BEYOND THE MOSCOW TREATY

TESTIMONY OF
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FOR THE
COMMITTEE ON FOREIGN RELATIONS
UNITED STATES SENATE

HEARINGS ON TREATY ON STRATEGIC OFFENSIVE REDUCTIONS

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MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE: I am John Holdren, a professor at Harvard University in both the Kennedy School of Government and the Department of Earth and Planetary Sciences, and chair of the Kennedy School's Program on Science, Technology, and Public Policy. I am also chairman of the National Academy of Sciences Committee on International Security and Arms Control, which carries out studies for the government and on its own initiative, as well as conducting bilateral security dialogues with counterpart groups from Russia, China, and India. A longer biographical sketch is appended to this statement. The opinions I will offer here are my own and not necessarily those of any of the organizations with which I am associated. I very much appreciate the opportunity to testify before you this afternoon.

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Mr. Chairman, this Committee has already heard many distinguished witnesses extol the virtues and decry the deficiencies of the Moscow Treaty on Strategic Offensive Reductions. I find myself in agreement with much that has been said on both sides. Like some others who have testified before you on the Treaty, I find I am a critic who is also a supporter.

I am a critic because the Treaty is lacking so much that might have been hoped for. As you have read for yourselves and have heard in abundant detail from other witnesses:

- It lacks a clear, mutually agreed specification of what is actually included in the category that is to be reduced, namely "strategic nuclear warheads", referring instead, for this definition to separate individual statements by Presidents Bush and Putin that do not say the same thing.

- It lacks a timetable for the reductions, other than the final target date of December 31, 2012, for reaching the level of 1700-2200 strategic warheads on each side. (That the Treaty is scheduled do go out of force on this same date seems a strange further twist.)

- It does not require the dismantling or destruction of any of the warheads that are "reduced", nor does it specify any measures or criteria for protection and accounting for the warheads that are taken out of service.

- It does not constrain, in any way, the structure of the strategic nuclear forces that remain. Perhaps most importantly, this lack allows continued deployment of MIRVed land-based ICBMs, including the Russian SS-18, which the START II agreement would have

prohibited. (Because of the "use it or lose it" syndrome associated with these weapons, their elimination has been a goal of US arms control efforts since the Reagan years.)

- It does not address the "alert" status of the strategic nuclear forces that remain, notwithstanding that this is both the most anomalous and the most dangerous characteristic of the Russian and US strategic nuclear forces persisting into the post-Cold-War era.

- It lacks any provision for transparency, monitoring, and verification, other than the measures already in effect from the START I agreement, which expires in 2009. (Legally, none of the reductions called for by the Moscow Treaty beyond START I levels would need to take place before the START I monitoring and verification provisions expire.)

- It does not address non-strategic nuclear weapons at all. Even the accompanying Joint Statement, in its passage about the two countries' intentions concerning future reductions, confines itself to strategic weapons.

- Neither in the Treaty nor in the Joint Statement is any constraint expressed or implied about the purposes for which the reduced but still large strategic forces envisioned by the treaty – and the non-strategic forces that it doesn't limit at all – are being kept (other than the declaration's reference to the "national security requirements and alliance obligations" of the two countries). This is unfortunate because declared or suspected purposes for nuclear weapons, beyond the deterrence of nuclear attack or coercion by other countries that possess them, exert upward pressure on future numbers, as well as "outward" pressure in the form of proliferation incentives.

Of course, no treaty can be expected to do everything, so it may seem unfair to carp so much about what this one lacks. But surely it is fair to judge it against its stated context and purposes, and by this standard it falls substantially short.

The Treaty's stated context includes: the end of "the era in which the United States and Russia saw each other as an enemy or strategic threat" and "a new strategic relationship" in which "[w]e are partners" (Joint Statement). Its stated purposes include: establishing "a genuine partnership based on the principles of mutual security, cooperation, trust, openness, and predictability" and "implementing significant reductions in strategic nuclear arms" (Treaty).

