SENATE ARMED SERVICES COMMITTEE
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Sidney D. Drell
Stanford University
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The existing international regime, grounded in the nuclear Non-Proliferation Treaty for preventing new nuclear weapon states, reducing existing nuclear arsenals, and controlling the spread of nuclear technology and material, is seriously endangered.

The spread of technology, particularly uranium enrichment and plutonium reprocessing technology for civilian energy, creates the danger of more states with nuclear arms and fissile material. In turn, it provides more opportunities for theft or sale to terrorist groups or other societal units unrestrained by accepted norms of civilized behavior, thereby increasing the risk that nuclear weapons will be used.

Beyond North Korea and Iran more than 40 nations already have taken substantial steps forward in nuclear technology. Even more have indicated interest in developing such technology for civilian power. And once you can enrich uranium for a civilian power reactor – you are well on the way. Without a change of course, the United States and the world soon will be compelled to enter a new nuclear era that will be more precarious and economically costly than was Cold War deterrence.

During the Cold War, nuclear weapons were essential to maintaining international security because they were a means of deterrence. Sixteen years ago the Cold War ended with the demise of the Soviet Union, and with it, the doctrine of mutual Soviet-American deterrence became obsolete. Deterrence continues to be a relevant consideration for many states with regard to threats from other states. But reliance on nuclear weapons for this purpose is becoming increasingly hazardous and decreasingly effective as the prospect of nuclear proliferation grows increasingly ominous.

Nevertheless U.S. and Russian nuclear stockpiles remain bloated. In the year 2012, more than 20 years after the collapse of the Soviet Union, the United States and Russia, each, will still have approximately 5000 nuclear bombs and warheads in their arsenals, close to two thousand of which will be deployed on ballistic missiles, many on prompt launch procedures presenting unnecessary risks of an accidental or unauthorized launch. Why are we still retaining such large nuclear arsenals as a legacy of the Cold War? What are these weapons for?

This situation presents us with two major challenges – and opportunities. The first is to develop a strategy for dealing with the world as it is today, starting with steps to prevent the further spread of nuclear weapons. The second is to rekindle the bold vision that President Reagan and General Secretary Gorbachev brought to their remarkable summit at Reykjavik in 1986: ridding the world of nuclear weapons and escaping from the nuclear deterrence trap. Although they failed in the end, they did succeed in turning the arms race on its head. They initiated steps leading to significant reductions in deployed long- and intermediate-range nuclear forces, including the elimination of an entire class of threatening missiles – the INF missiles in Europe.

Can we rekindle their vision? Can we escape from the nuclear deterrence trap before it is too late?

To face the first challenge, and deal with the world as is, we must save and strengthen the nonproliferation regime based on the NonProliferation Treaty of 1970. In view of the continuing spread of nuclear weapons technology, the NPT will need to be supplemented with intrusive new inspection rights for monitoring compliance with its provisions and

detecting covert efforts by a would-be proliferator to evade them. Important agreements have already been reached to bring such provisions into practice.

It is not necessary to look abroad for challenges to the present nonproliferation regime. Nonnuclear weapon states repeatedly emphasize their concerns about the ongoing weapons programs of the nuclear powers. We are urged to honor the NPT by formalizing the current moratorium on underground bomb testing into a Comprehensive Test Ban Treaty; reducing our reliance on nuclear weapons, and substantially decreasing their numbers more rapidly. Recent efforts by Washington to build two new nuclear warheads for new military missions were viewed widely as counter to global efforts to strengthen the nonproliferation regime. One new warhead was a high-yield bunker buster for destroying deeply buried, hardened underground targets, and the second was a very low yield "new concept" weapon to destroy deadly biological and chemical agents stored in shallow underground bunkers without dispersing them. Fortunately both proposals were rejected after several years of debate in Congress. Rejection was based on a judgment that benefited from careful independent technical analyses that concluded their potential military value was marginal and less compelling than their likely harmful impact on the nonproliferation regime and U.S. overall national security. It was also a ringing rejection of the dangerous idea of lowering the threshold for using nuclear weapons in limited military strikes.

Currently Congress is debating whether or how to proceed with a Reliable Replacement Warhead Program designed to transform both our aging nuclear infrastructure and the weapons in our current stockpile. There is a need to modernize parts of the complex that date back to World War II for reasons of safety, efficiency, and flexibility. As long as the United States has nuclear weapons, we need to be able to maintain the warheads in the shrinking stockpile to be safe and reliable. But a clear decision on our long term nuclear policy goals is needed in order to decide on the appropriate size and scope of the new complex.

This calls for a fresh look at the role of nuclear weapons in U.S. defense planning. The United States and Russia have now officially adopted a policy of cooperation against the new threats, faced by both nations, of terrorists and unstable or irresponsible governments acquiring nuclear weapons. This replaces the former adversarial relationship of nuclear deterrence based on mutual based destruction. As stated in the Joint Declaration of Presidents Bush and Putin of November 13, 2001: "The United States and Russia have overcome the legacy of the Cold War. Neither country regards the other as an enemy or threat." What then are the anticipated missions and targets for the thousands of nuclear warheads remaining in their arsenals?

