



**Statement before the
House Armed Services Committee
Subcommittee on Strategic Forces**

***“FUTURE OPTIONS FOR THE U.S. NUCLEAR
DETERRENT – VIEWS FROM PROJECT
ATOM”***

A Testimony by:

Dr. Clark A. Murdock

Senior Adviser, International Security Program
Center for Strategic and International Studies (CSIS)

November 3, 2015

2118 Rayburn House Office Building

Chairman Rogers, Ranking Member Cooper, and distinguished members of the committee, I appreciate the opportunity to testify before you today. The scope of this hearing—to discuss the future options for the US nuclear deterrent as explored in our Project Atom report—is one I find both important and timely. Today, I will briefly describe Project Atom's methodological approach and present my principal recommendations for addressing the current deficit in national security attention paid to the continue relevance and importance of U.S. nuclear strategy and force posture and end by allowing the think tank team leaders to speak for themselves.

The object of the Project Atom study effort, which was made possible by the Smith-Richardson Foundation, was to conduct a zero-based, "blue-sky" review of U.S. nuclear strategy and force posture in the 2025-2050 time period. The CSIS study team took a competitive strategies approach and recruited three independent think tank teams -- the Stimson Center, the Center for a New American Security and the National Institute for Public Policy (NIPP) -- to participate and whose representatives are here today. The final report, entitled *Project Atom: A Competitive Strategies Approach to Defining U.S. Nuclear Strategy and Posture for 2025-2050*, was released by the International Security Program (ISP) of the Center for Strategic and International Studies (CSIS) in May 2015 and has been entered into the record in its entirety.

Project Atom -- Methodological Approach

This analytic effort, conducted by the CSIS study team and the independent think teams, was unconstrained by current strategy (e.g., reducing the role of nuclear weapons in U.S. strategy) and by current policy (e.g., the prohibition against new nuclear weapons or new nuclear capabilities). However, the analysis was conducted within a common framework that was developed in a series of working group meetings consisting of outside experts, think tank team participants and the CSIS study team:

- The CSIS study team drafted papers on the future security environment (both the 2030+ "Likely Future" and several "Alternative Worlds"), technological possibilities for nuclear weapons in 2025-2050 and possible adversary nuclear strategies. Once revised after working group discussion, these papers formed the basis for the "framing assumptions" for the think tank papers and included in the final report as appendices.
- Each think tank presented a detailed statement of its views, which were reviewed a daylong working group session and are also included in the final report as appendices.

As the Project Atom study director, I drafted a recommended nuclear strategy and posture, which represented my best judgment and was not intended to integrate or synthesize the think tank papers, reviewed it with the working group and consulted with additional experts as I drafted the final report. Although I found the competitive strategies approach utilizing external (to CSIS) think tank teams and experts extremely helpful and I am grateful for their participation in the study effort, I am solely responsible for the views expressed in the main text of the final report and those I present here today.

Preparing for a More Proliferated World

My views on the 2030+ "Likely Future" were considerably more pessimistic than several other Project Atom participants and led me to adopt an "assumed future" as the basis for the recommended 2025-2050 U.S. nuclear strategy and posture. My "assumed future" is based on two propositions:

1. The dynamics of the 2025-2050 security environment will cause further nuclear proliferation -- perhaps not to the 18 nuclear powers envisioned in an alternative future, but higher than the projected 9-to-11 nuclear powers (the current nine plus Iran and Saudi Arabia).
2. The credibility of U.S. extended nuclear deterrence, as well as the assurance that U.S. allies and friends derive from it, will decline significantly, in part because of the failure to prevent further nuclear proliferation.

A major stimulus for a faster rate of nuclear proliferation is U.S. conventional superiority. This causes non-nuclear nation-states (such as North Korea, Iran, Iraq, Syria and Libya) to pursue nuclear weapons as a counter or offset to U.S. military prowess. It also leads nuclear-armed states with interests in opposition to the United States (Russia, for sure, and perhaps China) to increase their reliance on nuclear weapons, much in way that the United States did to offset Warsaw Pact conventional superiority in the 1950s. The value of nuclear weapons as a "trump card" for negating U.S. conventional power was enhanced by the U.S. invasion of Iraq in 2003 to prevent Saddam Hussein from acquiring nuclear weapons. If the United States evidently believes that it could have been deterred by a nuclear-armed Iraq, why would a non-nuclear "regional rogue" not want one?

More nuclear-armed regional adversaries (to the U.S. and its allies) and increased reliance on nuclear weapons by major powers in competition with the United States will lead U.S. non-nuclear allies to want more, not less, U.S. extended nuclear deterrence and assurance. However, the credibility of those American security commitments, both to its adversaries and its allies, will have been eroded by the same factors that had led to the increased demand, namely the failure to prevent further proliferation. It is my belief that if the United States makes plans today for a more highly proliferated world in the future, it improves its preparedness for a world that could happen but makes it less likely that nuclear proliferation in the Middle East, which I take as given, will spread to Northeast Asia, Europe and elsewhere. This may seem paradoxical, to be sure, but paradoxes seem to be endemic to any nuclear age.

New Nuclear Weapons Needed for Recommended "Measured Response" Strategy

In "the second nuclear age," potential U.S. adversaries are thinking through how they might actually employ a nuclear weapon, both early in a conflict and in a discriminate manner, to get the United States to "back off" in a conflict. U.S. nuclear forces were designed for a global conflict involving the exchange of thousands of high-yield weapons, not limited exchanges of

low-yield weapons. Since most U.S. nuclear response options are large, "dirty," and inflict significant collateral damage, the United States might be "self-deterred" and not respond "in kind" to discriminate nuclear attacks. The United States needs discriminate nuclear options at all rungs of the nuclear escalation ladder to make the nuclear option unattractive to its opponents.