Whether the Treaty will actually cause any reductions on the Russian side is questionable: Russia probably was already heading for strategic force levels lower than those specified in the treaty, above all for economic reasons. As noted already, dangerous aspects of the structure and alert status of Russian strategic forces are not addressed by the Treaty at all, and neither are Russia's nonstrategic forces, even though these are thought to contain far more warheads.

On the US side, the large number of "reserve" strategic nuclear warheads that US officials have indicated this country intends to maintain (under the specification that the 1700-2200 figure applies only to "operationally deployed strategic warheads" and given the treaty's

lack of any requirement that strategic warheads in excess of that figure be destroyed) is both problematic and paradoxical.

It is problematic because it calls into question the commitment of the United States to deep and irreversible reductions – a liability in terms of nonproliferation as well as arms control goals – while presenting a picture of US unpredictability to the Russians. It is paradoxical because, at the same time as the Administration avers that the newly friendly and trusting relationship with the Russians allows a treaty that neither restricts force structure nor provides for verification, it is also proposing to maintain a strategic warhead reserve for which the only possible justification is Russian unpredictability.

Indeed, the Treaty's inattention to verification is problematic and paradoxical all by itself. Lack of verification has undermined US confidence in what the Russians actually have done with their tactical nuclear weapon force in relation to the parallel unilateral undertakings on these forces announced by the senior President Bush and President Gorbachev in 1991. Lack of transparency is hobbling US-Russian cooperation to improve the protection of nuclear weapons and nuclear explosive materials against theft. An arms-control agreement denominated in warhead numbers requires more transparency for verification than one denominated in delivery systems, which are easier to observe and count.

If the US-Russian relationship is now as friendly and cooperative as the Treaty and Joint Declaration assert, one wonders why the sorts of transparency and verification measures needed to give confidence in the new agreement could not be quickly negotiated and compactly specified. It was President Reagan who famously enunciated the principle, "Trust but verify." He knew that without transparency, trust withers. I assume the current Administration knows this, too, but its Moscow Treaty seems not to have benefited from the insight.

Another insight whose influence is difficult to discern in the Treaty relates to the interconnectedness of the arms control, non-proliferation, and counter-terrorism agendas.

Maintaining the nuclear non-proliferation "bargain" between the nuclear-weapon and non-nuclear-weapon states requires that the former take seriously – and be seen and confirmed to be taking seriously – their obligations under Article VI of the Non-Proliferation Treaty of 1968 "to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament". Evident intentions by the leading nuclear-weapon states to retain large nuclear arsenals indefinitely, to maintain high states of alert in parts of those arsenals, to reserve the right to use nuclear weapons against those who do not possess them (or use them first against those that do), and to pursue development of new types of nuclear weapons for increased effectiveness or for new purposes, are seen as incompatible with that bargain and are ultimately corrosive of the non-proliferation regime.

Constraints on the numbers and dispersion of nuclear weapons – not only strategic but even more importantly, in many respects, nonstrategic ones – are essential not only to decrease the probability and consequences of accidental, erroneous, or unauthorized use but also to decrease the chances of these weapons' coming into the possession of proliferant states or terrorists. And proliferation itself expands the opportunities (as well as the incentives) for further proliferation and for terrorist acquisition of nuclear weapons, by putting the weapons and the materials for making them into additional (and inevitably less experienced) hands.

It should be obvious on reflection that, whatever levels of nuclear forces the United States and other nuclear-weapon states choose to maintain at any particular time, the confidence of the weapon and non-weapon states alike that these are the levels being maintained – and the confidence of the world that nuclear weapons or the ingredients needed to make them will not fall into the hands of additional states or of terrorists – will ultimately require a regime of control and transparency that embraces all types and categories of nuclear weapons, their components, and all nuclear-explosive materials (civilian as well as military). Probably no treaty could reach such a regime from where we are today in a single step. But it is helpful for the wording of any treaty to reflect insofar as possible the full range of issues it is trying to address and the longer term goal toward which it is a step.

The preamble to the Moscow Treaty notes that the Parties are "mindful of their obligations under Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons", and the Joint Statement says that the United States and Russia will intensify cooperative efforts to combat "the closely linked threats of international terrorism and the proliferation of weapons of mass destruction and their means of delivery". These formulations suggest that the links between arms reductions and non-proliferation, on the one hand, and between non-proliferation and countering terrorism, on the other, at least have been recognized.

