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## Toward a New “New Look”

*U.S. Nuclear Strategy and Forces  
for the Third Atomic Age*

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CENTER FOR DEFENSE STUDIES

# TOWARD A NEW ‘NEW LOOK’

## *U.S. Nuclear Strategy and Forces for the Third Atomic Age*

Thomas M. Donnelly and David J. Trachtenberg\*

Be they social scientists or political pundits, academics and analysts are forever dividing history into epochs and eras that too often impart a false sense of clarity to the muddy course of human events. So it is with some modesty that we declare the United States and the world are on the verge of a “Third Atomic Age.”

The first atomic age began with the Manhattan Project and the American invention of “The Bomb” and ran through the Cold War, that bipolar balance of nuclear terror between the United States and the Soviet Union. We have been living in a second atomic age in the post-Cold War years, largely attempting to undo what was done during the previous 50 years under the assumption that the “unipolar moment” of American preeminence was a self-evident, natural condition. Thus the future prospect is indeed quite different: a proliferated, multipolar, ambiguous and dangerous world where the global nuclear balance is increasingly complex and potentially unstable. If J. Robert Oppenheimer described the United States and Soviet Union as “two scorpions in a bottle” whose one sting would be lethal to both, we can forecast a world where the scorpions have multiplied but the bottle is no bigger.<sup>1</sup> The arrival of a third atomic age is no happy dawn.

As this suggests, we define “atomic ages” both by the presence of nuclear weapons and the larger geopolitical framework that gives them their meaning. Today, the larger realm of international politics appears as complex and volatile as the nuclear microcosm, and the looming nuclear uncertainties are a reflection of geopolitical ones. Allies, adversaries and the American government itself increasingly speak of American decline. At the same time, the basic purposes of American strategy remain fundamentally unaltered: the United States in fact remains the preeminent global power, strategically invested in and morally committed to preserving and enhancing a liberal international order. So, too, are our persistent strategic habits unchanged: The United States seeks to secure the freedom of the “commons” – the oceans, the skies, space and “cyberspace” – and the “liberties,” as our Whiggish ancestors would have expressed it, of the continents. Overall, even while the fashion for “American decline” rages, we work for a balance of power that favors freedom.<sup>2</sup>

In this essay, we endeavor to understand how to configure and posture U.S. nuclear forces to be effective in achieving enduring American strategic goals in an

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<sup>1</sup> J. Robert Oppenheimer, “Atomic Weapons and American Policy,” *Foreign Affairs*, July 1953, p. 529.

<sup>2</sup> On the Whiggish roots and the patterns of American strategy-making, see Walter Russell Mead, *God and Gold: Britain, America and the Making of the Modern World*, Knopf: Oct. 9, 2007.

emerging geopolitical and military environment. And so we regard nuclear forces ultimately as instruments of U.S. statecraft; we recognize their potential for destruction makes them truly unique. Yet the goal of a world safe *from* nuclear dangers is not the same as the goal of a world safe *for* free peoples, and we hold the latter to be a higher goal. We also seek to discover the way forward into a profoundly different world by understanding what has worked, and what has not, in the past.

The clear and consistent lesson is that sufficient nuclear strength is an inseparable element in the United States' ability to fulfill its role in securing the current liberal international system, and the great-power peace, prosperity and rise in political liberty that the system affords. While the particular measures of nuclear "sufficiency" may change, the need for it has been constant. And the broadest measures of sufficiency have been likewise constant: "Sufficiency" is a matter of size, variety, utility, modernity, readiness and safety. The failure to maintain a U.S nuclear force that meets a threshold level of capability in any of these ways is not sufficient. And questions about America's ability to meet its security commitments inevitably follow.

### ***Past U.S. Nuclear Policy and Posture***

The first atomic age, perhaps not coincidentally, also marked the period when the United States, at the head of the victorious World War II allies, emerged as a dominant global great power, establishing an international order built upon American and Western political principles and practices, and maintaining an anti-Communist coalition, not only formally through the North Atlantic Treaty Organization but in the greater Middle East and East Asia. The correlation between U.S. nuclear forces and American international leadership has continued ever since, to the point where it may be taken for granted. And once the Soviet Union demonstrated its own nuclear capabilities, the prime directive of U.S. strategy was to deter Soviet attack, both nuclear and conventional. U.S. strategic nuclear offensive forces were designed to deter the Soviet Union not only from launching a nuclear strike on the United States and its allies but also preventing a conventional attack by the Red Army against Western Europe. The extension of the American nuclear deterrent to European and other allies was considered prudent in light of Cold War concerns over Soviet expansionism and the numerical superiority of Soviet conventional forces.

During this period, U.S. nuclear strategy evolved to reflect the changing strategic balance between the two superpowers. The strategy of "massive retaliation," developed in the 1950s and enunciated by Secretary of State John Foster Dulles in 1954, called for an overwhelming U.S. response to aggression "at places and with means of our own choosing."<sup>3</sup> In light of the Cuban Missile Crisis in 1962, President Kennedy replaced the strategy of massive retaliation with "flexible response," intended to tailor U.S. military options to specific situations without necessarily triggering a nuclear response. Finally, as Soviet nuclear forces approached parity with the United States, "assured destruction" was adopted as the strategy best suited to deterring a Soviet attack.

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<sup>3</sup> Speech by Secretary of State John Foster Dulles, Jan. 12, 1954.

Although the names associated with the strategy changed, the central premise of U.S. nuclear strategy remained the desire to maintain “strategic stability” between the United States and the Soviet Union. The idea of mutual vulnerability was seen as essential to preserving this stability, and the policy of “mutual assured destruction,” inevitably known as “MAD,” was adopted. Hence, strategic defenses were downplayed and strategic offenses provided the central element for the functioning of effective deterrence, which was based on the threat of credible retaliatory punishment. In this context, arms control also became to be viewed as an important element in ensuring not only strategic stability but “crisis stability” as well.<sup>4</sup>

U.S. nuclear targeting doctrine shifted between “countervalue” (the targeting of population centers and urban-industrial areas) and “counterforce” (holding at risk Soviet military and leadership assets) in an attempt to strengthen deterrence by calculating what the Soviets would consider to be “unacceptable” damage. (The Carter Administration’s “countervailing strategy” in the 1980s was an example of a counterforce targeting approach.) This assumed a “rational” Soviet leadership that would understand the risks of conflict escalation to the nuclear level and would be deterred from any “irrational” actions that would lead to a nuclear exchange. It also assumed the Soviet leadership subscribed to the views of Western experts regarding what would constitute an “unacceptable” level of punishment.

These various adjustments in nuclear strategy also broadly reflected shifts in the interpretations of the larger policy of “containment” of the Soviet Union and the Communist movement. It is critical to view the shifts in nuclear emphasis within this larger and consistent context, and to recall that containment was conceived as a strategy for victory: Military containment would ultimately result in Soviet collapse from internal “contradictions,” that is, the political weaknesses of the Soviet empire would prove fatal. “Massive retaliation,” for example, was very much the child of the Eisenhower Administration, which sought to limit the costs of the Cold War commitment, thus making a heavy reliance on nuclear weapons seem attractive. As the Cold War continued into its fourth decade and the Soviet Union seemed eternally resilient, “MAD” became an entrenched principle more than a particular policy crafted for a particular moment or set of strategic circumstances. From the Nixon era onward, strategic stability morphed from a nuclear goal to a national goal; containment was no longer a strategy for victory but for coexistence. And, in fact, the impulse for strategic stability lives on, a kind of intellectual hangover, fogging current thought, as will be discussed further on; the urge now is to bring China back as the new, great-power doppelganger, with which the United States will form a globe-spanning “G2” partnership. Yet even at the height of Soviet détente, and despite the shifts in nuclear strategy and doctrine, the essential connection between American leadership of the “free world” and American nuclear strength remained unbroken. Paradoxically and somewhat perversely, it was the collapse of the Soviet

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<sup>4</sup> For an excellent treatment of the evolution of U.S. nuclear strategy from the 1950s to the present day, see Keith B. Payne, The Great American Gamble: Deterrence Theory and Practice from the Cold War to the Twenty-First Century, National Institute Press, 2008.

Union that has called this connection into question; only with victory have the essential tenets of U.S. strategy become uncertain.

The full story of American grand and nuclear strategy-making in the post-Cold War period is far from complete and it is beyond the scope of this essay to fully review even what's happened thus far. The United States had stumbled into a position as the world's "sole superpower," uncomfortably alone in a "unipolar moment."<sup>5</sup> Thus, after the crumbing of the Berlin Wall and the Warsaw Pact in 1989, and the dissolution of the Soviet Union in 1991, the first atomic age gave way to the second. U.S. nuclear strategy as it had developed during the Cold War became increasingly seen as an anachronism irrelevant to post-Cold War strategic realities, but there was no obvious substitute. With the Soviet Union no more and with optimism over the prospect of a democratic Russia that shared Western values, who and what were American nuclear forces supposed to deter?

Little was done to adapt U.S. nuclear strategy to post-Cold War realities in the initial years following the Cold War's end, despite indications that new nuclear conditions were on the horizon. What was done reflected little more than a desire to reduce U.S. nuclear forces and capitalize on a post-Cold War "peace dividend" in the absence of a thorough intellectual examination of post-Cold War likelihoods and uncertainties. There was a risk that the peaceful implosion of the Soviet Union could turn violent and destabilizing and that Russia could return to a hostile, anti-American course. But of much greater concern was the chance that Russian weakness would lead to proliferation to other parties who, in the absence of a superpower standoff, might be less "rational" than Soviet leaders were and less prone to exercise caution in wielding those capabilities. As former Director of Central Intelligence R. James Woolsey stated, "We have slain a large dragon, but we now live in a jungle filled with a bewildering variety of poisonous snakes."<sup>6</sup>

It was not until 2001 that the United States took a serious second look at its nuclear strategy with a view toward tailoring it to contemporary threats. The congressionally mandated Nuclear Posture Review (NPR) was the first comprehensive post-Cold War reassessment of U.S. nuclear strategy. It led to changes in American thinking about the role of nuclear weapons, reflected in changes to targeting doctrine and practices. The 2001 NPR categorized threats to U.S. security as "immediate," "potential" or "unexpected." For the first time, Russia was no longer considered to pose an "immediate" threat to the United States. As a result, the NPR postulated a reduced emphasis on the nuclear weapons that for so long had been designed to deter a hostile Soviet Union.<sup>7</sup>

Deterrence, however, remained a key theme in the 2001 NPR and a central objective of the U.S. nuclear arsenal. Although Russia's intent was seen as more benign,

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<sup>5</sup> Charles Krauthammer, The Unipolar Moment, *Foreign Affairs*, Winter 1990/1991.

<sup>6</sup> R. James Woolsey, testimony before Senate Select Committee on Intelligence, Feb. 2 1993.

<sup>7</sup> See the unclassified summary of the 2001 Nuclear Posture Review in Chapter 7, "Adapting U.S. Strategic Forces," 2002 Secretary of Defense Annual Report to the President and the Congress, pp. 83-92.

its residual nuclear capabilities still posed a potential risk. Other countries such as China and North Korea were developing nuclear capabilities and remained potential threats. Therefore, deterrence remained an essential component of the revised U.S. nuclear strategy.

But along with deterrence, the NPR also highlighted three increasingly important additional aspects of nuclear weapons: assurance, dissuasion and actually defeating adversaries. Together, these four goals, first articulated in the 2001 Quadrennial Defense Review, provided an intellectual construct for weighing the sufficiency of U.S. nuclear forces, and are addressed in greater detail later in this paper.

