunction with Russia. NNSA has stated that MOX was chosen over other disposition paths to satisfy Russia, but Russia halted its program to use MOX in its light water reactors. Russia is currently pursuing MOX use in “breeder” reactors that can be used to make more plutonium than they burn, undermining the entire justification for the program. The U.S. should not continue to pour billions of dollars into an effort that will leave Russia with an expanded plutonium production capability.

- The MOX “cure” threatens to be worse than the “disease.” Conversion of plutonium to MOX fuel involves many stages of transportation and bulk processing, providing myriad opportunities both in the United States and Russia for theft of the material. Yet to cut costs and make MOX more palatable for utilities, NNSA has encouraged the Nuclear Regulatory Commission (NRC) to reduce safeguards and security requirements on MOX fuel. The NRC has already weakened security requirements for MOX fuel storage at reactor sites and is considering further security and safeguards rollbacks for MOX. Weakening security at home sends the wrong signal to Russia and undermines one of the chief goals of plutonium disposition—to reduce the likelihood of diversion or theft of plutonium.

- There are sensible, less-expensive alternatives to MOX. The National Academy of Sciences has looked at options for disposing of excess plutonium and identified an alternative known as “immobilization,” which entails mixing the plutonium with radioactive waste and imbedding it in large, heavy rods of glass or ceramic, and then burying it along with highly radioactive wastes. NNSA determined that the immobilization would be cheaper than MOX. Despite this, the United States proceeded with the MOX option because it believed that Russia would only be interested in this option.

ENDNOTES

1. Sustaining U.S. Global Leadership: Priorities for 21st Century Defense, Department of Defense, January 2012, p. 5.

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