But a treaty truly cognizant of the links among all three would not allow strategic reserves as large as or larger than the deployed strategic forces; would address not only numbers but also, to at least some extent, force structure, alert status, and doctrine concerning use and targeting; would not forego requirements for elimination of "reduced" warheads; would not omit constraints on nonstrategic nuclear weapons even as a stated aspiration; and would not neglect transparency and verification (which after all give confidence to the world, not just to the Parties, that specified reductions are actually taking place).

A treaty cognizant of these links would not, in short, miss the post-Cold-War opportunity to put in place a nuclear arms-reduction framework that aimed simultaneously at moving toward sharply reduced numbers of nuclear weapons overall, at reducing the scope of their foreseen authorized uses and the dangers of their unauthorized or accidental use, and at creating a transparency regime that would reassure the Parties and the world that all this was being done, while making possible the needed degree of US-Russian cooperation on protection of nuclear weapons, weapon components, and nuclear-explosive materials from proliferators and terrorists.[1]

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[1] It also seems to me that an administration "mindful" of its obligations under Article VI of the Non-Proliferation Treaty would be asking the Senate to take up, in parallel with the Moscow Treaty, renewed consideration of giving its advice and consent to ratification of the Comprehensive Nuclear Test Ban Treaty. Completing a comprehensive test ban, after all, has long been considered by most non-nuclear-weapon state parties to be the litmus test of nuclear-weapon-state seriousness about their obligations under Article VI, which is one of the reasons that former Chairman of the Joint Chiefs John Shalikashvili concluded, in his January 2001 report to the President and the Secretary of State, that ratifying the CTBT would be in the net national interest of the United States. Another reason for renewing interest in ratification of the CTBT is the finding of a National Academy of Sciences study released at the end of July, which I chaired, that the main technical questions raised in the October 1999 Senate ratification debate all have satisfactory answers: the United States possesses, and need not lose, the technical capability to maintain confidence in the safety and reliability of its existing nuclear-weapon stockpile without nuclear-explosive tests; the US capability to verify the compliance of other countries with a comprehensive nuclear test ban is considerably better than commonly supposed; and such clandestine testing as might occur below the threshold of detection would have little impact on US national security. But that is a story for another day.

Given the shortcomings of the Moscow Treaty that I and many other witnesses in this series of hearings have enumerated and elaborated, why do I conclude nonetheless that the Treaty is worthy of support? I will offer three reasons.

First, I think that, whatever the deficiencies of detail, there is great symbolic importance in the two countries' certifying formally and jointly their intention to proceed to much deeper reductions in strategic nuclear forces beyond the levels permitted in the 1991 START I treaty. More than a decade into the post-Cold-War era, it is past time for a next step; the START II treaty is dead from multiple wounds; and the Moscow Treaty is all that is currently on offer.

Second, the Moscow Treaty represents an important step beyond previous nuclear arms control agreements in focusing principally on actual numbers of bombs and warheads, even if this advantage is weakened by lack of constraint on undeployed and nonstrategic weapons. Previous nuclear arms control treaties, although they typically mentioned numbers of warheads, were actually based on counting launch platforms and delivery vehicles and then applying agreed "counting rules" for tallying up a nominal total number of bombs and warheads this force could deliver.

The old approach benefits from the fact that launch platforms and delivery vehicles are much easier to observe and to count than actual bombs and warheads are, but it is incapable in principle of embracing either reserve weapons or those nonstrategic weapons that are not mated to individual, observable delivery systems. By focusing more directly on the bombs and warheads themselves, the Moscow Treaty at least begins a transition toward a more comprehensive regime that can encompass not only "operationally deployed strategic weapons" but also the very important reserve and nonstrategic categories.

