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The administration recently announced that it will undertake a review of US nuclear requirements. Ultimately, the answer to the question of “how much is enough?” will be determined by the goals US nuclear forces are expected to serve, the priorities attached to those goals and the standards used to judge their adequacy. For over five decades, those goals have been: 1) the stable deterrence of attacks; 2) assurance of allies via extended deterrence and the “nuclear umbrella”; 3) dissuasion of competitive challenges; 4) defense in the event deterrence fails; and, 5) arms control. Democratic and Republican administrations alike have consistently given priority to these national goals, particularly stable deterrence, extended deterrence and the assurance of allies.

The forces pertinent to these five different goals overlap to some extent, but each also has its own unique requirements. For example, the forces that may be adequate to deter attacks on the United States may not be adequate to assure allies.<sup>1</sup> There also can be competing pressures among these goals. For example, arms control initiatives may be incompatible with force standards for deterrence and assurance. Nevertheless, it is the combination of the requirements needed to support these diverse goals that should set the standards for measuring “how much is enough?”

Measuring the adequacy of US forces in this fashion follows the adage that strategy should drive numbers; numbers should not drive strategy. Of course, other factors such as budget and technical realities will intrude, but we should at least start by linking our definition of overall force adequacy to the standards linked to these goals.

An alternative approach is to start with a level of forces preferred for a specific goal such as arms control, and then mandate that the force requirements for deterrence, assurance, defense and dissuasion conform to those preferred arms control levels. The downside of this approach is that the number and types of forces preferred for arms control purposes may ultimately be out of step with those needed to deter, assure, defend and dissuade—in which case, trade-offs must be made at the expense of these goals.

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<sup>1</sup> The different requirements for deterrence and assurance were best illustrated by Denis Healey, Britain’s Defence Minister in the late 1960s, when he said that, “it takes only five per cent credibility of American retaliation to deter the Russians, but ninety-five per cent credibility to reassure the Europeans.” Denis Healey, *The Time of My Life* (London: Michael Joseph, 1989), p. 243.

The most fundamental question with regard to the forthcoming review of US nuclear force requirements is what goal or set of goals will take precedence when the administration sets the standards to measure the value and adequacy of US forces.

The Obama administration has committed to sustaining effective capabilities for deterrence, assurance and limited defense, and has stated that force reductions must serve the goals of deterrence and assurance.<sup>2</sup> It also has stated that, “*for the first time*” it places “*atop the U.S. nuclear agenda*” international non-proliferation efforts “*as a critical element of our effort to move toward a world free of nuclear weapons.*”<sup>3</sup> This prioritization has led to the concern that the goal of nuclear reductions will take precedence in the calculation of “how much is enough?”—particularly when trade-offs must be made.

This concern was stoked when National Security Adviser Thomas Donilon announced the forthcoming nuclear reviews in the context of a conference and speech devoted to the administration’s arms control agenda and stated specifically that the nuclear reviews are for the purpose of further US nuclear reductions.<sup>4</sup> Under Secretary of State Ellen Tauscher similarly described the purpose of these reviews—to facilitate nuclear reductions on the “journey” toward nuclear zero.<sup>5</sup>

As described, this approach to reviewing US nuclear requirements poses two serious problems: 1) it starts with the answer that further nuclear reductions are warranted; and, 2) it says little or nothing about linking the standards of adequacy for US forces to deterrence, assurance, defense and dissuasion as priority goals.

If the priority goal behind the measure of US nuclear forces is their reduction and ultimate elimination, then other goals such as deterrence, assurance and defense will be subordinated and further nuclear reductions inevitably will be acceptable—if the priority goal is so limited, no other answer could be expected. The conclusions reached on this basis, however, would force our strategies for deterrence, assurance, defense and dissuasion to conform to the lowered force levels deemed desirable for the different goal of further reducing nuclear weapons. That forced fit could undercut our traditional goals of deterrence, assurance and defense.

The administration’s apparent willingness to force that fit may be seen in its 2010 rejection of any new US nuclear warheads to support new military missions or to provide

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<sup>2</sup> Department of Defense, *Nuclear Posture Review Report*, April, 2010, p. xi.

<sup>3</sup> *Nuclear Posture Review Report*, p. vi (italics added); see also p. v.

<sup>4</sup> *National Security Adviser Thomas E. Donilon’s Remarks at the Carnegie International Nuclear Policy Conference, as Prepared for Delivery and Released by the White House*, March 29, 2011.

<sup>5</sup> See the remarks by Ellen Tauscher, Under Secretary for Arms Control and International Security, *The Global Zero “GZ/DC Convention,”* The George Washington University, Washington, D.C., April 8, 2011.

any new military capabilities.<sup>6</sup> This policy direction is intended to promote an arms control agenda, but comes at the *potential* expense of US capabilities important for deterrence, assurance and defense. And, while Russia lists the United States as its greatest threat and places highest investment priority on the modernization of its nuclear forces, an administration official reportedly has stated recently that further cuts in US nuclear forces could be made “independent of negotiations with Russia.”<sup>7</sup> These policies, actions and statements suggest that some in the administration are willing to give precedence to the goal of arms reductions in the critical definition of US force adequacy.