"Coupling" U.S. security to the security of its allies was always a huge challenge during the Cold War. Although U.S. nuclear strategy changed from massive retaliation to flexible response, it was the presence of 7,000 U.S. nuclear weapons in Europe that ensured that any major conflict in the European region would escalate rapidly to nuclear war. In a similar manner, the U.S. deployed almost a thousand nuclear weapons on the Korean peninsula (and about 3,000 non-strategic weapons in the Pacific region) to underwrite extended nuclear deterrence there. At a time when the Soviet Union posed an urgent, existential threat, forward-deployed U.S. nuclear weapons, along with over 300,000 troops, encircled "the East" and kept the Cold War cold.

The nuclear strategy being recommended here is called "Measured Response." This is not a new strategy; it is grounded in the U.S. strategy of escalation control that evolved as the U.S. adopted its flexible response strategy. It's about ensuring that there are no gaps in U.S. nuclear response options that would prevent it from retaliating proportionately to any employment of a nuclear weapon against the United States and its allies. U.S. conventional superiority lowers the nuclear threshold because it tempts conventionally weaker adversaries to an early (rather than as a last resort) employment of a nuclear weapon in order to avoid adverse results at the conventional level. By having a robust set of proportionate nuclear responses, the United States raises the nuclear threshold by reducing the attractiveness of nuclear escalation to its opponents.¹

As it shapes its nuclear forces for coping with 2025-2050 realities, the United States need to address its inferiority (with Russia) in non-strategic nuclear forces (NSNF, but also known as "tactical nuclear weapons" or TNWs) by developing a robust set of discriminate nuclear options and forward-deployable nuclear weapons. Deterring regional adversaries from "going nuclear" requires credible nuclear responses to their nuclear attack options. Forward deploying a robust set of discriminate nuclear response options conveys the message that the United States will "respond in kind" and proportionately to nuclear attacks upon its allies. The credibility of that message is reinforced because the U.S. homeland would not be engaged in the U.S. response to a nuclear attack on a regional ally, which leaves the burden on the regional aggressor to escalate to the level of "homeland exchanges." The price, however, for this more credible U.S. "nuclear umbrella," is the ally's willingness to host U.S. nuclear weapons. This is what constitutes "nuclear burden sharing" in 2025-2050.

¹ It should be noted that this Measured Response nuclear strategy meets a requirement established in current defense strategy. The *2014 Quadrennial Defense Review Report* states: "Our nuclear deterrence is the ultimate protection against a nuclear attack on the United States, and through extended deterrence, it also serves to reassure our distant allies of their security against regional aggression. It also supports our ability to project power by communicating to potential nuclear-armed adversaries that they cannot escalate their way out of failed conventional aggression."

The two primary missions for U.S. nuclear weapons are deterrence and extended deterrence, and the future force should be structured accordingly. In order to execute its Measured Response strategy, the nuclear forces both for deterrence and extended deterrence should have low-yield, special-effects (low collateral damage, enhanced radiation, earth penetration, electromagnetic pulse, and others as technology advances) options that can respond proportionately at the lower end of the nuclear continuum.

U.S. nuclear forces at the strategic level consist of *Ohio*-replacement class submarines, Minuteman III ICBMs (or a follow-on ground-based strategic deterrent [GBSD]) and B-52s and B-2s (and a new nuclear-capable bomber at some point), is the highly survivable, assured destruction force that is the foundation on which U.S. nuclear deterrence (and national power, for that matter) resides. This is the "strategic triad" that deterred the Soviet Union during the Cold War and it provides the United States with its "nuclear shadow."

- Discriminate employment options, delivered both by gravity bombs and a new cruise missile, would be provided by the same suite of air-delivered discriminate warheads used for extended deterrence.

U.S. nuclear forces at the extended deterrence level consist of forward-based and rapidly deployable dual-capable aircraft that would enable both permanent and temporary "coupling" of the U.S. nuclear deterrent to host-nation security.

- Dual-capable F-35As (based on land) and F-35Cs (based on carriers) would provide visible manifestations of U.S. extended deterrence and allied burden sharing.
- Discriminate employment options would be provided by a suite of low-yield, special-effects warheads, including possibly a smaller, shorter-range cruise missile that could be delivered by F-35s.

In this recommended 2025-2050 nuclear postures, bombers serve as an all-purpose hedge force that can enable, complement, and hedge for the three "legs" (SLBMs, ICBMs and F-35s). They provide extended-deterrence presence and discriminate nuclear options in regions where there are no forward-based or deployed F-35s. They can also provide weapons and mobility to deploying F-35As. In its traditional role as the first member of the strategic triad, bombers are the most flexible leg and can be used for signaling.

The time frame 2025-2050 is too far into the future to project specific numbers. However, the following are offered as guidelines for sizing the future U.S. nuclear force:

- Maintain rough parity with Russia.
- Maintain nuclear superiority over China.

- Maintain sufficient capability to cope simultaneously with nuclear-armed "regional rogues."
- Maintain a smaller stockpile, which is enabled by a responsive infrastructure.

The capabilities envisioned for this recommended nuclear posture include weapons intended to deter discriminate nuclear attacks at the lower end of the nuclear continuum; forward-based and forward-deployable delivery systems intended for extended deterrence, and assured destruction weapons that have intercontinental range, larger payloads, and are deployed in numbers sufficient to ensure stability and survivability. These are the right capabilities for nuclear deterrence in the twenty-first century because they counter the "nuclear offset" that U.S. adversaries might adopt for coping with U.S. conventional superiority.