Third, in a number of ways the texts of the Moscow Treaty and the accompanying Joint Declaration at least recognize the incompleteness of this agreement and allow for the possibility of adding missing elements later. For example, the Treaty says the two countries "[a]re embarking upon [a] path" and that "[the] Treaty will help establish more favorable conditions", stipulates that "the START Treaty remains in force in accordance with its terms", and notes that the new Treaty "may be extended …or superseded by a subsequent agreement" before its date of expiration; and the Joint Declaration notes that the continuation in force of the START I Treaty "will provide the foundation confidence, transparency, and predictability in further strategic offensive reductions, along other supplementary measures, including transparency measures, to be agreed" and announces establishment of a "Consultative Group for Strategic Security to be chaired by Foreign Ministers and Defense Ministers", which "will be the principal mechanism through which the sides strengthen mutual confidence, expand transparency, share information and plans, and discuss strategic issues of mutual interest".

The sense that the Moscow Treaty is but one element of a work in progress has been reinforced to some extent in the earlier testimony of senior Administration officials before this Committee, and particularly in their responses to the vigorous questioning from members. It is certainly to be hoped that President Bush recognizes that this Treaty should be the beginning, not the end, of his Administration's efforts in nuclear arms control. In any case, I trust that the Congress will not let him forget that the needed work on reducing post-Cold-War nuclear dangers has just begun.

Let me address, finally, the rationales and specifics of the further building blocks that the Administration and Congress should be seeking to add to the initial framework established by the Moscow Treaty – including some that the Senate could usefully promote in its resolution of advice and consent with respect to ratification. I doing so, I would like to refer particularly to the findings of two studies of these matters conducted during the 1990s by the National Academy of Sciences Committee on International Security and Arms Control (CISAC).

The first of these was the study of "Management and Disposition of Excess Weapons Plutonium", which was initiated at the request of General Brent Scowcroft when he was National Security Advisor to the senior President Bush and completed with the publication of a summary volume in January 1994 and a volume of technical analysis in July 1995. The study was led within CISAC by Wolfgang K. H. Panofsky – participant in the Manhattan Project, founding director emeritus of the Stanford Linear Accelerator Center, and long-time advisor on nuclear weapons matters to the U.S. government and the national weapons labs.

The committee concluded that reductions in the US and Russian nuclear stockpiles, dismantling of the excess weapons, secure storage of all intact weapons, weapon components, and nuclear-explosive materials, final disposition of the excess material by their conversion to forms not directly usable in weapons, and a comprehensive regime of declarations and transparency to ensure that all of this is happening are <u>all</u> essential and inter-related ingredients of a strategy to address the inter-related dangers associated with nuclear weapons. Its January 1994 report states on this topic (quoting verbatim from pp 87-88):

> *[T]he measures taken to address the urgent problem of managing <u>excess</u> nuclear weapons and fissile materials—from dismantlement of weapons through storage and long-term disposition of the resulting fissile materials – must be seen not only as ends in themselves, but also as steps toward an overall regime designed to achieve higher standards of security and transparency for the <u>total</u> stocks of weapons and fissile materials in the United States and the former Soviet Union – and, ultimately, worldwide. The committee envisions a reciprocal regime, built in stages, that would include*
> *:*
> *1. reciprocal declarations of total stocks of nuclear weapons and fissile materials;*
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> *2. cooperative measures to confirm and clarify those declarations;*
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> *3. agreed, monitored subtractions from the stocks available for military use, including*
> - *monitored warhead dismantlement,*
> - *commitments never again to use agreed quantities of fissile materials for weapons purposes,*
> - *safeguarded storage and long-term disposition of excess fissile materials stocks, and*
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> *4. agreement on and monitoring of additions to those stocks, including whatever warhead assembly continues, and a verified cutoff of production of fissile materials for weapons.*
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> *Such a regime, if agreed between the United States and Russia, would directly serve the three security objectives outlined at the beginning of this report – limiting the risk of theft, limiting the risk of breakout, and strengthening arms reduction and nonproliferation. Although complex and far-reaching, such a regime can be approached incrementally, contributing to confidence at each step while posing little risk.*

The 1994 CISAC report also notes the end of the Cold War opened a window of opportunity in which such a comprehensive and cooperative regime is, for the first time, actually within reach.

