

#### **4. COMPLIANCE ASSESSMENT: THE NPT DECLARED NUCLEAR WEAPON STATES\***

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##### **A. PART ONE: Cessation of the Nuclear Arms Race**

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NPT delegates and NGO colleagues:

We will present our assessment of the nuclear weapon states' compliance with Article VI of the NPT in three parts, corresponding to the three elements of that article: cessation of the nuclear arms race, nuclear disarmament, and a treaty on general and complete disarmament.

The first element and its time qualification are too often overlooked: "negotiation in good faith of effective measures relating to cessation of the nuclear arms race *at an early date.*"

In 1995, we were told that "the nuclear arms race has ceased," in a declaration issued at the Conference on Disarmament by France, Russia, Britain and the United States in anticipation of the 1995 Review and Extension Conference.<sup>1</sup>

Unfortunately, this optimistic claim is not true.

It is true that, with the possible exception of China, the *quantitative* trend is downwards. But *qualitative* modernization of nuclear forces continues.

The nuclear weapon states may protest that modernization is the inevitable byproduct of replacement of existing systems that have reached the end of their service lives.

But if true that defense points to an intention not to fulfill the unequivocal undertaking of elimination for decades to come.

Moreover, in some cases modernization unmistakably amounts to arms racing.

It must also be noted that both the Comprehensive Test Ban Treaty and the Fissile Materials Cut-Off Treaty have yet to be achieved. Both measures were envisioned at the time of the NPT's negotiation as means of capping the arms race. Indeed, they would have done so if they had been agreed as intended "at an early date." Still, even today, they could contribute to preventing arms racing.

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<sup>1</sup> CD 1308, April 6, 1995, later issued as a document of the 1995 Review and Extension Conference (NPT/CONF.1995/20).

Nor have the NPT nuclear weapon states undertaken any initiatives to stop modernization of nuclear forces - no initiatives of any kind, formal or informal, discussions or negotiations, among themselves or in a wider setting. Nor have there been efforts to achieve related objectives like increasing transparency and lowering the readiness of forces. Those are tasks that could and should be taken up by those countries - Britain, France and China - which tend to shelter behind the argument that global elimination must await deep reductions in US and Russian forces.

Now for a quick snapshot of modernization programs:

*Britain:* The submarine-launched Trident missile, equipped with three to four warheads, is Britain's remaining operational nuclear weapon system.<sup>2</sup> At its Aldermaston complex, the Atomic Weapons Establishment is continuing its plans for the development of new facilities to be used for laser-based plasma physics studies, hydrodynamic testing, and supercomputer simulations.<sup>3</sup> The Establishment states that its mission in part is to "maintain a capability to provide warheads for a successor system" to the Trident without "recourse to nuclear testing."<sup>4</sup> A decision on whether or not to replace the Trident system will likely be made in the just elected parliament<sup>5</sup>. A replacement system might not be deployed for another two decades.

If in accordance with the unequivocal undertaking, and with the fundamental illegitimacy and illegality of threat or use of nuclear weapons, Britain should decide not to replace the Trident system, it would earn a special place in history as the first of the original declared NPT nuclear weapon states to renounce its arsenal.

*France:* France continues to design and build new weapon systems, for use through 2040.<sup>6</sup> For its submarine fleet, France is developing the M-51 missile, which will

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<sup>2</sup> Ministry of Defence, July 1998, Strategic Defence Review: White Paper, Presented to Parliament by The Secretary of State for Defence. [www.mod.uk/issues/sdr/index.htm](http://www.mod.uk/issues/sdr/index.htm). The British Navy maintains a fleet of four Trident submarines, each equipped with 12-16 missiles carrying three to four warheads, which makes for a total operational nuclear arsenal of less than 200 warheads. The British Navy maintains only one Trident submarine on patrol at any one time, with its missiles "normally" kept "at several days' notice to fire." MOD, 1998. By reducing its arsenal to a single nuclear weapon system, the UK views itself as "the most forward-leaning of the Nuclear Weapon States."<sup>2</sup> Ambassador David Broucher, Statement before the 2004 NPT Preparatory Committee, 3 May 2004, [www.fco.gov.uk/ukdis](http://www.fco.gov.uk/ukdis). Reductions included the withdrawal and dismantling of its maritime tactical nuclear capability, the withdrawal and dismantling of the WE177 nuclear bomb, the termination of the Lance missile, and most recently the dismantling in 2002 of the Chevaline warheads formerly deployed on Polaris missiles. However, the dismantled weapons systems had reached the end of their service lives, and were replaced by the Trident system. In 1994, a government committee stated that "Trident's accuracy and sophistication in other respects does, and was always intended to, represent a significant enhancement of the UK's nuclear capability." Defense Select Committee, HC 297 of Session 1993-94, p.xiv.

