BENEFITS AND RISKS OF CONTINUING U.S. NUCLEAR REDUCTIONS

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Congressman Rogers, Congressman Cooper and other distinguished members, it's an honor and a pleasure to present testimony before this committee. Thank you for inviting me.

For purposes of transparency on the matter of conflict of interest, I want to report that in all my professional life outside of U.S. government employment, I have never accepted any government or corporate funding for any of my research, analysis, or publications.

My bottom-line judgment is that continuing U.S. nuclear reductions, even cuts deeper than expected in the next phase, would produce substantial benefits and carry no risks.

In the May 2012 Global Zero Commission report issued by Gen. (ret.) James Cartwright and others including Senator Chuck Hagel, a force consisting of 900 total U.S. nuclear weapons in ten years down the road – an 80 percent reduction

from the current U.S. stockpile -- was deemed more than adequate to meet strategic requirements.[1]

A force of this size could support extensive counterforce as well as countervalue operations. As Gen. (ret.) Cartwright puts it: "It would not be a small nor humble force designed for minimal deterrence, it would not entail a radical shift in targeting philosophy away from military targets to population centers, and it is not a city-busting strategy. On the contrary, it would hold at risk all the major categories of facilities in all countries of interest to include the diverse sets of nuclear/WMD forces and facilities, top military and political leadership, and war-supporting industry. It would fulfill reasonable requirements of deterrence vis-à-vis every country considered to pose a potential WMD threat to the United States."

If this 900-weapon arsenal were assigned targets according to Cold War targeting principles, the following illustrative categories of targets and warhead assignments would be possible: Russia: WMD (325 warheads including 2-on-1 strikes against every missile silo), leadership command posts (110 warheads), war-supporting industry (136 warheads). Moscow alone would be covered by eighty (80) warheads. China: WMD (85 warheads including 2-on-1 strikes against every missile silo), leadership command posts (33 warheads), war-supporting industry (136 warheads). North Korea, Iran, and Syria: Each country would be covered by forty (40) warheads.

These numbers substantially exceed the self-reported number of nuclear explosions on urban centers and high-level command posts that would effectively deter the only nations (Russia and China) possessing nuclear arsenals that technically pose existential threats to the United States. According to a former senior general in the Russian strategic forces, U.S. nuclear retaliation against only a handful of Russian cities would cross the threshold of unacceptable damage in the

[1] *Global Zero Nuclear Policy Commission Report: Modernizing U.S. Nuclear Strategy, Force Structure, and Posture,* May 2012. http://www.globalzero.org/files/gz_us_nuclear_policy_commission_report.pdf

view of Russia's top political and military leadership. U.S. retaliatory capability would be orders of magnitude greater than this. He also reported that a U.S. strike by 110 warheads on the major Russian command posts would pose a decapitation threat that would effectively underwrite deterrence from a military standpoint.

Also, an arsenal of 900 U.S. weapons would vastly exceed the size of the nuclear arsenals fielded by America's actual contemporary adversaries (namely, North Korea with less than 12 weapons; Iran with zero; Syria with zero).

In short, although an arsenal of 900 total weapons would represent a whopping eighty (80) percent reduction from today's level, it would still possess enormous destructive power, far more than necessary to impress any potential rational foe. For the irrational foe, such as fanatical terrorists, the level of American nuclear armaments would make no difference at all. Our tool of choice to deal with suicidal terrorists is special operations forces, not nukes.

Why are such deep cuts possible, and what are the benefits?

<u>First</u> and foremost, twenty-five years after the end of the Cold War, the need for large nuclear arsenals has greatly diminished. Mutual assured destruction (MAD) is no longer the cornerstone of U.S.-Russian geo-strategic and political relations. The requirements of deterrence are obviously much lower between countries that are no longer enemies and that no longer believe either side intends to attack the other.

The two sides continue to target each other in the comprehensive technical manner described earlier, but the decline of mutual nuclear threat in our primary relationship has enabled our two countries to achieve unprecedented levels of cooperation and mutual benefits in a multitude of areas ranging from sanctioning Iran and North Korea for their nuclear transgressions, to securing 'loose nukes' in Russia, to enabling NATO supplies to travel overland through Russia to

Afghanistan. It has also enabled the former nuclear adversaries to cut their nuclear stockpiles by seventy-five (75) percent since the Cold War's end. However, the legacy arsenals are still very large and redundant. There exists ample room for further cuts.

<u>Second</u>, reducing nuclear stockpiles feeds on itself in a positive way. As both sides reduce their nuclear arms, nuclear-related targets go away along with the need to hold them at risk. Weapons previously aimed at those targets lose their mission and retire, and once these weapons are de-commissioned the weapons aimed at them by the other side lose their reason for existence.