The authors also urged that the opportunity not be squandered, inasmuch as failure to put in place promptly these elements of transparency and cooperation could lead, ultimately, to the erosion of the cooperative spirit and trust that makes them possible. That advice is no less germane today, as the Administration and the Congress ponder the steps that should follow in the wake of the Moscow Treaty.

The second CISAC study I wish to cite, in connection with the question of needed next steps, was released in June 1997 under the title, "The Future of US Nuclear Weapons Policy". This study was led within CISAC by Major General William F. Burns (US Army, retired), who was the ninth Director of the U.S. Arms Control and Disarmament Agency (under President Reagan), Deputy Assistant Secretary of State for Political-Military Affairs (also under President Reagan), and the first U.S. Special Envoy to the denuclearization negotiations with the states of the former Soviet Union under the Nunn-Lugar Act (under the senior President Bush).

This study focused strongly on aspects of US and Russian nuclear force structure, doctrine, and operational practices posing dangers that can no longer be justified in terms of the Cold War dilemmas that spawned them. Those dangers include not only erroneous, accidental, or unauthorized use but also incentives and possibilities for acquisition of nuclear weapons by proliferant states and terrorists. The report recommended a transformation of U.S nuclear-weapons policy that would include:

(a) multi-stage nuclear-force reductions in concert with Russia;

(b) the inclusion in these reductions, at a stage two steps beyond the then-envisioned START II agreement, of all categories of nuclear warheads (strategic and nonstrategic, deployed and reserve);

(c) confining the role of US nuclear weapons to the "core" function of deterrence of nuclear attack -- or coercion by threat of nuclear attack -- against the United States and its allies, hence abjuring policies and plans that envision the possible first use of nuclear weapons against conventional, chemical, or biological attacks or threats;

(d) the modification of operational practices and targeting plans to reflect post-Cold-War conditions, reassure other countries, and reduce the dangers of accidental, erroneous, unauthorized, or inappropriately massive use; and

(e) bilateral and eventually international arrangements for detailed, verified accounting and assured physical security of all nuclear weapons, components, and nuclear-explosive materials.

The successive stages of US-Russian nuclear-force reduction recommended in this 1997 CISAC report began with the level of 3000-3500 deployed strategic warheads on each side specified in the START II agreement, which it was thought at the time might still enter into force. The report recommended moving quickly thereafter to a level of 2,000 deployed strategic warheads on each side, corresponding to the lower end of the 2000-2500 range that Presidents Clinton and Yeltsin had identified as the target for START III in their March 1997 Helsinki summit. The Moscow Treaty has now "leapfrogged" past the START II figures to almost exactly this START III target (after allowance for the difference between the "deployed strategic

warheads" of the START II-III terminology and the "operationally deployed strategic warheads" in the new Bush terminology).

The 1997 CISAC report argued that the step beyond the 2,000 deployed strategic warheads level should be to about 1,000 total warheads on each side, including nonstrategic as well as strategic weapons and reserves as well as deployed forces. The report said that these levels would be adequate to ensure survivability of adequate retaliatory forces against a first strike and would be "able to maintain the core function [of deterrence of nuclear attack or nuclear coercion] satisfactorily against the most challenging potential U.S. adversaries under any credible circumstances, assuming that strategic defenses remain limited and transparent enough to avoid surprises". It also said that reductions to this level could be undertaken by the United States and Russia without demanding reductions in the arsenals of China, France, and the United Kingdom as a precondition. (Going to levels significantly below 1,000 total warheads each for the United States and Russia, the report noted, would be "a more complicated and multilateral process.") Also significant, in the context of today's discussion of the Moscow Treaty, was CISAC's conclusion about "hedging" (p 80):

> *[E]ven at this low level the committee does not see a need for a reserve nuclear weapons stockpile as a hedge against the emergence of new nuclear powers or clandestine expansion of the nuclear arsenals of existing nuclear weapon states.*

The report emphasized that any regime embracing all nuclear warheads would require transparency and verification measures that "go beyond those required to verify the limits on delivery vehicles and launchers in START I and II", and it discussed in some detail the kinds of information exchanges and monitoring approaches and technologies that could do this job while still protecting sensitive nuclear-weapon design information on both sides. (CISAC is currently engaged in a new study – its working title is "the all-warhead study" – which looks in much greater detail at the transparency and monitoring requirements, approaches, and technologies for an arms-control regime that includes all nuclear warheads, their components, and nuclear-explosive materials. Publication is expected in Spring 2003.)