<sup>3</sup> Atomic Weapons Establishment, 2003, AWE Public Information Leaflet: The AWE Sites Development Strategic Plan, August 2003 Update.

<sup>4</sup> Atomic Weapons Establishment, Enduring Excellence, AWE Annual Report 2003/4.

<sup>5</sup> Ambassador David Broucher, 2004.

<sup>6</sup> Assemblée Nationale, Au Nom de la Commission de la Défense Nationale et des Forces Armées, sur le projet de loi de finances pour 2005 (no. 1800), Tome II, Défense, 'Dissuasion Nucléaire', M. Antoine Carre (Député), 13 Oct. 2004. The backbone of the French nuclear force now consists of its fleet of four nuclear-

eventually be equipped with a new warhead, the Tête nucléaire océanique.<sup>7</sup> Modernization also continues for the air-to-surface stocks, with the current cruise missile set to be replaced with a longer ranged variant, also equipped with a new warhead, the Tête nucléaire aéroportée.<sup>8</sup> France has a highly advanced program to develop the capability to design and manufacture modified or new nuclear weapons without explosive nuclear testing. Notably, with the Laser Megajoule now under construction France and the United States are the only states seeking to induce miniature thermonuclear explosions in contained vessels in giant laser facilities.

*China:* China is currently replacing its force of 20 silo-based long-range missiles with a longer ranged variant.<sup>9</sup> China is also developing a new mobile intermediate-ranged solid-fueled ICBM, which may begin to be deployed by the end of the decade.<sup>10</sup> A longer-ranged variant is also under development.<sup>11</sup> For its ballistic missile submarine force, China is currently working to replace the experimental missile with a more reliable, medium-range missile, and is developing a new submarine.<sup>12</sup> The Chinese program could be characterized as a slow-motion effort to counterbalance long-standing and still evolving US and Russian capabilities, but nonetheless is a form of arms racing.

*Russia:* Top Russian officials have touted development of a new maneuverable warhead able to avoid missile defenses.<sup>13</sup> President Putin described it as a "new hypersound-speed, high-precision new weapons system that can hit targets at international distance and can adjust their altitude and course as they travel."<sup>14</sup> Manufacture of single warhead, silo-based missiles continues.<sup>15</sup> The deployment of a road-mobile, multi-

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powered ballistic missile submarines, with three operational. The submarines carry loads of 16 missiles, each equipped with six warheads. Robert S. Norris, William M. Arkin, Hans M. Kristensen, Joshua Handler, French Nuclear Forces 2001 from NRDC: Nuclear Notebook, in Bulletin of the Atomic Scientist, July/August 2001, volume 57(4), pp 70-71. France also maintains a force of about 60 single warhead air-to-surface supersonic missiles, the Air-Sol-Moyenne Porté (ASMP), which are carried by land and carrier-based fighter/bomber aircraft. Bruno Tertrais, "Nuclear policy: France stands alone," Bulletin of the Atomic Scientists, July/August 2004 pp. 48-55 (vol. 60, no. 04), [www.thebulletin.org/article.php?art\\_ofn=ja04tertrais](http://www.thebulletin.org/article.php?art_ofn=ja04tertrais). The total of warheads is estimated at about 350. In five years the size of the arsenal will be same as in the mid 1990s, but France will have completely replaced every aspect of its force, from delivery systems to warheads.

<sup>7</sup> Kristensen, H.M. and Kile, S., 'World nuclear forces', *SIPRI Yearbook 2003: Armaments, Disarmament and International Security*, (Oxford University Press: Oxford, 2003).

<sup>8</sup> Assemblée Nationale, 2004. The TNA and TNO are so-called "robust" warheads; they are less sensitive, for example, to the aging of components. The concept for these warheads was tested during France's 1995-1996 final nuclear testing campaign. Tertrais, 2004.

<sup>9</sup> Department of Defense, FY04 Report To Congress On Military Power in the People's Republic of China.

<sup>10</sup> DoD, 2004.

<sup>11</sup> Robert S. Norris and Hans M. Kristensen, "Chinese Nuclear Forces, 2003," NRDC: Nuclear Notebook, in Bulletin of the Atomic Scientists, November/December 2003, vol. 59(6), pp 77-80. China currently deploys a variety of nuclear weapon systems, all of which carry a single warhead, with a total arsenal of 400 warheads.

<sup>12</sup> Norris and Kristensen, "Chinese Nuclear Forces, 2003."

<sup>13</sup> Norris and Kristensen, "Russian Nuclear Forces, 2005."

<sup>14</sup> President Vladimir Putin, February 18, 2004, Press statement and answers to questions, Ministry of Foreign Affairs, Daily News Bulletin.