In addition to these general goals, and also reflecting the emerging view in the Defense Department that the United States enjoyed unprecedented and unchallenged military-technological advantages, the 2001 NPR called for a reduced emphasis on nuclear weapons and an increased commitment to the development and deployment of advanced conventional weapons and missile defenses. Its support for missile defenses, based on the spread of ballistic missiles and weapons of mass destruction technology to others, led the George W. Bush Administration to withdraw from the 1972 U.S.-Soviet Anti-Ballistic Missile Treaty, which had codified a situation of mutual strategic vulnerability for three decades. With other post-Soviet nuclear threats emerging, leaving America vulnerable to smaller-scale missile attack was no longer considered prudent and the old paradigm of strategic stability based on mutual vulnerability was upended. So, too, was the previous acceptance of arms control as a means of preserving stability in the superpower relationship. As a result of the NPR, the United States severed the linkage between the size and composition of its nuclear forces and those of Russia. The 2002 Strategic Offensive Reduction Treaty, also known as the “Moscow Treaty,” reflected this by codifying the unilateral reductions the United States had decided to make in light of the changed strategic environment, limiting both parties to a range rather than a specific number of operationally deployed strategic nuclear weapons, and allowing maximum deployment flexibility on their respective delivery systems.

By the end of the second atomic age, U.S. nuclear strategy had begun to shift away from its disproportionate focus on Russia. U.S. nuclear forces would be reduced to their lowest levels in decades. Strategic defenses – in particular missile defenses – would emerge as critical to the attainment of U.S. strategic objectives. And arms control no longer occupied a central position as the guarantor of “stability.” This shift in nuclear strategy was more a shift in means than ends. The goals of U.S. nuclear strategy have always remained relatively constant, i.e., to prevent attack on the U.S. homeland or the territory of friends and allies and to deny any aggressor confidence in his ability to achieve his war aims. Nevertheless, overturning conventional orthodoxy is a difficult thing, even when the conditions that gave rise to such orthodoxy no longer pertain. Resistance to the new strategy outlined in the NPR was extensive among those who saw it as an assault on the validity of their own views, developed and implemented during the Cold War.

But if the NPR heralded a conclusion to the second atomic age, it only hinted at the nuclear balance to come. If, in 2001, it was time to shed old skins, it was not yet clear what a new one should look like. And the terrorist attacks of September 11, 2001, and the subsequent wars in Afghanistan and Iraq deflected political and public attention. But now the spotlight is returning to nuclear matters, with the new “START” strategic arms control agreement with Russia, the Obama Administration’s new Nuclear Posture Review, the Nuclear Non-Proliferation Treaty Review Conference, additional efforts to secure nuclear materials worldwide and increasing worries about Iran’s nuclear program and other potential proliferation. These developments suggest we are on the cusp of a third, multipolar atomic age, where old strategies and paradigms may be insufficient to deal with new challenges and threats.

### ***Dealing with Multipolarity and the Rise of the Middle Kingdom***

As a matter of politics and policy, current attitudes about U.S. nuclear capabilities in general, and support for the global elimination of nuclear weapons in particular, probably have been shaped most by the January 4, 2007, Wall Street Journal op-ed, “A World Free of Nuclear Weapons,” co-authored by former Secretary of State George Schultz, former Secretary of Defense William Perry, former Secretary of State Henry Kissinger and former Sen. Sam Nunn.<sup>8</sup> Given the experience and bipartisan credentials of these four “wise men,” such influence is hardly surprising, even allowing for the brevity of the article. One year later, they reprised their role as bipartisan advocates for nuclear abolition in another Wall Street Journal op-ed, “Toward A Nuclear-Free World,” lending additional momentum to the international “Global Zero” movement.

Nonetheless, the perspective is backward-looking, beginning with the invocation of Ronald Reagan’s dream of a nuclear-free world, the embrace of Cold-War-era arms control measures and, most tellingly, its failure to address current and emerging strategic realities beyond North Korean and Iranian proliferation. There is not a word about China in either article, nor India – the two rising global powers with commensurate nuclear interests – beyond a 1998 quote from Rajiv Gandhi about the potential horrors of a nuclear war: “[Nuclear war] will mean the...end of life as we know it on our planet earth.”<sup>9</sup> That’s a real fear, but hardly a sound starting point for U.S. nuclear strategy; there are many other aspects of nuclear weapons to be concerned about as well -- very bad outcomes short of the termination of all human life.

Secretary Perry led a second consortium of senior statesman, partnering this time with former National Security Adviser Brent Scowcroft as well as others now holding important Pentagon posts in the Obama Administration, in a more comprehensive study undertaken for the Council on Foreign Relations and published in 2009.<sup>10</sup> But though it

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<sup>8</sup> George Schultz, William Perry, Henry Kissinger and Sam Nunn, “A World Free of Nuclear Weapons,” *The Wall Street Journal*, Jan. 4, 2007, p. A15.

<sup>9</sup> Ibid.

<sup>10</sup> William Perry and Brent Scowcroft, *U.S. Nuclear Weapons Policy*, Council on Foreign Relations, New York, 2009.

is a more thorough-going work, the report suffers from shortcomings in strategic appreciation not unlike those the *Wall Street Journal* op-eds.

The Council study includes a fuller discussion of China, and, given that the rise of China is the most obvious geopolitical development of the post-Soviet era and a key to the future international security order begins with the sound observation that “China is a nuclear-armed rival – not an enemy – of the United States.”<sup>11</sup> The task force that directed the report further argues “the United States needs to better clarify the intention of its force posture in Asia and missile defense plans” and insists that “China needs to be more transparent about the aims of its military modernization efforts.”<sup>12</sup>

Yet the ineluctable conclusion such observations demand is this: In the strategic rivalry between the United States and China – and it is not only a regional but already a global competition – the United States has yet to define its strategic goals in a clear enough way that permits sound force planning, while China – as befits a nation that perceives itself to be in the midst of a strategic rivalry with a more dominant competitor – isn’t putting all its cards on the table. That is an argument for keeping one’s powder dry and hedging against the worst case. Indeed, it is worth examining the study’s China analysis in detail; a close reading of these sections reveals not only an incomplete and contradictory understanding of the U.S.-China competition but also a reluctance to think through how the shifting global nuclear balance might influence or be influenced by that competition. Further, it demonstrates that the analysis cannot serve as the basis for U.S. force posture decisions.

Despite describing a strategic rivalry, the Council study goes on to embrace most of the benign conventional wisdom about U.S.-China relations, beginning with the observation that “economic interdependence provides an incentive to avoid military conflict and nuclear confrontation.” True enough, but European economic interdependence did not preclude centuries of great-power struggle and war. China is also economically intertwined with the rest of East Asia, but as the study notes, Beijing is “embedded in other complicated nuclear-related relationships,” including with two principal U.S. allies – Japan and South Korea – and India and Pakistan, “a state China has helped to acquire civilian – and most likely military nuclear capabilities” as well as ballistic missiles. In the context of a conflicted and complex strategic and nuclear environment, and, given past Chinese behavior, economic ties cannot be regarded as surety of good behavior.<sup>13</sup>

A second weakness of the study is a reductive approach to the scope of U.S.-China competition: “The most plausible – indeed, perhaps the only plausible – military threat to the United States from China emanates from a potential confrontation over Taiwan.”<sup>14</sup> One needn’t be a threat-monger to observe that the most recent confrontations between the United States and China – from the 2001 EP-3 incident off

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<sup>11</sup> Ibid, p. 42.

<sup>12</sup> Ibid, p. 43.

<sup>13</sup> Ibid, pp. 43-44.

<sup>14</sup> Ibid, p. 24.

Hainan Island or the harassment of the *USS Impeccable* in March 2009 – have had nothing to do with Taiwan. The multiplying points of strategic tension, from Chinese protection in the U.N. Security Council of the Sudanese government’s genocide in Darfur or Iran’s nuclear program, suggest that, as Chinese influence grows, so does the potential for confrontation with America or its allies.

A correlated problem is that the study unquestioningly accepts and narrowly interprets the scope and direction of Chinese military modernization. “The primary objective is to preclude U.S. intervention if China uses force against Taiwan,” the Council task force concludes.<sup>15</sup> This is starkly at odds with the findings of the Pentagon’s most recent report on Chinese military power: “The [People’s Liberation Army] is also developing longer-range capabilities that have implications beyond Taiwan,” the Defense Department says.

China’s ability to sustain military power at a distance remains limited, but its armed forces continue to develop and field disruptive military technologies, including those for anti-access/area-denial, as well as for nuclear, space and cyber warfare, that are changing regional military balances and that have implications beyond the Asia-Pacific area...[S]ome of these capabilities...could allow China to project power to ensure access to resources or enforce claims to disputed territories.<sup>16</sup>

In such light, the task force’s conclusion that nuclear “mutual vulnerability” with China “like mutual vulnerability with Russia – is not a policy choice to be embraced or rejected but a strategic fact to be managed with a priority on strategic stability” is myopic. To begin with, Russia’s ability to hold the United States vulnerable is a Soviet legacy. Despite its much-reduced condition, the current Russian nuclear arsenal is many times larger than China’s; acquiescing in American vulnerability would be to grant Beijing a huge concession at a bargain price. Second, and more critically, China is not interested in “strategic stability” – if it were, there would be no rivalry with the United States. Finally, the task force’s further recommendation that the United States reshape its missile defense programs to suit Chinese preferences as it has done with Russia can only be destabilizing; again, the effect would be to give the Chinese maximum strategic value from a minimal military investment.

A final and equally fatally revealing element in the Council analysis is its observation that the “large asymmetry” between U.S. and Chinese nuclear forces means that “negotiating a formal arms control agreement with China is not a useful or realistic objective for the foreseeable future.”<sup>17</sup> The emerging multipolar global nuclear balance suggests that leaving China outside any new arms control framework would be imprudent and ill-advised. Certainly, a point of departure for U.S. policymakers should be an acknowledgement of the fundamental asymmetry in America’s role in the international security system – as global guarantor or “system operator” – and that this role is profoundly different from China’s. This is why it has been a goal of American strategy

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<sup>15</sup> Ibid, p. 24.

<sup>16</sup> Office of the Secretary of Defense, *Annual Report to Congress: Military Power of the People’s Republic of China 2009*, Washington, D.C., 2009, p. I.

<sup>17</sup> Perry and Scowcroft, op. cit, pp. 44-45.

to encourage Beijing to become a “responsible stakeholder,” that is, making China a partner in preserving the underlying strategic asymmetry. In order to fulfill its role and preserve this system, the United States must maintain a favorable nuclear balance not only vis-à-vis Russia, or China, but one that extends deterrence to those threatened by North Korean, Iranian, Pakistani or other nuclear capabilities. Bilateral arms control measures can only make the nuclear balance more complex and uncertain.

The obverse side of the report’s China analysis is its lack of interest in or appreciation of India’s great-power ambitions and increasing capabilities or, indeed, for the “strategic partnership” between the United States and India – one brought to life during the Bush years through an acknowledgement of India’s status as a mature nuclear power. Whereas the study has extended sections on U.S.-Russia and U.S.-China relations and the bilateral nuclear issues, its treatment of India is relegated to a three-paragraph section on “India and Pakistan” in a background chapter on the “new security environment.”<sup>18</sup> Certainly, the failure to understand that India’s nuclear concerns are shifting from a singular focus on Pakistan to a broader focus centered on China is an indicator of the rear-view mirror perspective of the Council task force.

In sum, the Council report is an argument for a return to Nixon-era strategic stability with Russia and now China, whose great-power status is not only accepted as a matter of fact but also embraced as stabilizing and benign. But this is to immediately discount the current role of the United States in the world or its ability to preserve the current international order based upon American primacy. Further, against all past historical evidence, it is to argue that a return to multipolarity would be stabilizing rather than sparking competition and conflict. And it is hard to imagine a durable great-power condominium that relegates India to secondary status.

But this is the inevitable result of beginning, as the Council task force did, by placing the non-proliferation cart before the strategy horse. The report assumes that “the fundamental goal of U.S. nuclear policy” is to prevent nuclear weapons “from ever being used” – including by the United States itself – and that “the sole purpose of U.S. nuclear weapons is providing deterrence for the United States and its allies.”<sup>19</sup> At minimum, these are points to be argued, and argued in the broadest strategic and military contexts, not simply assumed. Particularly because they would represent a dramatic departure from past American nuclear policy.