With respect to confining the role of US nuclear weapons to the "core" deterrent function, the 1997 report had the following to say (71-72):

> *[T]he United States should announce that the only purpose of US nuclear weapons is to deter nuclear attacks on the United States and its allies, adopting no first use for nuclear weapons as official declaratory policy. In the post-Cold-War era, when nonproliferation is a high priority and the credibility of the nuclear powers' commitment to Article VI of the NPT is crucial to maintaining the international consensus behind the regime, a US no-first-use pledge could help remove both reasons and excuses for proliferation. It would also assist with the dialogue with China and those non-aligned states that urged a no-first-use declaration during the negotiations on the NPT and the CTBT and now propose no-first-use treaty. ... It would not in any way suggest that the United States is less willing than in the past to come to the defense of treaty-bound allies in Europe or Asia.*

Publicly available accounts of this Administration's Nuclear Posture Review suggest that this is not the direction of its current thinking – the Cold War is long gone, but the dangerous NATO doctrine of "first use if necessary", spawned by Cold War fears and conditions, lives on. What is equally regrettable (and perhaps even more dangerous), is that Russia has renounced the Soviet

Union's Cold War doctrine of "no first use" and now stands with the United States and NATO in the threat to use nuclear weapons first if it feels the need.

The 1997 CISAC report depicted the overall benefits of its proposed multi-part nuclear-threat-reduction regime in the following terms:

> *Nuclear force reductions and changes in nuclear operations would increase U.S. and global security in a number of important ways.*
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> *First, reducing U.S. and Russian nuclear forces and revising operations for the mission of fulfilling only the core function will decrease the continuing risk of accidental, erroneous, or unauthorized use of nuclear weapons, for several reasons: smaller arsenals will be easier to safeguard and protect from accident, theft, and unauthorized use, not only by virtue of reduced numbers of weapons to monitor at a smaller number of sites but also by permitting retention of only those weapons with the most modern safety and security features; and reducing alert rates, decreasing capacities to use nuclear weapons quickly and with little warning, abandoning plans for the rapid use of nuclear weapons, and deploying cooperative measures to assure state that forces are not being readied for attack should reduce the probability and consequences of erroneous nuclear-weapons use -- for example on false warning of attack. (Of course it is extremely important to take care that reductions in deployed nuclear warheads -- and dismantlement of the warheads made surplus as a result -- do not lead to countervailing increases in the dangers of theft and unauthorized use as a consequence of inattention to the challenges of safe storage of these weapons and the nuclear materials removed from them.)*
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> *Second, further reductions will bolster the nuclear nonproliferation regime. U.S.-Russian nuclear arms reductions will not dissuade a state bent on acquiring nuclear weapons; certainly, today's undeclared nuclear powers and would-be proliferators are driven above all by regional security concerns. In such cases, the denial of material and technical resources and a combination of political and economic incentives and disincentives provide the greatest leverage. But U.S. and Russian progress in arms reductions helps shore up global support for anti-proliferation measures; and lack of such progress can strengthen the influence of those arguing for nuclear-weapons acquisition in countries where this is under internal debate*
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> *Third, continued actions by the United States and Russia to reduce their nuclear arsenals -- and the roles and missions assigned to these arsenals -- will help persuade the other declared and undeclared nuclear-weapon states to join the arms control process. At planned START II levels, for example, under which it is estimated that the United States and Russia each would retain a total of about 10,000 nuclear warheads, deployed and in reserve, the other nuclear powers have little motivation to submit their much smaller arsenals to any form of control.*

I want to emphasize, in this last connection, that it is true under the Moscow Treaty, as it would have been under START II, that there will be no upper limit on the total number of nuclear warheads that the United States and Russia may keep, and that Russia might well keep 10,000 (undoubtedly mostly tactical) even if the United States does not.

