

Nonproliferation's new soldier

How the Reliable Replacement Warhead Program will bolster global security.

IN MARCH 2007, THE ENERGY and Defense departments jointly announced the selection of the Lawrence Livermore National Laboratory/Sandia National Laboratories design team to lead the development of the reliable replacement warhead (RRW). The RRW Program is examining the feasibility of replacing the warheads in today's aging stockpile, which was developed and fielded during the Cold War. Relaxing Cold War design constraints that sought maximum explosive yield in a minimum size and weight package will allow for warhead designs that are easier and less costly to manufacture; are safer and more secure; eliminate environmentally dangerous materials; and increase design margins, thus ensuring long-term confidence in warhead reliability without nuclear tests.

RRW offers a means to achieve a much more efficient, responsive, smaller, and, we believe, cheaper nuclear weapons research, development, and production infrastructure, providing opportunities for further stockpile reductions. The United States has not designed and developed a modern nuclear warhead in more than two decades, so RRW also provides a unique

opportunity to train the next generation of nuclear weapons designers and engineers.

Despite its benefits, opponents of the RRW Program argue that it will upset the nonproliferation regime and provide incentives for nuclear weapon states to upgrade their arsenals, or for non-weapon states to seek nuclear capabilities. Other opponents suggest that the program could overshadow and undermine ambitious new initiatives, such as providing assured access to nuclear fuel and spent fuel "take back" for states not possessing enrichment or reprocessing plants, to strengthen that regime. To answer

these arguments, it is useful to examine the proliferation implications of U.S. nuclear modernization for existing nuclear powers, rogue states, terrorists, and states that have forsworn nuclear weapons under the Nuclear Non-Proliferation Treaty (NPT).

For nuclear powers, such as Russia and China, or even India and Pakistan, U.S. research and development on RRW designs that could increase confidence in stockpile safety and reliability under a test moratorium—without adding new military capabilities—would be unlikely to generate a reaction. These countries base their nuclear programs

on their own perceived security or political needs, not on the specifics of U.S. nuclear weapons development. As a case in point, the Pentagon said nothing when Russian President Vladimir Putin announced that Russia was developing a hypersonic cruise missile to penetrate U.S. ballistic missile defenses. Because U.S. missile defenses are not directed against Russia, why would U.S. officials be alarmed if Russia invests substantial resources in this system? Although not yet allies, the United States and Russia are not the adversaries they were during the Cold War, when one side's weapons modernization cycle generated a counterreaction.

A more compelling concern involves efforts to prevent rogue states and terrorists from acquiring nuclear weapons and delivery systems. U.S. nuclear modernization will not increase incentives for terrorists to acquire such weapons—their desire to kill thousands of innocent civilians or destroy symbols of national power and culture are already high and unrelated to U.S. nuclear or conventional military programs.

Nor is RRW likely to have any impact on rogue states, whose proliferation marches forward independently of U.S. nuclear programs. During the last decade, the United States and Russia significantly reduced their nuclear weapon stockpiles and reduced the alert levels of their nuclear forces. The United States has not tested nuclear weapons, has not produced nuclear materials for weapons, and has completed very little nuclear modernization. There is no evidence that, as a result, North Korea or Iran slowed down covert programs to acquire nuclear weapons. In fact, those programs accelerated during this period, culminating, in the case of North Korea, with a nuclear test in October 2006.

North Korea and Iran quite probably seek nuclear weapons to discourage the United States from defending its interests and allies in each of these regions. Their incentives to pursue

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nuclear weapons capabilities are shaped more by U.S. advanced conventional weapons and the demonstrated will to employ them to great effect in Bosnia, Kosovo, Afghanistan, and during both wars with Iraq, than by anything it is doing in the nuclear weapons arena.

The United States is concerned about how perceptions and misperceptions about its nuclear policies could affect international support among its NPT partners. We need to do a better job of explaining how the RRW strategy has positive implications for nonproliferation.

These warheads, by design, would not provide a new role for nuclear weapons or new military capabilities, but would help sustain the military capabilities of the existing U.S. nuclear arsenal. Because these warheads would have less stringent design margins, and be less sensitive to incremental aging effects, they would reduce the possibility that the United States would need to conduct a nuclear test to diagnose or remedy a stockpile reliability problem. This supports ongoing U.S. efforts to dissuade other nations from conducting nuclear tests.

In fielding RRWs, the United States will not increase the size of its stockpile. These warheads will replace existing warheads on, at most, a one-for-one basis. Indeed, RRW will offer opportunities for a much smaller nuclear stockpile. Once a functioning production complex, enabled by RRW, demonstrates that it can produce replacement warheads on a timescale in which geopolitical threats could emerge—or respond in a timely way to technical problems in the stockpile—then many spare warheads can be eliminated, further reducing the nuclear stockpile.

The RRW strategy also increases the dismantlement rate for retired warheads, ensuring that other nations do not misperceive our program as restarting the arms race. As U.S. efforts on RRW reinforce the U.S. commitment to a nuclear test

moratorium, so too do these efforts strengthen the U.S. commitment to a smaller stockpile.

A safe, secure, and reliable U.S. nuclear deterrent, credibly extended to allies, supports nonproliferation because allies that are confident in U.S. nuclear guarantees will not be motivated to develop and field their own nuclear forces. This nonproliferation role of U.S. nuclear weapons is often

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underestimated—the nuclear programs of North Korea and Iran have made U.S. nuclear guarantees to allies such as Turkey, South Korea, and Japan take on renewed emphasis.

Critics who charge that U.S. nuclear programs harm nonproliferation often cite an alleged lack of U.S. progress in fulfilling its obligations under Article VI of the NPT. In 1995, when the NPT was indefinitely extended, the United States reiterated its commitment under Article VI to work toward halting the arms race and to the ultimate goal of eliminating nuclear weapons and general and complete disarmament.

The nuclear arms race has, in fact, been halted. Remarkable progress has been made in reducing reliance on nuclear forces in U.S. national security strategy. The United States has been reducing its nuclear forces and nuclear weapons stockpile in a consistent fashion through both unilateral and bilateral initiatives, and it is working cooperatively with allies and partners to further reduce nuclear threats.

The record speaks for itself, but a few recent accomplishments are worth highlighting: The 2002 Moscow

Treaty will reduce deployed strategic warheads to between 1,700 and 2,200 by December 2012, down from about 5,300 at the end of 2003, and 3,696 at the end of 2006. These levels are far lower than many thought possible just a few years ago. In May 2004, President George W. Bush directed a large reduction in the total nuclear stockpile. By 2012, it will be nearly one-half its 2001 size—the smallest

stockpile since the Eisenhower administration—representing a four-fold reduction since the end of the Cold War. The United States announced in November 2005 that it will remove, in future decades, up to 200 metric tons of highly enriched uranium (HEU) from further use as fissile material in nuclear warheads.

Last summer in Geneva, the United States proposed a global treaty that would eliminate production of plutonium and HEU for use in nuclear warheads. This record of action on Article VI, coupled with U.S. progress during the last two decades in securing warheads and eliminating excess fissile materials worldwide, demonstrates strong U.S. adherence to its nonproliferation commitments.

Although this brief analysis is by no means exhaustive, it would be fair to conclude that modest U.S. nuclear weapons modernization involving RRW, centered on duplicating the military capabilities provided by existing warheads, is unlikely to stimulate proliferation or hamper collective international efforts to strengthen the nonproliferation regime. The burden of proof rests on those who argue the contrary. ❁