### *The ‘Third Atomic Age’*

Over the past several years, the strategic landscape has continued to shift in ways that suggest we are entering a third atomic age, characterized by structural complexity and instability – the sheer number of nuclear actors is growing and their relative capabilities are more comparable than in past – as well as “qualitative” complexity and instability – the nuclear decision-making process in Pyongyang, Islamabad, Tehran or even Beijing is far more opaque than in Moscow during the nuclear crises of the Cold

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<sup>18</sup> See Perry and Scowcroft, *op. cit.*, pp. 27-8.

<sup>19</sup> *Ibid*, p. xiv.

War. Multiplying and framing these uncertainties is the larger uncertainty about the future of American power: This diverse troupe of actors is making its varied nuclear calculations over a soundtrack of American decline. As the following brief tour of the horizon makes plain, the world is becoming a very different place, a fact reflected in a rapidly changing nuclear balance.

To be sure, predictions of American decline are nothing new; the “rise of Japan” in the 1980s and early 1990s brought on a wave of declinism. But the difficulties of war in Iraq and Afghanistan, fiscal crisis, recession, unemployment, national debt and domestic political conflict have combined to create a more widespread sense of waning American power. Further, this feeling of frustration is compounded by a perception of rising powers elsewhere, most of all the People’s Republic of China; this “rise of the rest” notion has been expounded and popularized by the peripatetic journalist Fareed Zakaria in columns, television appearances and the book *The Post-American World*.<sup>20</sup>

These themes have been echoed often, if indirectly, in the foreign policy pronouncements of President Obama. His September 23, 2009, speech to the United Nations General Assembly was not simply a rejection of the Bush Administration and a promise to pursue different policies, it was a theory of international relations: “No balance of power among nations will hold.” Given that the current balance of power remains anchored in American preeminence, the president is predicting an inevitable erosion of the U.S. position of global leadership. Later in the speech, he further seemed to welcome this as a moral improvement: “No one nation can or should try to dominate another nation.”<sup>21</sup>

The imperative for acting morally in American foreign and defense policy is a key sinew in the tapestry of the President’s approach to global affairs and may suggest to the casual observer that past American policies were, in fact, immoral. This extends to America’s maintenance of its nuclear deterrent. Indeed, the President’s strong affinity for nuclear elimination is fueled by his belief that the United States has a moral obligation to lead the rest of the world toward this holiest of grails. In his April 2009 speech in Prague, he declared: “. . . as the only nuclear power to have used a nuclear weapon, the United States has a moral responsibility to act.” Historians may debate whether this suggests the U.S. use of nuclear weapons to end the bloodiest global conflict in human history – a use whose attendant benefits include successfully deterring the outbreak of another global holocaust for more than six decades – was immoral. Nevertheless, it suggests a fundamental distaste for the historical role that American nuclear weapons have played in preserving a relatively stable post-World War peace where the cause of liberalism could be advanced.

The President’s 2009 Prague speech articulated a vision of a world free of nuclear weapons – and the signing of the new START treaty one year later was the culmination

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<sup>20</sup> Fareed Zakaria, *The Post-American World*, W.W. Norton, New York, 2008.

<sup>21</sup> Barack Obama, “Remarks by the President to the United Nations General Assembly,” at [http://www.whitehouse.gov/the\\_press\\_office/remarks-by-the-president-to-the-united-nations-general-assembly/](http://www.whitehouse.gov/the_press_office/remarks-by-the-president-to-the-united-nations-general-assembly/)

of the vision's first step. But like the rear-view mirror approach to India and China, the new START pact reflects an old paradigm – it takes America “back to the future” of a Cold War-style, adversarial relationship based on the faulty premise that the United States needs to manage an arms competition with Russia to ensure strategic stability. In so doing, the new START treaty lacks relevance to the myriad of contemporary nuclear threats – some of which are arguably more serious and urgent than Russia – that the United States is likely to face in the third atomic age.

But what is sadly inevitable is that the Obama administration's determination to accelerate reductions in U.S. nuclear forces – as the President's Prague speech, the START treaty, and the new NPR indicate – and the degradation of the U.S. nuclear infrastructure – to be discussed in greater detail below – will likely be considered in the context of this larger narrative of American decline. At the dawn of the third atomic age, the message from Washington is, at best, uncertain.

### *How Others See Nuclear Weapons*

Despite a growing American chorus of official and unofficial voices disinclined to see enduring value in the U.S. nuclear arsenal, other nations see nuclear weapons as important for political and military reasons. This is a fundamental truth and explains why, when the United States has committed itself to disarmament and non-proliferation, so many peers are working so hard to acquire nuclear capabilities. Politically, nuclear weapons are seen by some as the “great equalizer” in global affairs. They can convey great power status on countries that otherwise would lack significant influence in world affairs. To have a nuclear arsenal is to be taken seriously by others, especially by the United States.

In addition, nuclear weapons are seen by some as a counter to U.S. conventional superiority. Our adversaries know they cannot hope to defeat U.S. forces on the battlefield using conventional means; hence, the emphasis on “asymmetric” warfare. Nuclear weapons are the ultimate asymmetric threat. They may even be employed asymmetrically – for example, rather than seeking to maximize prompt casualties, an adversary may choose to detonate a nuclear weapon high in the atmosphere above the United States, causing an electro-magnetic pulse effect that would result in a massive disruption to essential infrastructures, including communications, emergency services, power, food, transportation and other critical elements of society on which Americans depend for their safety and well-being. While this would seem to diminish the destructive value of nuclear weapons, it would nevertheless have a devastating effect while complicating the deterrence or retaliatory calculus.

Some adversaries seek nuclear weapons as a deterrent to U.S. action in their own “backyard.” For example, a nuclear-armed Iran would considerably raise the stakes of American action in the Middle East and Persian Gulf region. Against such a threat, the United States may find itself the object of deterrence unwilling to take actions to secure U.S. interests in the region because of the risk of escalating a potential conflict to the nuclear level.

The pattern of U.S. behavior toward North Korea suggests the United States is likely to proceed cautiously in confronting dangerous regimes with nuclear weapons capability. The risks of taking a more aggressive posture toward such erratic regimes have generally been deemed too high. Consequently, there is a strategic value in acquiring nuclear weapons, even if they are never launched against the United States.

Thus, it is clear that other countries initially seek nuclear weapons for reasons not directly related to the size or composition of the U.S. nuclear arsenal, or the status of arms control reductions with Russia. Rather, regional balances, ideological motivations, and security considerations drive the desires of other states to seek nuclear weapons. Long-time antagonists India and Pakistan acquired nuclear weapons to deter each other, not because the United States failed to ratify the second Strategic Arms Limitation Treaty or has not yet totally disarmed as called for in Article VI of the Nuclear Nonproliferation Treaty. At the same time, it would be wrong to interpret these actions outside their strategic and historical context. As the nature of the coming multipolar nuclear balance become better defined, the reasons for sizing up and shaping nuclear forces will shift. And the central question for many will be: Are U.S. nuclear forces relevant for me?

For non-state actors and terrorist groups, the strategic value of nuclear weapons may rest not in their deterrent capability but in their actual employment. Some groups would like nothing more than to kill as many Americans as possible in the belief that doing so assures them of a one-way ticket to paradise. The focus on stopping terrorists from acquiring nuclear weapons is well placed.

Of course, not all states seek nuclear weapons. Many do not feel the need to develop or acquire them. As previously noted, the United States extends a “nuclear umbrella” of protection to some 30 other countries, including its NATO allies, Japan, South Korea and other strategic partners. This extended nuclear deterrent has provided a powerful disincentive for those countries it covers to obtain nuclear weapons of their own. In addition, several countries that had nuclear weapons or nuclear weapons programs abandoned them. Yet their decisions had little to do with the American fetish for nuclear disarmament or academic theories of “strategic stability.” Instead, they were grounded in unique national interest considerations unrelated to quintessential American theories of deterrence or non-proliferation.

For example, Brazil and Argentina had covert nuclear weapons programs, which they abandoned as a result of a series of agreements in the 1980s and early 1990s that reduced tensions between the two countries and allowed for IAEA safeguards of their respective nuclear facilities. Of course, what is abandoned one year may be reclaimed the next; the knowledge to create nuclear weapons cannot be eradicated and the increasing ubiquity of nuclear technology can only facilitate such a reclamation. Some Brazilian officials have raised the prospect that Brazil should again pursue a nuclear weapons program as a deterrent to any attempts to seize its offshore oil fields and as a measure of international respectability. Brazilian Vice President Jose Alencar has stated,

“Nuclear weapons as an instrument of deterrence are of great importance for a country that has 15,000 kilometers (9,000 miles) of border.”<sup>22</sup>

When the Soviet Union disintegrated in 1991, Ukraine, Belarus and Kazakhstan became instant nuclear weapons states, as Soviet nuclear forces were based on the territories of these newly independent countries. In exchange for dismantlement assistance and security assurances, those countries agreed to forego their nuclear weapons status and become non-nuclear weapons states. Libya, too, pursued a covert nuclear weapons program. Libyan leader Col. Muammar Qaddafi decided, however, to abandon it in 2003 as a result of the interception at sea of a shipment of illegal weapons materials on its way to Libya and the U.S. invasion of Iraq. There is evidence to suggest that Qaddafi believed Libya would be the next target of a U.S. military action, similar to the action that overthrew Saddam Hussein in Iraq, in part because of his pursuit of nuclear weapons and other weapons of mass destruction.<sup>23</sup> These examples suggest a nation’s pursuit of nuclear weapons capabilities is more likely to be determined by its own calculations regarding the security environment and threats it faces than by American actions on arms control or disarmament.

Clearly, when it comes to America’s adversaries however, nuclear weapons have a value that is qualitatively different than the value placed on them by many Americans. Whether, strategic or tactical, nuclear weapons are viewed as the coin of the realm—politically and militarily—in international relations. As much as the United States wishes to see nuclear weapons devalued, reduced and eventually eliminated, the rest of the world sees their utility through a different prism. As a consequence, the United States must consider these various perspectives in determining what course to take with respect to its own nuclear arsenal.

For major powers such as China and Russia, nuclear weapons continue to be essential tools of military and political statecraft. China, for example, is engaged in a robust military modernization effort that includes the development of more sophisticated nuclear weapons and delivery systems. As the Pentagon’s most recent annual report on China’s military power notes: “China is both qualitatively and quantitatively improving its strategic missile forces.”<sup>24</sup> This includes the CSS-3, DF-31, and DF-31A ICBMs and the JL-1 and JL-2 SLBMs.

For its part, Russia has become increasingly belligerent in its foreign policy, expressing a growing hostility to the West. The Russian invasion of Georgia in the summer of 2008 suggests a new Russian assertiveness in international affairs. Russian military modernization programs have accelerated, including renewed emphasis on nuclear forces and doctrine.

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<sup>22</sup> See “Brazil Favors Developing Nuclear Weapons,” United Press International, Sept. 28, 2009, at [http://www.spacewar.com/reports/Brazil\\_favors\\_developing\\_nuclear\\_weapons\\_999.html](http://www.spacewar.com/reports/Brazil_favors_developing_nuclear_weapons_999.html).

<sup>23</sup> For an excellent treatment of the Libya example, see Robert G. Joseph, *Countering WMD: The Libyan Experience*, National Institute Press, 2009.

<sup>24</sup> Office of the Secretary of Defense, Annual Report to Congress, “Military Power of the People’s Republic of China,” 2009, p. 24.