Indeed, rather little of the nuclear risk-reduction benefit of the comprehensive regime that the CISAC report describes can be expected to flow from the Moscow Treaty alone. The arsenals will still be much too large, their alert status too great, the circumstances and targets for their potential use too unconstrained, the transparency and confidence concerning their size and their future too small. The Moscow Treaty as written is a modest step in the right direction, but it is not nearly enough.

While I believe that this modest progress makes the Treaty worth ratifying, I also believe that the Senate's resolution of advice and consent should push for somewhat more. It seems to me that incorporation of the following elements -- which would not require amendment to the Treaty -- could at least partially address some of its most glaring shortcomings, and that these particular additions and clarifications would be unlikely to be opposed by the Russians. It is to be hoped that they would not be strongly opposed by the Bush Administration., either.

- Clarification of the unit of account. The resolution could call on the Administration to issue a unilateral clarification of the US interpretation of the phrase "operationally deployed strategic warheads" (which appears in the November 13, 2001 statement of President Bush cited by the Treaty as to the US definition of what is being constrained). The clarification would state that warheads associated with launch platforms and delivery vehicles in routine maintenance or overhaul will be included in the category of operationally deployed strategic warheads that is subject to the Treaty's ceiling. This clarification would close the most glaring legal loophole in the Treaty, which is that any number of launch platforms and delivery vehicles could be declared to be in maintenance or overhaul on December 31, 2012 in order to achieve formal "compliance".

- Part-way reduction target. The resolution could call for a further US unilateral declaration concerning its intentions to move in a measured way toward the 2012 ceiling, specifically by indicating the number of deployed strategic warheads it intends not to exceed by the Treaty's "half way" point at December 31, 2007. A suitable level for this intermediate target might be the old START II ceiling of 3000-3500 strategic warheads. This clarification would help address the defect that the Treaty specifies no reductions at all prior to its ending date, encouraging senseless prolongation of the retention of deployed Russian and US strategic-warhead stockpiles far in excess of any conceivable need.

- Voluntary limitation on "reserve" forces. The resolution could call for a further US unilateral declaration that the "reserve" strategic warheads it retains will at no time exceed a specified fraction – say, 50 percent – of the strategic warheads it deploys at that time. This clarification would allow ample provision for any of the kinds of contingencies cited by the Administration in support of the need for reserves, while eliminating at least the total open-endedness of this loophole.

- Intention to pursue agreed limits on reserve and nonstrategic warheads in a next round. The resolution could call on the Administration to announce its intention to initiate discussions with the Russian government on a new round of agreed limits that embrace all nuclear warheads, reserve as well as deployed and nonstrategic as well as strategic. The responsibility for making early progress toward this end could be assigned to the Consultative Group for Strategic Security mentioned in the Joint Declaration. A declaration of intention to move on this agenda in a timely manner would underline the seriousness of the United States in pursuing meaningful nuclear arms limitation and would set the stage for bringing under control the category of Russian weapons that is by far the most vulnerable to unauthorized or accidental use or transfer into the possession of terrorists or proliferant states.

- Pursuit of transparency via implementation of the Biden Amendment. The other really

glaring omission in the Moscow Treaty, as I and others in these hearings have noted at length, is its failure to provide for any measures of transparency and verification beyond those that will be in force under the START I Treaty until its expiration in 2009. This omission is all the more distressing, Mr. Chairman, because an amendment for which you were responsible in the START I resolution of ratification should have precluded it. The Biden Amendment, which is the law of the land, reads as follows:

> ***Nuclear Stockpile Weapons Agreement***. *Inasmuch as the prospect of a loss of control of nuclear weapons or fissile material in the former Soviet Union could pose a serious threat to the Unted States and to international peace and security, in connection with any further agreement reducing strategic offensive arms, the President shall seek an appropriate arrangement, including the use of reciprocal inspections, data exchanges, and other cooperative measures to monitor (A) the numbers of nuclear stockpile weapons on the territory of the parties to this treaty and (B) the location and inventory of facilities on the territories of the parties to this treaty capable of producing or processing significant quantities of fissile materials.*

It is unclear whether the President actually made any effort in this direction. In any case, I believe the Senate's resolution of advice and consent on ratification of the Moscow Treaty should remind the Administration of the Biden Amendment's provisions and should call for its early implementation through arrangements to be worked out in the Consultative Group for Strategic Security or through other mechanisms.