This positive, self-amplifying feedback loop has resulted in massive reductions in weapons and targets and greatly undercut the rationale for new weapons. In the mid-1980s, the U.S. and the Soviet Union had some 65,000 nuclear weapons between them, and the U.S. strategic war plan consisted of 16,000 targets in the Soviet bloc, mostly nuclear-related targets.[2] Today we and the Russians have about 16,000 weapons between us, some 3,000 of which are actively deployed. I estimate that U.S. strategic forces are aimed at about 1,000 Russian (and 500 Chinese) targets. In other words, we and the Russians have reduced our stockpiles by about 75 percent, and the U.S. has reduced its nuclear targets by about 90 percent. This is no coincidence. It represents the result of a mutually reinforcing dynamic interaction that has reversed the nuclear arms race, saved both sides a big bundle of money, and put us on the path of Global Zero, which at some point down the road could potentially save the United States the $30 billion annual tab we spend on nukes. Cuts down to 900 total weapons on both the U.S. and Russian side by the year 2022 could save us about $120 billion over the next 15-20 years.

[2] The dubious wisdom of this scale of nuclear profligacy, not to mention the hair-trigger posture adopted, the failure to provide for survivable nuclear command-control-communications, and the extensive pre-delegation of nuclear release authority distributed to U.S. military commanders during the Cold War, belies any notion that the First Nuclear Age was wisely guided by the nation's finest strategic thinkers.

<u>Third</u>, 'smart targeting' using fewer nuclear weapons supplemented by 'smart' conventional forces has made further nuclear cuts possible without sacrificing any target coverage. As a result of revolutionary advances in information collection and processing, global targeting has become more smart and efficient. For example, a few years ago our targeteers planned to expend ten (10) nuclear weapons on one high-value command post, but recent intelligence breakthroughs have enabled them to reduce that number to two (2). A few years ago they had to waste nukes on barraging vast expanses in which mobile missiles operate, but today they can pinpoint their locations and thus greatly shrink the barrage area.

At the same time, our conventional superiority has reduced our reliance on nukes and given the President more flexibility in responding to threats of all kinds, nuclear and non-nuclear alike. As the head of STRATCOM recently said in testimony to Congress: our "conventional forces do, in fact, make a difference in terms that we are no longer in a position where we have to threaten nuclear use in order to overcome a conventional deficiency… overwhelming, conventional power projection that we can bring to bear around the world has made a difference in the role of our nuclear deterrent….we have been able to narrow the role of that nuclear deterrent, accordingly."[3]

This 'smart targeting' with nuclear or conventional forces, together with dramatic increases in special operations capabilities and cyber warfare, and to a lesser extent missile defenses, has allowed the United States to re-balance its deterrence and defense strategy to reduce reliance on nukes and shift to tools that are far more useable in conflict. This re-balancing adds more feasible options to the President's kitbag of tools, increases our credibility in dealing with threats that previously required a nuclear response, and creates more room for further reductions in the U.S. nuclear stockpile.

[3] Testimony of General Kehler, Senate Armed Services Committee Hearing, March 13, 2013.

Fourth, this re-balancing has also strengthened the credibility of extending deterrence to America's allies such as South Korea and Japan, whose military contributions to our alliances have also grown. For instance, South Korea needed help from U.S. tactical nuclear weapons to deal with North Korean artillery threats into the 1980s, but such use posed a serious danger of exposing Japan as well as South Korea to deadly radioactive fallout, and thus undermined the credibility of the nuclear option. Today, South Korea with U.S. support has conventional superiority over the North and the need for U.S. nukes for war-fighting on the Peninsula has greatly diminished.

The North's fledgling nuclear threat does revive somewhat the need to extend the U.S. nuclear umbrella over our allies in the region. However, our joint conventional general purpose forces combined with special operations, missile defenses, and cyber warfare also go a long way toward deterring and suppressing this emerging threat. Our alliance's kitbag is full of new non-nuclear tools. At any rate, the very low numbers of North Korean nuclear weapons do not alter the fact that America's vastly larger arsenal confers overwhelming nuclear superiority in America's favor, and even deep future cuts in the U.S. stockpile will not measurably erode that superiority. The same story goes for Iran and Syria, neither of which have any nuclear forces.

Fifth, the continuing reduction of U.S. nuclear arms presents opportunities for re-configuring the U.S. force structure, posture, and strategy in order to strengthen strategic stability and eliminate obsolete forces. The Global Zero report issued by Gen. (ret.) Cartwright calls eliminating the land-based U.S. Minuteman force and eliminating launch on warning from both sides day-to-day alert posture. In the view of the report's authors, these smaller and off-alert arsenals would reduce vulnerabilities and risks of accidental, mistaken, and unauthorized launch.