Russia still maintains thousands of nuclear weapons, both “strategic” and “tactical,” and has adopted an increasingly aggressive stance toward the United States and the West. Moscow has reemphasized the primacy of its nuclear arsenal in its military doctrine and is devoting additional resources to upgrading and modernizing its nuclear capabilities. This includes development of new silo-based and mobile ICBMs, a new SLBM, a new strategic submarine and new long-range cruise missiles. Moreover, Russia continues to carry out high-profile strategic exercises of a kind not seen since the days of the Cold War. By some estimates, Russia’s deployed tactical nuclear weapons exceed those of the United States by an order of magnitude, and Moscow continues to modernize them. Moreover, there are signs that Russia continues its nuclear experiments on Novaya Zemlya.<sup>25</sup>

For the past decade, Russia’s nuclear doctrine has allowed for the use of nuclear weapons not only in response to nuclear attack but to counter “large-scale aggression involving conventional weapons in situations critical for the national security of the Russian Federation and its allies.”<sup>26</sup> In February 2010, Russia revised its doctrine to allow for pre-emptive nuclear use in response to regional or local conventional conflicts.<sup>27</sup> Would Russia actually contemplate the use of nuclear weapons in such circumstances? As then-Minister of Defense Sergei Ivanov told the Duma in 2007, “As regard to the use of nuclear weapons in case of aggression, of course. What else were they built for?”<sup>28</sup>

Some see Russia’s renewed emphasis on nuclear weapons as a reaction to the decline in Russia’s conventional forces. Yet Russian nuclear doctrine sees nuclear weapons as essential tools for warfighting (including the possible preemptive use of nuclear weapons as noted above) and for war termination. After the Russian military invasion of Georgia, some observers noted that Russia was prepared to use tactical nuclear weapons in the conflict in the event of U.S. intervention.<sup>29</sup> Moreover, unlike the United States – which sees the use of nuclear weapons as an escalation of conflict – Russian military doctrine sees nuclear weapons as providing a “de-escalatory” option leading to war termination.

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<sup>25</sup> See comments of John S. Foster, Jr. at the U.S. Strategic Command Deterrence Symposium, 29-30 July 2009. Also see the comments of R. James Woolsey in the Forward to “U.S. Nuclear Deterrence in the 21<sup>st</sup> Century: Getting It Right,” a White Paper by the New Deterrent Working Group, July 2009, p. 4.

<sup>26</sup> See a review of Russia’s 2000 Military Doctrine at: [http://www.nti.org/e\\_research/e3\\_55a.html#Russias\\_2000\\_Military\\_Doctrine](http://www.nti.org/e_research/e3_55a.html#Russias_2000_Military_Doctrine).

<sup>27</sup> “The 2010 Russian Military Doctrine,” *The Office of the Russian President*, Feb. 5, 2010. Available at: [http://news.kremlin.ru/ref\\_notes/461](http://news.kremlin.ru/ref_notes/461). See also: <http://www.worldpoliticsreview.com/documents/show/133>.

<sup>28</sup> “Russia Reserves Right to Preemptive Strikes,” *Agentstvo Vovennykh Nosostey*, Moscow, Feb. 7, 2007, cited in National Institute for Public Policy, *Planning the Future U.S. Nuclear Force: Volume Two: Foundation Report*, October 2009, p. B-11.

<sup>29</sup> The movement by Russia of nuclear-capable SS-21 missiles into Georgia during the conflict added to concerns that Russia might be preparing for a nuclear conflict.

Other countries in volatile regions are increasingly reliant on nuclear weapons for regional deterrence. India, for example, is preparing to dramatically increase and improve its nuclear capabilities with smaller, more accurate warheads, longer-range ballistic missiles and fleet ballistic missile submarines. Pakistan is expanding its nuclear arsenal amid Western concerns over the safety and security of Pakistan's nuclear force in light of challenges to the stability of the government internally resulting from the war against extremists in neighboring Afghanistan.

Similarly, Iran appears to be on a course toward development of its own nuclear weapons as a means of deterring U.S. military actions against the Islamic Republic specifically and U.S. freedom of action in the region more generally. Statements by the Iranian President Mahmoud Ahmadinejad suggesting that Israel is a "disgraceful blot" and should be "wiped off the face of the earth" have raised concerns that nuclear weapons in the hands of the Iranian leadership may not be used solely for deterrent purposes.<sup>30</sup> Iran has acquired thousands of centrifuges for uranium enrichment purposes and is pursuing an aggressive nuclear weapons and missile development program.

In its latest report on Iran's nuclear program, the International Atomic Energy Agency (IAEA) concluded that Iran is not in compliance with IAEA and U.N. Security Council resolutions and "has not provided the necessary cooperation to permit the Agency to confirm that all nuclear material in Iran is in peaceful activities." In addition, the IAEA expressed "concerns about the possible existence in Iran of past or current undisclosed activities related to the development of a nuclear payload for a missile."<sup>31</sup>

Iran's nuclear program poses an existential threat to the existence of Israel. Partly because of this, Israel sees nuclear weapons as a critical deterrent, despite Israel's policy of not officially acknowledging its generally assumed nuclear status.

For other so-called rogue states, nuclear weapons have a particularly attractive quality. As one of the world's most reclusive, oppressive and potentially dangerous states, a nuclear-armed North Korea presents significant challenges to the United States. It is likely that North Korea's leader Kim Jong-Il sees nuclear weapons as a means of ensuring the regime's longevity, as a symbol of national pride and as a tool for deterring the United States from initiating military action.

North Korea has conducted at least two nuclear tests and is continuing to develop its family of No Dong and Taepo Dong ballistic missiles – some of which are capable of delivering payloads to intercontinental distances. It has threatened to turn Japan and

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<sup>30</sup> See for example, Ewan MacAskill and Chris McGreal, "Israel Should Be Wiped Off Map, Says Iran's President," *The Guardian*, Oct. 27, 2005, at <http://www.guardian.co.uk/world/2005/oct/27/israel.iran>, and Stan Goodenough, "Iran – Again – Threatens To Wipe Israel Off the Map," April 15, 2008, *Jerusalem Newswire*, at <http://www.jnewswire.com/article/2417>.

<sup>31</sup> IAEA Board of Governors Report, "Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions 1737 (2006), 1747 (2007), 1803 (2008) and 1835 (2008) in the Islamic Republic of Iran," Feb. 18, 2010.

South Korea into a “sea of fire” in the event of conflict and its belligerent actions have raised concerns among countries in the region regarding its nuclear ambitions.

In addition, North Korea is one of the world’s greatest proliferators of nuclear technologies, and evidence links North Korea to the nuclear programs of other countries, including Iran and Pakistan. The North Korean regime’s nuclear weapons program is unlikely to be moderated by U.S. nuclear weapons reductions or arms control agreements.

Even among generally like-minded allies, the United States may be the only nuclear weapons state that views nuclear weapons as having declining utility in addressing contemporary threats. Both Britain and France not only maintain their independent nuclear deterrents, but have committed to modernizing their nuclear capabilities. This reflects a recognition that even in the post-Cold War world nuclear weapons continue to play a vital role in ensuring national security. For example, in January 2006, then-President Jacques Chirac of France declared: “The leaders of states who use terrorist means against us, as well as those who would consider using, in one way or another, weapons of mass destruction, must understand that they would lay themselves open to a firm and adapted response on our part. This response could be a conventional one. It could also be of a different kind.”<sup>32</sup>

On March 21, 2008, French President Nicolas Sarkozy called maintenance of the French nuclear deterrent “fundamental to our security” and stated: “All those who would threaten our vital interests would expose themselves to severe retaliation by France resulting in damages unacceptable to them, out of proportion with their objectives. Their centers of political, economic and military power would be targeted on a priority basis.”<sup>33</sup> Likewise, the recent Strategic Defence and Security Review reaffirmed Britain’s commitment to a continuous deterrent capability.

[L]arge arsenals remain and the risk of nuclear proliferation continues. We cannot discount the possibility that the number of states armed with nuclear weapons might increase. Equally there is a risk that some countries might in future seek to sponsor nuclear terrorism. We must not allow such states to threaten our national security or deter us and the international community from taking the action required to maintain regional and global security.<sup>34</sup>

Indeed, many countries – friend and foe alike – consider nuclear weapons to be a central element in their security calculus. Their views are based more on regional security considerations than on the level of nuclear weapons in the American arsenal.

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<sup>32</sup> “Chirac: Nuclear Response to Terrorism is Possible,” *The Washington Post*, Jan. 20, 2006. Available at: <http://www.washingtonpost.com/wp-dyn/content/article/2006/01/19/AR2006011903311.html>.

<sup>33</sup> Steven Erlanger, “Sarkozy Defends France’s Nuclear Arsenal,” *The New York Times*, March 21, 2008.

<sup>34</sup> Prime Minister David Cameron, *Securing Britain in an Age of Uncertainty: The Strategic Defence and Security Review*, London, October 2010, p. 37.

For this reason, the administration's focus on reducing nuclear weapons and moving toward a world without them bears little relevance to the realities of a multipolar world in the third atomic age.

### ***The Obama Administration's Nuclear Posture Review***

After months of internal dispute and delay, the Obama Administration released its Nuclear Posture Review in April 2010. Importantly, this new NPR identifies the threat of nuclear weapons in the hands of terrorists as the greatest nuclear threat facing the United States today, noting:

Concerns have grown in recent years that we are approaching a nuclear tipping point – that unless today's dangerous trends are arrested and reversed, before very long we will be living in a world with a steadily growing number of nuclear-armed states and an increasing likelihood of terrorists getting their hands on nuclear weapons.<sup>35</sup>

In a statement on the NPR, President Obama announced that “for the first time, preventing nuclear proliferation and nuclear terrorism is now at the top of America's nuclear agenda.”<sup>36</sup> Yet it is difficult to see how the NPR – which establishes the foundation for decisions affecting the size and composition of the U.S. nuclear arsenal over the next five to 10 years – will in any way impact the desire of terrorists to acquire or even to use nuclear weapons.

Beyond reducing the number of deployed U.S. nuclear warheads from 2,200 to 1,500 as specified in the new START pact, the Obama NPR identifies three “key elements” for preventing nuclear terrorism and proliferation. These include: strengthening the Nuclear Non-Proliferation Treaty (NPT) and restoring Iranian and North Korean compliance with it; securing all nuclear materials worldwide; and pursuing additional arms control efforts “as a means of strengthening our ability to mobilize broad international support for the measures needed to reinforce the non-proliferation regime....” In addition, the NPR declares that the United States will hold “fully accountable” any state or non-state actor that supports or facilitates terrorist acquisition or use of nuclear weapons.<sup>37</sup>

While these are noble goals, none of the policies advanced in the NPR are likely to achieve them. As previously noted, the desire for nuclear weapons among terrorists and other state and non-state actors is not a function of the size or composition of the American nuclear arsenal. Both Iran and North Korea have already reacted to the NPR by renewing their commitments to their respective nuclear programs. Iran has accused

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<sup>35</sup> Department of Defense, Nuclear Posture Review Report, April 2010, p. vi.

<sup>36</sup> See White House Office of the Press Secretary, “Statement by President Barack Obama on the Release of Nuclear Posture Review,” April 6, 2010..

<sup>37</sup> Nuclear Posture Review Report, op. cit., pp. vi-vii.

the United States of “nuclear blackmail”<sup>38</sup> and North Korea announced an acceleration of its nuclear weapons program. It is difficult to imagine that either country will be shamed back into compliance with the nonproliferation treaty by the “broad international support” that the United States hopes to mobilize as a result of its new nuclear posture. Moreover, while securing nuclear materials to keep them out of the hands of terrorists is a worthwhile pursuit, the most likely weapons to fall into terrorist hands are not the longer-range strategic nuclear ones regulated by the new START treaty, but the smaller, tactical nuclear weapons – of which Russia has thousands and which are unconstrained by this new bilateral arms control agreement.

Unfortunately, the laudable non-proliferation goals enunciated in the new NPR are unlikely to be realized by the policies it adopts. As previously mentioned, it is America’s conventional superiority, not its nuclear arms, that fuels the appetites of others for nuclear weapons. Yet it is precisely this conventional preeminence that allows the United States the luxury of contemplating additional nuclear force reductions. If conventional predominance is an enabler of nuclear reductions, how then to convince those who suffer from relative conventional inferiority of the wisdom of foregoing all nuclear weapons? The failure of the NPR to address this inconsistency is one of its greatest internal contradictions and shortcomings.

The NPR reflects the administration’s strong distaste for things nuclear. It retreats from the policy of “calculated ambiguity” that has been a central element of American deterrence policy for decades by ruling out the threat of nuclear retaliation against certain countries, even if the United States is attacked with chemical or biological weapons. It prohibits the development of any “new” nuclear weapons, preferring to counter 21<sup>st</sup> century threats with 20<sup>th</sup> century capabilities – a policy that would rightly be condemned as foolhardy if applied to any other type of weapon. (In fact, the administration trumpets our ability to maintain a conventional technological edge, promising that in this realm we will remain “second to none.”<sup>39</sup>) It embraces traditional Cold War-style arms control agreements with Russia that were the hallmark of an adversarial relationship at a time when the bilateral nuclear balance between the United States and Soviet Union was a determinant factor in international geopolitics – a strategic situation now consigned to the dustbin of history and relevant mostly to academics and historians. And it clearly enunciates the desirability of a world without nuclear weapons and the importance of having the United States “set an example” for the rest of the world to follow toward that goal.