Ambassador James Goodby and I analyzed this question of "What Are Nuclear Weapons For" in today's world in a recent report[1] that I have submitted for the record. Based on our analysis of the present and prospective threats that define missions for U.S. nuclear weapons we conclude that the strategic arsenal required by the United States can be reduced to considerably lower numbers. We recommend as a first step reduction to a U.S. force structure of 500 operationally deployed nuclear warheads, plus 500 in a responsive force. The United States and Russia should cooperate to achieve this in the coming decade, engaging the other nuclear powers for proportionate reductions.

As to the transformation of the weapons with the stated goal to increase confidence in their long term reliability, safety, and use control, we still face a daunting technical challenge to determine whether new designs to meet those ambitious goals can be certified and

[1] S. Drell and J. Goodby: "*What Are Nuclear Weapons For*?" (Report for the Arms Control Association, April 2005). It is published on their website and reprinted in "*Nuclear Weapons, Scientists, and the Post-Cold War Challenge*" by S. Drell (World Scientific Press, Singapore, 2007).

deployed without underground explosive testing. I don't believe that, at present, we know the answer to that question. But I do believe it is worthwhile to try to answer. A sensible approach to it should:

1. Proceed carefully with research on modifications or a new design that meet the stated requirements, before moving ahead to development and manufacture. Necessary are detailed analyses subject to fully independent scrutiny to determine whether it is possible to gain confidence and build a strong consensus that the proposed changes are mutually compatible and have the appropriate test pedigree from our previous work. It is not a question of the individual components working, but of the system—in fact a system of systems—being reliable.
2. Recognize that there is no pressing urgency in implementing changes—the legacy stockpile is strong—the pace of the work should not consume human and budgetary resources to the extent of savaging the important ongoing and highly successful Stockpile Stewardship and Life Extension Program.
3. Recognize the importance of being clear about the limited goals of what we are doing so as to avoid potentially harmful impacts on the nonproliferation goals of this country and beyond, globally. Concerns by the many nonnuclear weapon states, whose cooperation we require, about the seriousness of the commitment of the nuclear powers to limit their nuclear efforts in accord with the NPT cannot be ignored, denied, or dismissed as irrelevant. They registered such concerns strongly in negotiations at the UN on continuing the NonProliferation Treaty into the indefinite future, and called on the nuclear powers to restrain their nuclear programs and ratify a CTBT.

An important action to address these concerns would be a commitment by the United States to face the second challenge: to rekindle the vision of Reykjavik and develop a strategy to achieve it. This was addressed at a conference that George Shultz, who participated at Reykjavik as President Reagan's Secretary of State, and I organized at Stanford University's Hoover Institution this past October marking the 20th anniversary of that remarkable summit. Ever since Hiroshima at the dawn of the nuclear era a number of studies and conferences have addressed the challenge of ridding the world of nuclear weapons. Renewed interest in achieving this goal has been generated by the realization that the world is approaching the precipice of the new and even more dangerous nuclear era with the spread of nuclear technology that is threatening the nonproliferation regime. Moreover at present we lack a global strategy and vision commensurate with the tremendous dangers ahead.

At the Stanford/Hoover Conference we reviewed the impact of Reykjavik and its relevance for today's world. And we formulated what we considered a set of practical steps to define a path for accomplishing the goal of ridding the world of nuclear weapons.
Our conclusions and recommendations were summarized in a recent article that appeared in the Wall Street Journal[2] on January 4, 2007.

First and foremost, intensive work with leaders of the countries in possession of nuclear weapons will be required to turn the goal of a world without nuclear weapons into a joint enterprise, and create a working mechanism for accomplishing this goal. Such a joint enterprise would lend additional weight to efforts already under way to avoid the emergence of a nuclear-armed North Korea and Iran.

Specific actions were also proposed:

[2] "A World Free of Nuclear Weapons" signed by George Shultz, William Perry, Henry Kissinger, and Sam Nunn, and endorsed by the conference participants who also signed on.

- *Changing the Cold War posture of deployed nuclear weapons to increase warning time and thereby reduce the danger of an accidental or unauthorized use of a nuclear weapon.*

- *Continuing to reduce substantially the size of nuclear forces in all states that possess them.*

- *Eliminating short-range nuclear weapons designed to be forward-deployed.*

- *Initiating a bipartisan process with the Senate, including understandings to increase confidence and provide for periodic review, to achieve ratification of the Comprehensive Test Ban Treaty, taking advantage of recent technical advances, and working to secure ratification by other key states.*

- *Providing the highest possible standards of security for all stocks of weapons, weapons-usable plutonium, and highly enriched uranium everywhere in the world.*

- *Getting control of the uranium enrichment process, combined with the guarantee that uranium for nuclear power reactors could be obtained at a reasonable price, first from the Nuclear Suppliers Group and then from the International Atomic Energy Agency (IAEA) or other controlled international reserves. It will also be necessary to deal with proliferation issues presented by spent fuel from reactors producing electricity.*

- *Halting the production of fissile material for weapons globally; phasing out the use of highly enriched uranium in civil commerce and removing weapons-usable uranium from research facilities around the world and rendering the materials safe.*

- *Redoubling our efforts to resolve regional confrontations and conflicts that give rise to new nuclear powers.*

- *Addressing the requirements for effective measures to impede or counter any nuclear related conduct that is potentially threatening to the security of any state or peoples.*

Reassertion of the vision of a world free of nuclear weapons and practical measures toward achieving that goal could have a profoundly positive impact on the security of future generations. Without the bold vision, the actions will not be perceived as fair or urgent. Without the actions, the vision will not be perceived as realistic or possible.