There appear to be two competing dynamics within the Obama administration regarding the prioritization of US strategic goals and the related calculation of force requirements. One generally reflected in the 2010 *Nuclear Posture Review* is committed to sustaining effective strategic capabilities for deterrence, assurance and limited defense; the other places top priority on arms control and movement towards nuclear zero in the calculation of force adequacy. Reconciling these two dynamics will be increasingly difficult and ultimately impossible absent the transformation of international relations.<sup>8</sup> The fundamental question with regard to the administration’s forthcoming nuclear reviews is how these two different views of US priorities and requirements will play out in its calculation of “how much is enough?”

Based on the historical record, we *know* that US nuclear weapons help to deter war and prevent conflict escalation. We also *know* that US nuclear weapons help to assure allies and thereby contribute to nuclear non-proliferation. Finally, we *know* that deterrence can fail and leave us no alternative but to defend. Consequently, we should be wary of any review that does not place priority on the goals of deterrence, assurance and defense.

Various commentators who instead place top priority on movement toward nuclear zero advocate continuing deep reductions—down to levels of 300, 500 or 1000 warheads—all well below the New START Treaty’s ceiling of 1550 warheads. At these much-reduced levels of warheads, they claim the United States could still meet some targeting requirements and thereby retain effective deterrence.

Perhaps, but so subordinating the requirements for deterrence and assurance to the priority goal of further nuclear reductions entails serious potential risks. Most important, the reduced US force posture flexibility and resilience at such low numbers would likely undermine the US capability to adjust to surprising and dangerous political and/or technical developments as may be necessary to deter future wars, assure allies or defend if deterrence fails.

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<sup>6</sup> *Nuclear Posture Review Report*, p. xiv.

<sup>7</sup> Desmond Butler, “Promises: Obama’s mixed results on nukes,” Associated Press, April 5, 2011.

<sup>8</sup> This point is emphasized in William J. Perry and James R. Schlesinger, *America’s Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States* (Washington, D.C.: United States Institute of Peace, 2009), p. xvi.

A minimum standard of force adequacy also could make US forces more vulnerable to opponents' covert or deceptive deployments and ease the technical/strategic difficulties for opponents who seek overtly to counter or get around our deterrence strategies—possibly encouraging some to move in these directions. As such, very low numbers could work against US efforts to dissuade nuclear arms competition with countries such as China.

In addition, at minimal force levels the reduced credibility of our extended deterrent would motivate some allies to seek their own independent nuclear capabilities; i.e., it would contribute to incentives for nuclear proliferation among allies and friends and thus be at odds with the administration's stated top priority.

Finally, minimal nuclear force standards and related policies of Minimum Deterrence almost inevitably lead to targeting concepts that seek deterrent effect from threats to kill large numbers of civilians and/or civilian targets.<sup>9</sup> This is because unprotected civilians and civilian targets are highly vulnerable to limited nuclear threats. Successive US administrations have rightly rejected this approach to deterrence as being incredible, immoral and illegal.

These are the primary reasons why, for five decades, Democratic and Republican administrations have rejected a minimum standard for US force requirements and Minimum Deterrence policies—despite their obvious attraction to many in the arms control community. These reasons remain sound.

Is there room for further reductions in US deployed nuclear forces below New START levels because some now suggest that deterrence could be maintained at 300, 500 or 1000 warheads? The answer must be no, because no estimate of “how much is enough?” *for deterrence alone* is adequate to understand US strategic force requirements. Recall that US forces also serve the purposes of assurance, dissuasion and if necessary defense. Consequently, no calculation of deterrence requirements—no matter how sophisticated--can define the adequacy of US strategic forces.

Is there room for further nuclear reductions simply because a lower number of nuclear warheads could provide an assured retaliatory capability? The answer again must be no. First, not all US retaliatory threats are likely to be credible. In addition, future threats to

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<sup>9</sup>“Likewise, the United States needs relatively few warheads to deter China. A limited and highly accurate U.S. nuclear attack on China's 20 long-range ballistic missile silos would result in as many as 11 million casualties and scatter radioactive fallout across three Chinese provinces...” *Pentagon is Exaggerating China's Nuclear Capability to Justify Buying New Generation of U.S. Weapons, Report Finds*, Natural Resources Defense Council, Press Release, November 30, 2006. See also, Hans M. Kristensen, et al., *From Counterforce to Minimal Deterrence: A Nuclear Policy Toward Eliminating Nuclear Weapons*, Federation of American Scientists and The Natural Resources Defense Council, *Occasion Paper*, No. 7 (April 2009), pp. 2, 31.

us and our allies remain inherently unpredictable in important ways;<sup>10</sup> we will be confronted with unexpected threats because as former CIA Director, George Tenet said, “What we believe to be implausible often has nothing to do with how a foreign culture might act.”<sup>11</sup> As a result our deterrence requirements can shift rapidly across time, place and opponent. Consequently, there is much more to the requirements for deterrence and assurance than simply having the number of warheads necessary to satisfy a targeting policy and maintain a retaliatory threat. The requirements for deterrence and assurance include qualitative factors that may be more important than quantity. Particularly critical are the flexibility and resilience of US forces needed to adapt our deterrence strategies to shifting and unforeseen threats and circumstances.<sup>12</sup> This requirement moves the calculation of “how much is enough?” for deterrence alone well beyond a matter of numbers and targeting policies.