Yet in the context of an emerging and inevitably less stable multipolar nuclear power balance, and with little understanding of how proliferation of weapons of mass

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<sup>38</sup> Letter to the President of the United Nations Security Council, President of the UN General Assembly, and UN Secretary General from Mohammad Khazaei, Iran’s Ambassador to the United Nations, April 13, 2010.

<sup>39</sup> See the comments of James N. Miller, Principal Deputy Under Secretary of Defense for Policy, “Special Briefing on New Nuclear Posture Review, from the Pentagon” available at <http://www.defense.gov/transcripts/transcript.aspx?transcriptid=4600>.

destruction to terror groups and other non-state actors will affect international life, it better behooves the United States to set a clear strategic course than set an empty moral example. A morally informed strategy must still be a strategy, an exercise in statecraft, not pure philosophy. Further, the increasingly fissiparous nature of global politics and power is likely to increase the demand of American-backed security guarantees, including U.S. deterrence of increasingly widespread nuclear capabilities. In this context, the Obama Administration's desire to eliminate nuclear weapons appears like a Cold War anachronism, an embrace of American decline and a weariness of the burdens of being a "sole superpower." As an anxious world turns toward Washington, Washington turns away. And, ironically but inevitably, such perceptions will encourage the very nuclear proliferation they are intended to prevent.

### ***What Is to Be Done: Strategy***

The changing strategic realities of the contemporary security landscape necessitate a new U.S. nuclear strategy for the third atomic age. In a multipolar nuclear world, this strategy must be flexible and adaptable to deter a range of nuclear threats simultaneously, including those posed by major nuclear powers, so-called rogue states, "failed" nuclear states, and non-state actors such as terrorist groups.

As the proliferation of nuclear weapons technologies continues to spread, the need for effective deterrence increases. Some believe – and as the Obama NPR suggested – that we are on the verge of a critical moment where a number of non-nuclear countries may decide to "go nuclear." As the Commission to Assess the Strategic Posture of the United States (commonly known and thus hereafter referred to as the "Strategic Posture Commission") reported, "If we are unsuccessful in dealing with current challenges, we may find ourselves at a tipping point, where many additional states conclude that they require nuclear deterrents of their own. If this tipping point is itself mishandled, we may well find ourselves faced with a cascade of proliferation."<sup>40</sup>

In addition to nation-states – either emerging great powers or so-called rogue states – the emergence of non-state actors as significant threats to be deterred poses a qualitatively new set of challenges in the post-Cold War world. The importance of defeating the aims of terrorist groups has already been noted, but the difficulties of doing so are significant. Terrorist groups such as al Qaeda operate through global networks and pose qualitatively different deterrence challenges. Despite these challenges, there is little disagreement that they are actively seeking to obtain weapons of mass destruction and that – if they possessed the capability to deliver a nuclear weapon to an American target – they would do so in the name of the religious extremism that fuels their hatred for America and the West.

Disagreement does exist, however, over whether such groups can be deterred and, if so, whether nuclear weapons can play a role in that deterrence. Some argue that such actors are inherently undeterrable, given their philosophy and animosity toward the West.

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<sup>40</sup> "America's Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States," Washington, D.C., 2009, pp. 9-10.

Because terrorism is seen by many as the greatest post-Cold War threat facing the United States today, it is sometimes argued that nuclear weapons lack relevance in combating this problem.

There is general consensus that the threat of nuclear retaliation lacks credibility against a group of extremists who do not act on behalf of a state, who welcome “martyrdom” and who would not think twice about taking the lives of as many “infidels” as possible. That, however, does not mean that nuclear weapons can play no meaningful role in deterring terrorist behavior. Most terrorist groups operate with the support of state sponsors, who provide sanctuary, funding, training or other types of support for their activities. Those state sponsors may think twice about providing such support if they believe their actions will expose them to risk in the event of a terrorist attack by those they support. As the 2006 National Strategy for Combating Terrorism stated, “The United States and its allies and partners in the War on Terror make no distinction between those who commit acts of terror and those who support and harbor terrorists. Any government that chooses to be an ally of terror has chosen to be an enemy of freedom, justice and peace. The world will hold those regimes to account.”

While this was a Bush-era document, the point was long a tenet of U.S. policy. And the Obama NPR reiterates “the U.S. commitment to hold fully accountable any state, terrorist group or other non-state actor that supports or enables terrorist efforts to obtain or use weapons of mass destruction, whether by facilitating, financing or providing expertise or safe haven for such efforts.”<sup>41</sup>

In short, not only do nuclear weapons continue to play a role in deterring traditional threats from potential nuclear adversaries such as Russia and China, they also play a critical role in deterring rogue regimes and in raising the potential costs to those who would support terrorist groups. Yet recent changes in American nuclear policy that downplay the role of nuclear weapons and U.S. nuclear retaliatory threats suggest it may be more difficult to dissuade state sponsors of terrorism from lending support to terrorist groups.

### ***The Role of Nuclear Weapons in U.S. National Security Strategy***

No war has been started by nuclear weapons. But World War II, a devastating global conflict, was ended by them. Nuclear weapons have also been credited with preventing and avoiding war – in particular, the “World War III” nightmare of the Cold War-era.

As suggested above, nuclear weapons have enduring value as a deterrent – for example, as a deterrent to attack by nuclear-armed great powers and a deterrent to continued support of terrorist groups and actions by their state sponsors; when possessed by adversaries, they may also be a deterrent to the exercise of U.S. freedom of action.

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<sup>41</sup> Nuclear Posture Review Report, op. cit., p. vii.

Deterrence is a key – some would say the central – objective of U.S. nuclear forces. Yet nuclear weapons have long had a role in U.S. strategy beyond deterring a nuclear attack. During the Cold War, U.S. policy viewed nuclear weapons as an “extended” deterrent to a Soviet conventional attack in Europe. Since the United States abandoned its offensive chemical and biological weapons programs, U.S. nuclear forces have also played a role in deterring attack from those types of weapons of mass destruction. The 2010 Nuclear Posture Review scales back this deterrent role for nuclear weapons, at least in terms of declaratory policy, by narrowing the conditions under which the United States would threaten nuclear retaliation against non-nuclear states. It also envisions a day when the “sole purpose” of nuclear weapons will be to deter nuclear attack.<sup>42</sup> This marks a profound shift in U.S. nuclear strategy.

Yet, traditionally, the value of U.S. nuclear forces has gone well beyond deterrence, be it nuclear or extended deterrence. The 2001 Nuclear Posture Review highlighted the role nuclear weapons can play in assurance, dissuasion and defeat, all constants in past U.S. strategy.

The defeat criterion is directly related to deterrence in that it involves considerations regarding the effectiveness and credibility of U.S. nuclear forces. In other words, if U.S. nuclear weapons do not possess the military characteristics that would make them useful in a conflict, will they still be seen as a credible deterrent?<sup>43</sup> To successfully deter attack, U.S. nuclear weapons must be seen as credible, and that involves convincing an adversary that they are usable and will be used, if necessary. Unfortunately, the American distaste for things nuclear has arguably weakened the credibility of the U.S. nuclear deterrent.

During the Persian Gulf War in 1991, the United States threatened Iraq with “terrible consequences” if Saddam Hussein used chemical weapons against U.S. forces – a threat that was intended to imply the risk of nuclear retaliation. This rhetoric expresses a chilling reality, but one that lies at the heart of deterrence: the promise of certain pain must be seen – seen in the mind of an enemy – to outweigh the prospect of any gain. Although the threat apparently accomplished its goal and Hussein did not employ chemical weapons, U.S. policymakers later admitted that the United States never actually intended to use nuclear weapons during the conflict. As Clark Murdock has pointed out, “It’s hard to make credible threats when you tell the world (including future adversaries) that you were bluffing the last time you made one.”<sup>44</sup> More recently, Gen. James Cartwright, Vice Chairman of the Joint Chiefs of Staff, reportedly questioned whether any President would use nuclear weapons in a conflict, telling an interviewer, “who is not going to take [as] incredibly serious the use of a nuclear weapon?... It is going to

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<sup>42</sup> Nuclear Posture Review Report, op. cit., p. 16.

<sup>43</sup> Former Secretary of Defense Robert McNamara, in testimony before the Senate Armed Services Committee in 1963, stated: “...any force that has such characteristics that it cannot be thought of as an operating force cannot serve as a deterrent, and therefore unless one has a force for which one has an operational plan, one, in my opinion, does not have a credible deterrent.”

<sup>44</sup> Clark A. Murdock, “The Department of Defense and the Nuclear Mission in the 21<sup>st</sup> Century: A Beyond Goldwater-Nichols Phase 4 Report,” Center for Strategic and International Studies, March 2008, p. 18.

change...all of our futures when we start using these things....”<sup>45</sup> In undercutting the certainty of nuclear pain, Cartwright also undercuts the value of nuclear deterrence.

Some argue that advanced conventional capabilities have matured to the point where they can substitute for nuclear weapons. General Cartwright has stated that ensuring “conventional can substitute for nuclear” is “my first priority.”<sup>46</sup> While it is true that U.S. conventional weapons systems have grown in accuracy, lethality, and overall capability, it is not necessarily the case that non-nuclear weapons can defeat all targets considered important to an adversary’s leadership. Indeed, given the advantages possessed by the United States in conventional military capabilities, adversaries have undertaken significant efforts to protect their critical assets from attack and remove vulnerabilities, in some cases by burying targets underground. Indeed, it is always the case that accuracy is not a direct substitute for lethality or pure destructive power.

As John Foster and Keith Payne have pointed out, “military threats may emerge that can only be countered with confidence by nuclear weapons. Nuclear weapons may be the only means available for promptly destroying hard and deeply buried targets, achieving prompt war termination, preventing an adversary from marching on and annihilating civilian centers, or for possibly eliminating nuclear or biological threats arrayed against the United States and allies.”<sup>47</sup>

Let us be plain: whether non-nuclear weapons can substitute for nuclear weapons in their ability to defeat enemy targets is less important to deterrence than an adversary’s *perception* of whether nuclear weapons would be used. After all, what matters is not what *we* consider sufficient for deterrence, but what those who we are seeking to deter consider sufficient. This highlights the fact that the requirements for effective deterrence are not absolute and cannot be known definitively. Deterrence is more art than science. And while it is difficult to predict with certainty the exact levels and capabilities that will deter all adversaries in all cases, it is not unreasonable to assume that, in certain cases, only nuclear weapons that are seen as credible military tools may have the requisite deterrent effect on others. As Gen. Kevin Chilton, commander of U.S. Strategic Command, recently testified, “the nuclear weapon has a deterrent factor that far exceeds a conventional threat.”<sup>48</sup>

Nuclear weapons may also be useful in dissuading adversaries from seeking to match U.S. capabilities or take actions contrary to U.S. interests. In some cases, the dissuasive effect of nuclear weapons may have more to do with the size of the U.S.

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<sup>45</sup> Elaine M. Grossman, “Senior U.S. General Sees high Nuclear Threshold,” [GlobalSecurityNewswire.org](http://GlobalSecurityNewswire.org), 22 October 2007.

<sup>46</sup> Ibid.

<sup>47</sup> John S. Foster, Jr. and Keith B. Payne, “What Are Nuclear Weapons For?,” Forum on Physics and Society of the American Physical Society, vol. 36, no. 4, October 2007.

<sup>48</sup> Testimony before the Strategic Forces Subcommittee of the House Committee on Armed Services, March 16, 2010.

nuclear arsenal than with its mere existence.<sup>49</sup> In the emerging multipolar nuclear world, this question of size must be reconsidered. To put the principle in sum: The future U.S. force must be suitable for deterring multiple threats, under widely varying strategic circumstances, at the same time. While quantifying that capability may be difficult, that is the new measure of deterrence. And, really, that's the point: We don't yet know what the "right number" is, or even have a clear way to begin to calculate it.