A key benefit of smart reductions is that cyber warfare threats can be mitigated. By eliminating forces that must be maintained on launch-ready alert for technical reasons – for instance, Minuteman forces would break down if they did not continuously operate their navigation gyroscopes in peacetime – and by eliminating reliance on 'prompt launch' to ensure the survivability of such forces, we can remove the danger that unauthorized actors could compromise command-control-communications and early warning networks and trigger a launch that was not intended, or block the execution of a legitimate order from the President. These kinds of cyber warfare threats are little understood, which is all the more reason to take nuclear missiles off of launch-ready alert. An early example was the discovery in the 1990s of an electronic back door to the Naval Broadcast network that could have been exploited by outside hackers to inject a launch order into the VLF (Very Low Frequency) radio network used to transmit launch directives from the Pentagon to Trident ballistic missile submarines on launch patrol . Needless to say, a control failure caused by cyber intrusion potentially could have catastrophic consequences.

<u>Sixth</u>, continuing reductions, even deep cuts, are not expected to stimulate China or other countries to 'rush to parity' with the United States. On the contrary, U.S.-Russian cuts would have the opposite effect insofar as they help draw China and others into a multilateral process that works to cap, freeze, proportionally reduce or otherwise constrain their nuclear arsenals.

In the case of China, Senator Lee in a recent hearing recently asked the head of STRATCOM "whether you believe that China will continue to increase its -- the number of weapons in its arsenal, and whether it's going to try to seek a level of equivalency with the United States and Russia in terms of nuclear weapons? General Kehler's answered that "I do not see, nor has the intelligence community reported to me that they are seeking to have some kind of numeric parity with the United States or with Russia."[4]

[4] Senate Armed Services Committee Hearing, March 13, 2013.

The Global Zero report issued by Gen. (ret.) Cartwright judges that China's current small arsenal of approximately 150 total nuclear weapons reflects China's traditional policy of 'minimal deterrence'. This policy harks back to Mao Zedong's guidance a half century ago to deploy only a small nuclear arsenal. The Chinese military has adhered strictly to this time-honored doctrine. Based on extensive engagement with Chinese military and foreign policy officials and experts, I believe General Kehler's statement is firmly grounded. The Global Zero report authors projected modest growth in the Chinese arsenal – to perhaps 200-250 total weapons over the next ten years, and no more than 250-300 in the worst case. A much larger effort to 'rush to parity' with the United States appears to be very unlikely. In any event, such an effort would take many years, would be detectable, and would allow the U.S. to tailor or curtail further U.S. reductions as needed.

More importantly, the Global Zero report emphasizes the importance of China's future participation in nuclear arms control. The historical bilateral framework served its purpose but multilateral nuclear negotiations must be initiated soon to address effectively the multitude of nuclear risks and threats that lie outside the U.S.-Russian relationship. Most of these risks reside in South Asia, the Middle East, and Northeast Asia rather than on the arc between Russia and the United States.

It would be extremely beneficial if continuing reductions in the U.S. and Russian nuclear arsenals help bring China and the other nuclear weapons countries, including those outside the Non-Proliferation Treaty to the negotiating table. There are reasons to believe that China and some others would in fact join such multilateral talks, although there are some internal interests in these countries that oppose entering into a nuclear disarmament process. Thus we should not assume but rather test their willingness to join the process.

The Global Zero commissioners considered, and did not reject, the idea of linking deep cuts in U.S. and Russian arsenals to China's commitment to constrain its arsenal. The corollary benefit of such a commitment is of course that U.S. and Russia reductions could go even farther down the path of Global Zero – as long as the commitment can be codified and verified.

<u>Seventh</u>, continuing U.S. nuclear arms reductions, especially those taken in conjunction with Russia and other countries, would affirm U.S. support for the Non-Proliferation Treaty (NPT) which continues to be an indispensable tool in the international community's effort to prevent and roll back proliferation. The Article 6 obligation to pursue good faith negotiations for nuclear disarmament may have been "essentially hortatory" at one time, but today it is and must be taken seriously. Through nuclear arms reductions, the United States shows respect for the nuclear disarmament agenda endorsed by the vast majority of the treaty's 189 signatories, and in return the United States can expect them to stiffen their resolve in enforcing the NPT. The days of U.S. and Russian lip-service to the disarmament clause of the treaty are over if they hope to preserve and strengthen it in the face of growing proliferation pressures around the world. And the more the nuclear weapons countries reduce their nuclear stockpiles, the more determined to crack down on NPT violators they and the rest of the world will become.

Last, this hearing seeks to set priorities for the U.S. nuclear program under sequestration. Today, the size of the U.S. stockpile and the scale of its reduction are less important than the operational posture of the nuclear forces and the cohesion of its system of command, control, communications and early warning. This has always been true. Cohesive and invulnerable nuclear command systems that increase warning and decision time for presidential deliberations in a crisis are critical to ensuring strategic stability and to preventing the accidental, mistaken, and unauthorized use of nuclear weapons. Therefore, a full-scale thorough review of the cybersecurity of all nuclear networks to identify and remove cyber warfare threats that could compromise the integrity of these networks is essential and must

not be sacrificed on the altar of sequestration. We cannot afford a lapse of vigilance in this arena that may result if the civilian workforce assigned to this mission at the National Security Agency, STRATCOM, U.S. Cyber Command, and elsewhere become casualties of a crude budgetary axe.

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