Neither I nor anyone else can legitimately claim to know that a much smaller nuclear force would be adequate to deter future attacks and assure allies in the years ahead. Precisely because future threats and the related requirements for deterrence and assurance are so uncertain, it is critical to sustain the flexibility and resilience of our strategic forces necessary to adapt to future, surprising circumstances. Correspondingly, we must sustain the number and diversity of our force posture necessary for its flexibility and resilience—moving to lower force levels than necessary for this purpose would carry real risk.

If we posit that existing US force levels are adequate for deterrence, assurance and defense, the burden of proof must be on those who claim that moving to a dramatically different, lower level of US nuclear forces would continue to provide adequate support for deterrence, assurance and defense. This proof, however, is nowhere to be found because such claims are inherently speculative and typically based on optimistic assumptions about future threats. The inconvenient truth is that no one knows with any level of confidence how many of what types of nuclear forces will be adequate to deter or assure in coming years because threat conditions and opponents can change rapidly. This again is why sustaining the level of US forces compatible with their flexibility and resilience is so critical.

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<sup>10</sup>As noted recently by both James Clapper and Leon Panetta. See, Leon Panetta, testimony before the House Permanent Select Committee on Intelligence, *World Wide Threats Hearing*, February 10, 2011; and, James Clapper, testimony before the Senate Select Committee on Intelligence, Hearing, *The Worldwide Threat*, February 16, 2011.

<sup>11</sup> George Tenet (with Bill Harlow), *At the Center of the Storm: My Years at the CIA* (New York: HarperCollins, 2007), p. 46.

<sup>12</sup> *Flexibility* meaning US possession of a spectrum of possible threat options suitable for a wide range of opponents and contingencies, and *resilience* meaning the capability to adapt deterrence to changes in threats and contexts, including rapid and unanticipated changes. See, Keith B. Payne, “Maintaining Flexible and Resilient Capabilities for Nuclear Deterrence,” *Strategic Studies Quarterly* (forthcoming, Summer 2011), p. 13.

How much risk is reasonable in this regard? Following comprehensive analyses, the former Commander of STRATCOM, Gen. Kevin Chilton, recently concluded that New START force levels would provide adequate force flexibility for deterrence under specific assumed conditions.<sup>13</sup> But, even with optimistic assumptions about the future, Gen. Chilton explicitly cautioned against further reductions below New START force levels.<sup>14</sup> Nothing has changed over the past few months to suggest that Gen. Chilton's caution no longer is valid. To the contrary, recent developments suggest some troubling threat conditions. For example, Russia has demonstrated the great war-fighting value it places on its large arsenal of tactical nuclear weapons, and its 2010 *Military Blueprint* identifies NATO and the United States as the primary threats to Russia.<sup>15</sup>

In sum, the administration has voiced commitments to US strategic forces and to the goals of deterrence, assurance, and limited defense. But recent statements with regard to the intent behind the forthcoming nuclear reviews cast some doubt on those commitments. If the reduction of nuclear forces en route to zero is the operative top goal of "the US nuclear agenda," then the forthcoming reviews undoubtedly will find a basis for further reductions. Deep reductions, however, would entail significant potential risks, which is why Democratic and Republican administrations for five decades have rightly rejected minimalist standards of force adequacy and related minimalist notions of deterrence. These may seem attractive if the "journey" to nuclear zero is the priority that dominates calculations of "how much is enough?"—but not otherwise.

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<sup>13</sup> Gen. Kevin Chilton, Senate Armed Services Committee, *Hearing to Receive Testimony on the Nuclear Posture Review*, April 22, 2010, pp. 8, 13, 14; and Gen. Kevin Chilton, House Armed Services Committee, Hearing, *U.S. Nuclear Weapons Policy and Force Structure*, April 15, 2010, p. 11.

<sup>14</sup> Gen. Kevin Chilton, Senate Foreign Relations Committee, Hearing, *The New START Treaty: Views from the Pentagon*, June 16, 2010, Federal News Service.

<sup>15</sup> Aleksey Arbatov, "Arbatov on Need to Balance Army: With Available Resources, Clearer Foreign Policy," *Voyenno-Promyshlennyi-Kuryer Online*, March 30, 2011, CEP20110330358006.