As the Secretary of Defense Task Force on DoD Nuclear Weapons Management (the "Schlesinger Commission") concluded, "The strategic role of nuclear capability is to deter and dissuade current and emergent enemies from attacking the United States and its vital interests. To be successful in this critical national objective, the nation's nuclear forces must be demonstrative and credible, and—to be so—survivable against a preemptive attack. This combination of capability, credibility and survivability presents high uncertainty to a potential adversary in attempting to anticipate the success of executing one or more courses of action."<sup>50</sup>

Nuclear weapons play a critical role in assuring friends and allies of the U.S. commitment to their security. Both the 2001 and 2010 NPRs reaffirmed this fundamental purpose of American nuclear power. This assurance effect plays an important nonproliferation role as well. U.S. nuclear forces provide an "extended deterrent" to roughly 30 other countries. According to a State Department advisory board, "There is clear evidence in diplomatic channels that U.S. assurances to include the nuclear umbrella have been, and continue to be, the single most important reason many allies have foresworn nuclear weapons."<sup>51</sup> As the Strategic Posture Commission noted, "Extended deterrence, for example, reinforces nonproliferation, by assuring U.S. allies and friends that they need not create independent nuclear deterrents of their own to be secure.... Our non-proliferation strategy will continue to depend upon US *extended deterrence strategy* as one of its pillars."<sup>52</sup>

In the words of the Schlesinger Commission, "Assurance is largely a matter of psychology: It is our allies who will ultimately decide whether our posture adequately assures, not the United States. Our nuclear deterrent has been the cornerstone of collective security in both NATO and our Asian alliances — in its absence, a number of allies in both Asia and Europe might be motivated to acquire their own nuclear weapons. Thus, our extended deterrent is important to our nonproliferation policy."<sup>53</sup>

It is imperative that the United States maintain a nuclear capability sufficient to assure allies that their security will be protected and to dissuade them from seeking their

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<sup>49</sup> In other words, a sizable nuclear force may dissuade others from seeking to match it; however, minimum-size nuclear force may actually encourage others to seek nuclear "parity." This point is addressed more fully in the Arms Control section of this paper.

<sup>50</sup> Phase II Report of the Secretary of Defense Task Force on DoD Nuclear Weapons Management, December 2008, p. iv.

<sup>51</sup> See the Department of State's International Security Advisory Board report, "Discouraging a Cascade of Nuclear Weapons States," Oct. 19, 2007, p. 23.

<sup>52</sup> Strategic Posture Commission, op. cit., pp. 94, 125.

<sup>53</sup> Phase II Report, op. cit., p. 8.

own nuclear weapons capabilities. Because the requirements for assurance may vary depending on the allies we are trying to assure, it is critical to take allied views into account in determining the appropriate size and composition of U.S. nuclear forces.

In place of a caution in nuclear calculus and an appropriate modesty in the face of great strategic uncertainty, the Obama Administration's nuclear program substitutes the hubris of precision. For example, the NPR calls for the elimination of the nuclear variant of the Tomahawk land attack missile (TLAM-N), one of the non-strategic nuclear systems viewed as central to extended deterrence in Asia. In addition, some of America's NATO allies have expressed concern – in light of the administration's desire to move toward a nuclear-free world – that U.S. non-strategic nuclear forces in Europe will be removed. These weapons have bolstered extended deterrence by serving as an important link between conventional forces in Europe and America's central strategic forces. The NPR states that any decision to remove these weapons from Europe must be an alliance decision – although clearly the vision of a nuclear-free world cannot be realized as long as they remain. These systems face a potentially greater near-term elimination risk because of their relatively small numbers and uncertainty over their mission in today's strategic environment.

In speaking about the future course and direction of U.S. nuclear forces, the Obama Administration has focused on the need to maintain the safety, security, and *effectiveness* of the U.S. nuclear deterrent. However, this is different than ensuring the nuclear deterrent's *credibility*, which does not seem to be of equal concern. While the two concepts of effectiveness and credibility are related, they are not the same. The effectiveness of U.S. nuclear weapons is a function of their physical and operational characteristics. It is something that we can control. The credibility of the U.S. nuclear deterrent is a function of their geopolitical and strategic value, and of how others view our commitment to employ them, if necessary, in their defense. This goes beyond simple calculations of a weapon's effectiveness.

The first rule of strategy in uncertain times is Hippocratic: First, do no harm. It *may* be that new nuclear conditions may allow for arms control and force reductions. But absent an explicit and more detailed analysis along the lines sketched earlier, the administration's cut-first, think-later approach is strategically risky and potentially lethal. A better first step would be to bend the process of arms control negotiations – which under President Obama have again become an end in themselves rather than a means of securing American interests – to some larger policy purpose.

### ***The Role of Arms Control in National Security Strategy***

During the Cold War, arms control became the hallmark of the bilateral U.S.-Soviet relationship. It was intended to bound the strategic competition between the two superpowers. It was also seen by some as a recognition of the importance of the U.S.-Soviet relationship to global strategic stability.

Significantly, arms control was the embodiment of an adversarial relationship. From the Strategic Arms Limitation Talks (SALT) to the Strategic Arms Reduction Talks (START), the negotiation of arms control treaties was a lengthy and torturous process. The American investment in Cold War arms control negotiations was immense. The original START Treaty, for example, took nine years to negotiate and is 700 pages long. It contains detailed accounting rules that count some non-nuclear systems as though they are nuclear-armed and extensive monitoring and verification provisions that reflected both sides' distrust of each other. Such treaties became a focus of and, in many ways, a substitute for broader strategy-making, or at least nuclear strategy-making.

With the end of the Cold War and the adversarial relationship with Russia, the importance of traditional arms control declined. American horizons widened and other nuclear and ballistic missile threats such as that posed by North Korea became more important. Consequently, the Bush Administration withdrew from the 1972 ABM Treaty in order to allow the initial deployment of missile defenses to proceed and decided to tailor the size and composition of U.S. nuclear forces independent of Russia's actions. This led to the Moscow Treaty, requiring both the United States and Russia to reduce the number of their operationally deployed strategic nuclear weapons to between 1,700 and 2,200 by the end of 2012.

In contrast to START, the Moscow Treaty was only three pages long, took six months to negotiate, contained no artificial counting rules and was not burdened with a detailed monitoring and verification regime. Importantly, it codified the direction the United States was already taking with respect to its nuclear forces. In fact, the United States reached the limits required under the treaty in 2009, three years earlier than the treaty required. Further, the Moscow Treaty stood traditional arms control on its head. The treaty's limits were not arbitrary; rather, they were derived from the results of the 2001 Nuclear Posture Review, which in turn resulted from an examination of the nation's nuclear weapons requirements in light of the changed security environment. The U.S. negotiating position emerged after a deliberate review of U.S. nuclear weapons strategy and requirements.

Unfortunately, it now appears that, for the Obama Administration, arms control again has become an end in itself, with the new START agreement as only the first step in the process of applying the "strategic stability" criteria of the first atomic age to the third. Under this START, the United States and Russia will reduce their strategic nuclear forces to between 1,500 and 1,675 warheads on 500 to 1,100 launchers (strategic nuclear delivery vehicles). But continued reductions in the U.S. nuclear arsenal may actually work against that goal. Such reductions may encourage other nuclear powers to seek to match the United States in nuclear capability. For example, China is currently considered to have a modest strategic nuclear capability. Yet setting the level of U.S. nuclear forces too low may provide an inducement for China to seek nuclear "parity" with the United States. Equally worrisome, such force levels are well within the technological and financial grasp of Beijing and would be thoroughly consistent with the long-running and broad modernization of the People's Liberation Army. It may also encourage those without nuclear weapons to seek to acquire them, as the threshold for achieving nuclear

“superpower” status becomes significantly lowered. The strategic value of a relatively small arsenal – that is one reflecting a “warfighting” posture beyond a minimum deterrent – would be as critical for lesser states as it appeared to be for the United States and the Soviet Union in the Cold War.

In addition, it can be argued that the level of U.S. nuclear forces bears directly on the credibility of the U.S. “extended deterrent” and the assurance of allies. Significantly lower levels of nuclear forces may lead allies to question the continued viability of the U.S. “nuclear umbrella,” particularly in the emerging multipolar context. As the Schlesinger report noted: “The United States has extended its nuclear protective umbrella to 30-plus friends and allies as an expression of commitment and common purpose as well as a disincentive for proliferation.”<sup>54</sup> It is not inconceivable that some of these countries may view continued reductions in the U.S. nuclear arsenal as a sign of a weakened commitment to the role of nuclear weapons in extended deterrence. As a consequence, some may be tempted to seek their own independent nuclear capabilities, while others, notably India and Pakistan, would have strong incentives to increase their arsenals. Nor is the logic of “extended deterrence” the sole purview of the United States. Other nations would no doubt wish to protect allies – or proxies – by nuclear as well as conventional or irregular means.

The question that needs to be asked (and answered) is whether further nuclear reductions make the United States safer.<sup>55</sup> If they contribute to a proliferated world – where other nuclear powers seek “parity” with the United States and non-nuclear powers seek to acquire nuclear weapons, then the answer is unequivocally “no.” Unfortunately, U.S. policy seems to be drifting in this direction without any comprehensive analysis of the implications of this course. Arms control can be a useful tool of strategy, but it is not a strategy itself.

In sum, U.S. nuclear strategy for the third atomic age must balance the need to deter a range of adversaries and potential adversaries with the need to assure allies of the U.S. commitment to their security. It must also protect Americans and extend that protection to America’s friends and allies should deterrence fail. It must preserve the credibility of U.S. nuclear forces despite the desire to reduce them. And it must dissuade nuclear proliferation rather than encourage it. These are significant challenges in a world where multiple parties possess nuclear weapons. Indeed, it is difficult to imagine a development more corrosive to the current American-led, American-backed international system than a competition among multiple nuclear powers.

### ***A New ‘New Look’: Implications for Doctrine, Force Structure and Programs***

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<sup>54</sup> Phase Two Report, op. cit., p. iv.

<sup>55</sup> Many years ago, strategist Herman Kahn put the question thusly: “The objective of nuclear weapons policy should not be solely to decrease the number of weapons in the world, but to make the world safer – which is not necessarily the same thing.” *Thinking About the Unthinkable in the 1980s*, Simon and Schuster, New York, 1984.

And so it is vital to align U.S. nuclear strategy and forces to the requirements of the third atomic age. Some of those requirements are of long standing; others reflect more recent shifts in the global security environment, both subtle and seismic. Nevertheless, the trends in U.S. nuclear policy – as reflected in the Obama Administration’s Nuclear Posture Review – are out of alignment with the demands of an increasingly multipolar nuclear world.

The first order of business is to reconsider current nuclear doctrine. The traditional objective of deterring attack on the homeland remains central, even though it is arguably more challenging as a result of the multiplicity of state and non-state actors posing a threat to the United States. Deterring the use of nuclear weapons against the U.S. homeland presents one set of challenges and is complicated by the fact that a nuclear attack can take several forms and come from more actors than in the first and second atomic ages. Moreover, using American nuclear forces to deter attacks with other weapons of mass destruction such as chemical or biological agents has likewise become more challenging in light of the proliferation of these technologies among hostile parties.

As noted above, the new NPR re-validates the continuing importance of assuring allies of the U.S. commitment to their security by extending the so-called “nuclear umbrella.” Preventing aggression against or intimidation of U.S. friends and allies through this American extended deterrent requires that U.S. nuclear forces be perceived as credible by allies and adversaries alike. This not only necessitates a commitment to maintaining their effectiveness and reliability, but requires a nuclear arsenal of sufficient size and composition to be viewed as credible. The size must reflect an aggregation of the dangers, not simply be pegged to a single threat as in the Cold War. It may be time to borrow a rule of thumb long observed by the British Royal Navy: Perhaps the U.S. nuclear arsenal should be as large as the total of the next two or three most pressing potential adversaries.