I would also like to add my voice to the others who have called, in these hearings, for the Congress to act on the permanent waiver of certification requirements on the Nunn-Lugar Cooperative Threat Reduction program, so that it can go forward at the scale and pace that the challenges of assisting Russia with the dismantlement of surplus weapons and the protection of nuclear weapons, components, and materials require. This waiver need not necessarily be part of the resolution of advice and consent on ratification of the Moscow Treaty – it could also be done separately – but linking it to the Treaty would have the advantage of underlining the interconnectedness of these elements of the needed comprehensive approach to reducing the nuclear danger.

Calling, in the Senate's resolution, for the clarifications, goals, and commitments just listed would be a most valuable impetus to the Administration and to the Russians to shore up the provisions in the Moscow Treaty as written and to move beyond it to further measures more fully commensurate with the dangers that nuclear weapons still pose to this country and the world. Those measures include not only the expansion and acceleration of the Nunn-Lugar program but also: the completion of a far-reaching program of accountancy and protection for all nuclear-explosive materials, including cessation of the production of such materials for weapons; the ratification of the Comprehensive Test Ban Treaty; the progressive de-alerting of strategic nuclear forces by parallel initiatives; the elimination of massive-response options from US targeting plans; an unequivocal commitment by the United States to No First Use of nuclear weapons; and the limitation and reduction of the <u>total</u> nuclear-weapon stockpiles not only of the United States and Russia but also, ultimately, of all of the other nuclear-weapon states.

The Moscow Treaty as written would be a modest step forward. With a strong Senate resolution along the lines suggested here, it would be a significantly bigger one. But the enduring challenge, after the ratification debate is over and the resolution passed, will be to maintain the momentum in pursuit of the further steps that the safety of this country and indeed the preservation of civilization require. Please, let no one suppose that ratifying the Moscow

Treaty – whatever the conditions and exhortations in the Senate resolution – has "checked the box" on the efforts of this Administration and this Congress to reduce the dangers from nuclear weapons. This work is just beginning.

Thank you for the opportunity to put these views before you.

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Biographical Sketch

JOHN P. HOLDREN is the Teresa and John Heinz Professor of Environmental Policy and Director of the Program on Science, Technology, and Public Policy in the Belfer Center for Science and International Affairs, John F. Kennedy School of Government, as well as Professor of Environmental Science and Public Policy in the Department of Earth and Planetary Sciences, at Harvard University. Trained in aeronautics/astronautics and theoretical plasma physics at MIT and Stanford, he held positions before coming to Harvard at the Lawrence Livermore National Laboratory, the California Institute of Technology, and the University of California, Berkeley. He is a member of the National Academy of Sciences (NAS), the National Academy of Engineering, and the American Academy of Arts and Sciences and is the author of some 300 articles and reports on energy technology and policy, global environmental change, and national and international security, as well as co-author or co-editor of 15 books on these subjects. He is Chair of the NAS Committee on International Security and Arms Control and of the NAS Committee on Technical Issues Related to the Comprehensive Nuclear Test Ban Treaty, and he is the US Co-Chair of the US National Academies / Russian Academy of Sciences Joint Committee on US-Russian Cooperation on Nuclear Non-Proliferation. As a member of President Clinton's Committee of Advisors on Science and Technology (PCAST) from 1994 to 2001, he chaired the classified 1995 PCAST study of US-Russian cooperation to protect nuclear materials, as well as serving in 1996 and 1997 as the US co-chair of the US-Russian Independent Scientific Commission on Plutonium Disposition, reporting to Presidents Clinton and Yeltsin. From 1987 to 1997 he served as Chair of the Executive Committee of the Pugwash Conferences on Science and World Affairs, and in that capacity he delivered the acceptance speech for the Nobel Peace Prize awarded to the Pugwash Conferences in December 1995.