Indeed, the United States is facing a situation where it may need to cover a larger number of countries with a smaller “umbrella.” Continued NATO enlargement will expand the number of countries whose security is guaranteed by the extended nuclear deterrent provided by U.S. nuclear forces. Regional concerns over Iran’s nuclear weapons program may also bring other nations into the circle of U.S. security guarantees. In July 2009, Secretary of State Hillary Clinton raised the prospect of extending “a defense umbrella” over the Gulf region to protect U.S. partners wary of Iran. Yet the Obama Administration has committed to significant reductions in the nuclear forces that provide this extended deterrent. Extending American security guarantees to others in the face of nuclear threats may place increasing stresses on a smaller nuclear force already burdened with responsibility for deterring attacks on the U.S. homeland.

The requirements for deterrence and assurance may not be identical. Deterrence depends on the perception of adversaries whereas assurance depends on the perceptions of those friends and allies we seek to assure (or reassure). It is possible that some allies may not be reassured by a reduced American strategic arsenal even though U.S. adversaries may still be deterred at lower levels. Because the requirements for deterrence and assurance may therefore be different, further reductions in the level of U.S. nuclear forces should be informed by a thorough understanding of the impact of such reductions on allied perceptions and decision making. Additional U.S. nuclear force reductions that may appear prudent in the context of deterrence may be imprudent if they result in allies challenging the credibility of U.S. nuclear guarantees. This, in turn, may lead allies to seek other ways to defend themselves, including acquiring nuclear weapons themselves. Such a development would be a serious setback to U.S. policy.

At least equally important as the numbers are the composition, characteristics and capabilities of residual U.S. nuclear forces. For deterrence to function credibly, the nuclear forces on which it is based must be effective and reliable – and be seen to be so. This suggests serious attention should be paid to what is referred to as the “nuclear enterprise.”

The nuclear enterprise includes the industrial base that underpins the technical functioning of nuclear weapons and ensures their continued operational efficacy. Yet several developments have combined to elevate doubts about the effectiveness, reliability and credibility of the U.S. nuclear deterrent, as well as the willingness of the United States to use nuclear weapons in the defense of others. For example, senior-level inattention to nuclear matters (reflected in shoddy stewardship and poor oversight of day-to-day operational nuclear weapons activities), a declining reservoir of talented nuclear physicists, engineers, designers and other scientific specialists, the continued moratorium on underground nuclear testing, a prohibition on development of “new” nuclear weapons and capabilities, and a general belief in the disutility of nuclear weapons in the 21<sup>st</sup> century (reflected in the President’s calls for the global elimination of such weapons), have combined in ways that fuel concerns that the U.S. nuclear arsenal is losing its capacity to deter effectively.

The consequences of this inattention to nuclear matters have also affected the defense industry that builds and tests the capabilities on which deterrence rests. The number of defense industry specialists with expertise in nuclear matters has declined dramatically. Resources devoted to nuclear weapons research and the procurement of nuclear related hardware, such as missiles and their components, has also declined. The national laboratories have also seen a shift in their mission since nuclear testing ended in 1992.

Maintaining the effectiveness and reliability of U.S. nuclear weapons in light of an enduring moratorium on explosive testing will require some degree of weapons modernization. As Secretary of Defense Gates noted in a 2008 speech before the Carnegie Endowment for International Peace, “ To be blunt, there is absolutely no way

we can maintain a credible deterrent and reduce the number of weapons in our stockpile without either resorting to testing our stockpile or pursuing a modernization program.”<sup>56</sup>

Nuclear weapons modernization is seen by some as synonymous with a nuclear “warfighting” approach. Yet modernization of the U.S. nuclear arsenal would be beneficial on several levels. First, it would allow the dwindling reservoir of nuclear weapons-related scientific skills to be exercised in a practical way. Second, it would help transform a legacy arsenal that is populated with weapons designed for Cold War type threats to one more appropriately configured for contemporary security challenges. Third, it would be a concrete demonstration of the continuing utility of nuclear weapons, even in the face of an understandable desire to eliminate them. And fourth, it would send a clear message to both allies and adversaries that the United States remains committed to assurance and deterrence.

The President has declared his opposition to any “new” nuclear weapons and Congress has prevented funding even for studies that might lead to the eventual development of newer, safer, more sophisticated, more reliable and more effective nuclear capabilities. The NPR does acknowledge the need to maintain an effective nuclear arsenal and professes the administration’s commitment to strengthening the viability of the overall nuclear enterprise, including the scientific talent necessary to ensure a robust nuclear industrial base. Yet the purpose of strengthening the enterprise, according to the NPR, is to allow for the accelerated *dismantlement* of weapons while maintaining the efficacy of older designs without the need for nuclear explosive testing or the creation of new nuclear capabilities. This prohibition on developing any “new” nuclear weapons or capabilities not only prevents the benefits of modernization noted above but works against the stated goal of encouraging additional scientific and technical “human capital” to enter the enterprise. It is difficult to attract new talent to an enterprise that is seen as having declining value with a pledge that those attracted to it will be barred from creating anything “new.”

Such an approach ignores a critical link between deterrence and the weapons on which it relies. For nuclear deterrence to function effectively, our nuclear weapons must be seen as posing a credible threat. Weapons that are seen as unusable are unlikely to deter reliably. Therefore, the virtual blanket prohibition of the development of “new” nuclear weapons capabilities must be lifted as part of a policy that first and foremost seeks to prevent war, not to fight it. The enduring fact is that credible deterrence is inextricably linked to a prospect for credible warfighting. This includes the attributes discussed above but includes others like proportionality; for example, the large-yield warheads that comprised the Cold War arsenals may not be the most credible deterrent in the shades-of-gray, multipolar, rogue-state environment that will characterize the coming years. The value of more discreet targeting or military options in wars of more limited scope is clear; conversely, “making the rubble bounce,” may not have the same deterrent effect on the North Korean or Iranian leadership as it appeared to have on the Soviets.

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<sup>56</sup> Secretary of Defense Robert M. Gates, “Nuclear Weapons and Deterrence in the 21<sup>st</sup> Century,” Speech before Carnegie Endowment for International Peace, Washington, D.C., Oct. 28, 2008.

While deterrence can be achieved through the threat of punishment, represented most potently by U.S. nuclear forces, it can also be enhanced through denial, i.e., preventing a potential aggressor from achieving his military objectives. Missile defenses can be an effective tool in a “deterrence by denial” strategy.

In the first atomic age, missile defenses were viewed as ineffective and destabilizing. Consequently, their development and deployment was limited by the U.S.-Soviet Anti-Ballistic Missile (ABM) Treaty. With the Soviet Union’s demise and an end to the superpower competition that was the hallmark of the Cold War, the second atomic age saw a reassessment of the value of missile defenses, especially in light of the global proliferation of WMD technologies. The United States withdrew from the ABM Treaty and began initial deployments of missile defenses to protect the United States against limited ballistic missile attacks.

In the third atomic age, missile defenses should play an increasingly important role in both bolstering deterrence and providing a degree of protection against its possible failure. As other nations seek nuclear weapons and the means to deliver them, missile defenses should be global in coverage and protect territories and populations against ballistic missile of all ranges, launched from anywhere, against any target. Yet the administration’s missile defense policy appears to be unbalanced; in favor of protection against short-range missiles at the expense of homeland missile defense capabilities. Here again, the third atomic age seems to be headed in the same direction as the first – with strategic defenses limited in the interest of preserving “strategic stability” with nuclear powers that even the administration acknowledges do not represent the most urgent nuclear threats facing the United States.

## **Force Structure**

Since the 1960s, the number of strategic nuclear delivery vehicles in the U.S. arsenal has declined markedly as land- and sea-based missile launchers have been retired and dismantled and heavy bombers have been reassigned to conventional-only missions.

Today, according to unclassified estimates, the United States deploys a total of 450 land-based Minuteman III ICBMs. All earlier variants of the Minuteman missile have been retired and the 50 Peacekeeper ICBMs (a.k.a. “MX” missile) that were initially deployed in the 1980s have been deactivated, the last being withdrawn from service in 2005. The 450 Minuteman III ICBMs currently deployed are the most modern in a Minuteman series that was originally designed in the 1950s and deployed in the 1960s. Nevertheless, they are approaching the end of their nominal life expectancy. A number of upgrades to the missiles’ guidance, propulsion, power, and communications systems have been made to extend their life expectancy to 2020, but ultimately the Minuteman IIIs will need to be either retired or replaced. However, there is currently no program to replace the Minuteman missile.

The Minuteman fleet will be a big “bill payer” for reductions negotiated under the new START agreement. Given the age of the inventory, and the more complex nuclear

environment, this is a rational choice. But it is too early to be sure there will not be unhappy unintended consequences. Land-based missiles are rapidly retargetable, the most prompt form of second-strike deterrent and, when simply deployed or road-mobile, can be quite survivable. A smaller land-based ICBM must be modernized and more widely deployed to preserve its deterrent value.

Likewise, the number of strategic missile-launching submarines (SSBNs) has declined as older submarines have been removed from service. In addition, a number of SSBNs have been converted to conventional uses, such as cruise missile launchers and special operations forces carriers. The total number of SLBMs carried by these submarines today is less than 300.

The Ohio-class Trident SSBN force is expected to remain operational for several more decades, with the first submarine slated to be decommissioned around 2027. In the meantime, after assessing various alternatives, the Navy has decided to develop an entirely new design for a future SSBN using standardized systems that share commonality with existing D-5 SLBMs and with the U.K.'s Vanguard SSBN program. Given the length of time it takes to move a program from the conceptual to the deployment stage, decisions will need to be made soon and adequate funding provided to avoid block obsolescence down the road.<sup>57</sup>

There is good reason to question whether the current Trident fleet of 14 boats is large enough to provide even minimum deterrence or assurance in the context of the emerging nuclear environment. As argued above, the number of nuclear actors to be deterred is growing rapidly and a force size or posture adequate to deter one – or to assure nervous allies – may not achieve the same deterrent effect toward another. For example, a policy of containment toward a nuclear Iran would demand a continuous U.S. deterrent nuclear posture in the region, for which the Trident-armed Ohio class is the obvious choice, especially because its presence would be far less provocative than any onshore deterrent. At the same time, the volatile strategic situation in the western Pacific, and the huge ranges involved, more likely will require a constant presence of two boats. Further, maintaining a sea-based deterrent in the Atlantic has been a constant requirement. Setting aside any need for an underway, at-sea “reserve,” one can foresee the minimum requirement to have four Ohio-class subs on patrol all the time. But given the traditional 4-to-1 ratio of force generation, such a pattern of deterrent operations may be more than the current fleet could handle.

The number of long-range nuclear bombers has also declined dramatically, as older B-52s have been retired and all B-1B bombers have assumed an exclusively conventional role. The total number of long-range nuclear bombers now stands at roughly 100, comprising B-52H aircraft and less than two dozen B-2s.

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<sup>57</sup> For an additional assessment of the Navy's plans, see Daniel Gouré, “Time to Get Started on the Next Ballistic Missile Submarine,” Early Warning Blog, Lexington Institute, Dec. 14, 2009, posted at <http://www.lexingtoninstitute.org/time-to-get-started-on-the-next-ballistic-missile-submarine?a=1&c=1171>.

Consistent with these platform reductions, the number of operationally deployed strategic nuclear weapons in the U.S. arsenal has declined to its lowest level since the Eisenhower Administration. In accordance with the terms of the 2002 Moscow Treaty, the United States now deploys 1700 to 2200 such weapons. This is a significant drop from the more than 10,000 weapons deployed in the first atomic age and the 6,000 weapons deployed at the apex of the second atomic age.

The decline in the number of deliverable weapons and weapons delivery platforms has raised questions regarding the continued viability of the traditional nuclear “triad” on which deterrence has been based since the dawn of the nuclear age. Some have argued that the triad is an outdated concept that need not be maintained in light of the Cold War’s end and the demise of the Soviet Union. It has also been argued that maintaining three distinct nuclear delivery methods is redundant and costly, squandering funds that could better be spent on capabilities more likely to be used against contemporary threats. Consequently, some have called for moving to a “dyad” of nuclear forces, perhaps eliminating either the ICBM or the bomber leg of the Triad.

Rather than being redundant, each leg of the triad complements the others by providing capabilities and advantages that the other two legs do not possess. For example, the ICBMs enjoy secure communications and are under positive control at all times. Because of their deployment in the American heartland, an attacker must consider the consequences of targeting American weapons on American soil. This alone may be a powerful disincentive to attack. SLBMs on strategic submarines are considered the most survivable element of the triad. And bombers can provide a visible signaling of intent and are the only leg of the triad that is recallable after launch. Bombers and submarines can be “surged” in times of crisis to buttress deterrence at critical moments and in critical places.

Each leg of the strategic nuclear triad has unique strengths and weaknesses. Together, they help ensure that the overall U.S. nuclear deterrent is survivable, flexible, and credible. In light of an emerging multipolar nuclear balance, all three of these characteristics have renewed value. There is no practical reason to consider abandoning the triad at this time. Arguments supporting a dyad (or even a “monad”) of nuclear forces are generally based on simplistic cost considerations or philosophical beliefs that discount the utility of multiple types of platforms and seek to move the United States toward the goal of nuclear elimination.

The Obama Administration’s Nuclear Posture Review reaffirms the utility of the nuclear triad, although the reductions it supports will make it increasingly difficult to maintain a triad that is sufficiently flexible, robust and cost-effective. As a smaller number of weapons is spread among a smaller number of platforms, it becomes increasingly difficult to maximize the deterrence benefits that a triad provides.

As noted above, missile defenses are rising in strategic importance in a world marked by smaller arsenals but a greater number of nuclear states. At the same time, the Obama Administration’s approach reflects a significant shift from that of the Bush

Administration. The Ground-based Mid-course Defense system consisting of some 30 interceptors deployed in Alaska and California was intended to be the first phase of an evolutionary deployment of increasingly robust missile defense capabilities. Instead, the Obama Administration has decided to cap the number of deployed interceptors and to forego any expansion of missile defense interceptors at these sites. This decision was based on “new intelligence” that suggested Iran’s long-range ballistic missile development plans has proceeded less aggressively than anticipated. Given the historical record of the U.S. intelligence community in predicting the acquisition pace of foreign missile programs, and indeed even more recent but contradictory assessments of Iranian progress, such a rationale is less than reassuring. Other promising missile defense programs have been cut or terminated, including the Airborne Laser, the Kinetic Energy Interceptor and the Multiple Kill Vehicle.

The Administration has also shifted its focus toward defending against shorter-range ballistic missile threats and has declared it wants to work with allies to protect them against short- to mid-range missile threats. Yet, in deference to Russian objections, it canceled plans to deploy missile interceptors in Poland and a radar in the Czech Republic that would have been useful in protecting both Europe and the United States from missiles fired from Middle Eastern launch points like Iran. In its place, the Administration hopes to negotiate new agreements with NATO allies to allow the stationing of shorter-range missile defense systems on allied territory and in surrounding waters. Alas, neither the radically improved version of the Navy’s Standard Missile nor the longer-range radar required are anywhere near production let alone deployment. Further, the rapidly shrinking U.S. Navy – with fewer than 280 major ships, compared to more than 600 in the late 1980s – is already “doing more with less.” Relying on Aegis-equipped surface combatants to provide permanent regional missile defense would place an additional demand on a “low-density, high-demand” system. However, the very process of scrapping a negotiation that has already been completed and re-opening a new negotiation with the same countries on a different missile defense deployment plan is likely to complicate the process and delay eventual deployment of any missile defenses on allied territory.

There are sound strategic reasons for moving forward expeditiously with missile defenses. Missile defenses can play a useful role in bolstering deterrence by denying an adversary the ability to accomplish his objectives as a result of a military attack. As an adjunct to strategic nuclear offensive forces, they can prove essential not only in dissuading attacks but in defending against them should deterrence fail. They should not be treated as negotiating chips to be traded away or as politically expendable capabilities abandoned in order to ameliorate the objections of potential adversaries.

### **Program Recommendations**

This paper makes a number of recommendations and supports a nuclear posture based upon the following general principles:

**1. U.S. nuclear weapons serve multiple purposes and the size of the U.S. nuclear arsenal must reflect the varied requirements of those missions.** For example, the requirements for deterrence and assurance are not necessarily the same. As the Strategic Posture Commission concluded, “assurance (of allies) that extended deterrence remains credible and effective may require that the United States retain numbers or types of nuclear capabilities that it might not deem necessary if it were concerned only with its own defense.”<sup>58</sup> Any adjustments to the size or composition of U.S. nuclear forces must take into account the different missions those forces are intended to serve. This paper has, with its discussion of the emerging multipolar nuclear world, simply suggested a range of missions that has yet to be systematically analyzed or understood.

**2. No further reductions should be made to U.S. nuclear forces unless and until it can be demonstrated that such reductions will not negatively impact deterrence or undermine the assurance role of the U.S. nuclear arsenal.** The existence of the American nuclear arsenal has prevented a third world war for more than six decades. Adversaries have refrained from attacking us or our allies because of it. American allies and strategic partners have refrained from developing their own nuclear arsenals because of it. While a world without nuclear weapons is an attractive vision, the ramifications of moving in that direction by “setting an example” for others through further nuclear reductions are potentially serious and may foster nuclear proliferation rather than stem it. Arms control must be subservient to national security requirements. The desire for better relations with Russia must not trump U.S. obligations to protect the security of friends and allies. The Administration’s new Nuclear Posture Review supports the traditional extended deterrent role of U.S. nuclear forces, but its rationalization of additional reductions in those forces as part of a continued movement toward nuclear elimination has raised concerns among some U.S. allies regarding the long-term credibility of U.S. security guarantees. To repeat: The needs of deterrence and assurance in the world now in prospect have yet to be defined, and it is easy to imagine circumstances that might call for a larger and very different U.S. nuclear force.

**3. The strategic nuclear triad should be preserved.** Each of the legs of the triad serves a unique function and compensates for weaknesses and vulnerabilities in the other two legs. Together they provide the most robust, survivable and enduring nuclear deterrent capability. Maintaining the nuclear triad is relatively inexpensive compared to the cost of other defense needs. And the cost cannot solely be measured in dollars but in lives saved and territory protected. But all three legs of the Triad are aging and in need of replacement. To this end, a comprehensive Triad modernization program should be pursued that includes:

**a. Funding and procurement of a new ICBM by 2020 as a replacement to the Minuteman III ICBMs currently deployed.** The 450 Minuteman IIIs have been critical to the effective functioning of deterrence and the ICBM leg of the Triad should not be abandoned.

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<sup>58</sup> William J. Perry, James R. Schlesinger, et al, America’s Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States, Washington, D.C., U.S. Institute of Peace Press, 2009, p. 13.

**b. Development of a new strategic submarine as a follow-on to the Ohio-class Trident SSBN.** The mobility and survivability of this leg of the triad can help provide deterrence not only for the United States but for U.S. allies as well.

**c. A new long-range, manned bomber program to replace older B-52H aircraft that, in many cases, are older than the pilots flying them.** While unmanned aircraft provide new and useful strike capabilities, a manned bomber provides a degree of flexibility and adaptability – from signaling intentions to recall ability – that unmanned strike platforms cannot. Also, a piloted aircraft provides a form of final, positive command and control that is particularly valuable in regard to nuclear weapons.

**4. The United States must retain a strategic nuclear force capable of credibly meeting minimum targeting requirements.** Although deterrence is no longer exclusively based on weapons-to-targets calculations, the credibility of U.S. nuclear posture is measured in part by the ability to hold adversary targets at risk. As the proliferation of nuclear weapons and technologies expands and more nuclear weapons powers emerge on the world stage, it will be more challenging to hold a greater number of potential targets at risk with a smaller number of weapons. To be sure, this is a particularly lugubrious measure of the credibility of U.S. deterrent guarantees and assurances to allies, but a correct calculus, for example, can disperse not only military units but command nodes while moving them well out of range of the bulk of U.S. conventional forces.

**5. U.S. nuclear weapons must be tailored to meet new security requirements. This includes the development of low-yield nuclear weapons that can strike hard and deeply buried targets with minimal collateral damage.** Targets that are deep underground or in protected environments are difficult to hold at risk with existing nuclear forces, whose yields would ensure high levels of collateral damage. The technology exists to improve the accuracy and lower the yields of nuclear weapons in ways that would enhance their effectiveness against hard and deeply buried targets while minimizing collateral damage. But the United States has been prevented from developing these capabilities because they are seen as “new” types of nuclear weapons. As adversaries move toward increased protection of the assets they consider most valuable, the continued credibility of U.S. nuclear deterrence relies on the ability to adapt U.S. nuclear weapons capabilities in ways that can effectively hold those targets at risk.

**6. A major effort to revitalize the nuclear weapons industrial base is essential.** Refocusing attention of the importance of nuclear deterrence and encouraging research and development into new nuclear capabilities more appropriate to meet the evolving nature of today’s security threats is critical to ensuring the continued viability of nuclear deterrence. This means expanded investments in basic science and technology, practical research and development and procurement of hardware, including new delivery platforms and weapons capabilities. The national weapons laboratories should refocus their missions and give greater emphasis to the science and technology associated with ensuring capability improvements to U.S. nuclear weapons.

**7. Missile defenses must be made more robust in light of the expansion of nuclear weapons powers and the proliferation of ballistic missiles and their associated technologies.** A missile defense that only provides minimal protection against limited threats is unlikely to be sufficient against a growing number of parties – including non-state actors – who do not feel constrained from using those weapons against us and who are not swayed by the “logic” of “strategic stability” that was a hallmark of an earlier atomic age. This means increasing the number and capability of deployed ground-based interceptors to protect the United States against long-range missile attacks; expanding global partnerships to allow wider defensive deployments on land and at sea that protect friends and allies against shorter-range missile threats; and moving toward the deployment of space-based missile defenses that significantly expand the defensive perimeter and greatly complicate any aggressor’s attack plans. Boost-phase missile defenses are especially important for negating the threat posed by an adversary’s offensive missiles and should be vigorously pursued.

### *Conclusion*

The third atomic age demands American nuclear capabilities that are flexible, adaptable and resilient in the face of new challenges and emerging threats, the likely rise of additional nuclear powers and the expansion of nuclear strike capabilities among a number of existing nuclear weapon states. Current American policy, however, seems to be moving in the opposite direction.

U.S. nuclear forces are being reduced; new nuclear weapons, capabilities and missions have been proscribed; the conditions under which the United States would threaten nuclear retaliation have been narrowed; the enduring value of nuclear weapons is being challenged; and the vision of a nuclear-free world is being heralded as a desirable – and ultimately achievable – goal, if only the United States leads the way.

We are concerned with the trends evident in the evolution of U.S. nuclear policy. They suggest to us a highly questionable premise; namely, that the mere possession of weapons that have helped keep the peace for more than 60 years is more dangerous to American security today than the motivations of those who may possess – or actually use – them tomorrow. In addition, we suggest that our current nuclear course reflects a failure to understand America’s rise as the dominant global security “provider.” Influence in world affairs has resulted not simply from its liberal philosophy, its commitment to democratic principles and the rule of law or its military-technical superiority in conventional forces, but from the skillful management and prudent application of its nuclear muscle – as both a deterrent to attack and a guarantor of security for others. The implications of this suggest that America has grown weary of the global responsibility it has assumed as a result of its nuclear might and would prefer to shed the burdens associated with global leadership. And this portends additional challenges to America’s supremacy by those who would see U.S. policy as a further sign of American weakness and decline and an opportunity to restructure world affairs more to their own liking.

Surely, such a world is not America's preferred outcome. While a nuclear-free world remains an attractive vision to some, developments suggest we are likely to move in the opposite direction with the emergence of more nuclear powers and a slew of associated attendant risks. The first two atomic ages witnessed the use of a remarkably peaceful, prosperous and liberal international system, led by the United States and its democratic allies and partners. It would be a sad irony if the Third Atomic Age was a step toward a nuclear-free world but a step away from a world of human freedom as well.