<sup>15</sup> Robert S. Norris and Hans M. Kristensen, "Russian nuclear forces, 2005," NRDC: Nuclear Notebook, Bulletin of the Atomic Scientists, March/April 2005, vol. 61(2), pp. 70-72. NRDC estimates that Russia currently has about 7,200 operational nuclear warheads, 3,800 strategic and 3,400 tactical. The total arsenal of intact warheads, according to NRDC, is around 16,000.

warhead variant is scheduled to begin in 2006. Russia has announced it will eventually field several divisions of these missiles, likely totaling about 200 missiles, of which 40 have already been completed and deployed.<sup>16</sup> Russia continues to slowly retire multi-warhead, land-based nuclear missiles, but may deploy some number of recent variants while the numbers of single warhead missiles are slowly built up. Reportedly, development of a new generation ICBM, able to carry up to 10 warheads, is underway.<sup>17</sup> A nuclear variant of a new bomber-carried cruise missile may be deployed in 2005.<sup>18</sup> When ready and flight-tested, a new submarine-launched missile will be deployed on two submarines under construction.<sup>19</sup>

In part Russia is engaged in restructuring its deployed strategic force as Russia and the United States reduce toward 2200 deployed strategic warheads in 2012 per the Moscow Treaty. The partial move from multi-warhead to single-warhead missiles can be viewed as stabilizing. However, there are also ample signs of innovation. In any case, it is clear that Russia is engaged in modernization and replacement of existing systems in accordance with an intention to rely on nuclear forces indefinitely. As President Putin stated in 2003, "the nuclear deterrence forces remain and will remain for a long time yet the foundation of the national security of Russia."<sup>20</sup>

*United States:* The United States spends about \$40 billion annually on nuclear forces,<sup>21</sup> more than the total military budget for almost every other country. We cannot here give a comprehensive picture of US modernization activities, but rather just highlight some.

Regarding delivery systems:

- Existing Minuteman land-based missiles are being modernized, to improve accuracy and reliability and to extend their service life. Supporting infrastructure also is being upgraded to allow for more rapid re-targeting.<sup>22</sup> The Minuteman refurbishment is so extensive that the retired commander of US ICBM forces, Major General Thomas H.

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<sup>16</sup> Robert S. Norris and Hans M. Kristensen, "Russian nuclear forces, 2005," NRDC: Nuclear Notebook, Bulletin of the Atomic Scientists, March/April 2005, vol. 61(2), pp. 70-72.

<sup>17</sup> "Russia deploys new missile batch," AP, December 22, 2003; Norris and Kristensen, "Russian nuclear forces, 2005."

<sup>18</sup> Norris and Kristensen, "Russian Nuclear Forces, 2005."

<sup>19</sup> Norris and Kristensen, "Russian Nuclear Forces, 2005."

<sup>20</sup> President Vladimir Putin, October 3, 2003, Concluding Remarks at a Meeting with Russian Armed Forces Commanders, Ministry of Foreign Affairs, Daily News Bulletin, [www.ln.mid.ru/Bl.nsf/arh/CF00EFB5C420B88E43256DB4003E827F?OpenDocument](http://www.ln.mid.ru/Bl.nsf/arh/CF00EFB5C420B88E43256DB4003E827F?OpenDocument).

<sup>21</sup> Robert S. Norris, Hans M. Kristensen, Christopher E. Paine, Natural Resources Defense Council, *Nuclear Insecurity: A Critique of the Bush Administration's Nuclear Weapons Policies*, September 2004, p. 10. The current US nuclear stockpile is estimated at 10,350 warheads. Of these, approximately 5,300 are operational, including 4,350 strategic and 780 non-strategic warheads. Almost 5,000 additional warheads are retained in the "responsive reserve force" or on inactive status, with their tritium removed. It is believed that 480 operational US B61 bombs are deployed at eight bases in six NATO countries, for delivery by US and NATO bombers. When the Moscow Treaty expires in 2012, it is estimated that the US will retain about 6,000 nuclear warheads. Robert S. Norris and Hans M. Kristensen, "US nuclear forces, 2005," NRDC: Nuclear Notebook, Bulletin of the Atomic Scientists, January/February 2005, vol. 61(1), pp. 73-75.

<sup>22</sup> Amy Wolf, *US Nuclear Weapons: Changes in Policy and Force Structure*, Congressional Research Service Report to Congress, Updated January 13, 2005, p.CRS-28.

Neary, likened the process to “jacking up the radiator cap and driving a new car under it.”<sup>23</sup>

- Trident submarine launched ballistic missiles are being modernized. Improvements include guidance system upgrades and changes in the W76 warhead arming, fusing and firing system to allow ground burst use more effective for preemptive strikes.<sup>24</sup>
- Nuclear-capable long-range bombers are being upgraded,<sup>25</sup> and the current budget proposes over \$1.25 billion in spending for “next generation bomber” research through FY2011.<sup>26</sup>
- Research is underway on new delivery systems. For example, the Air Force has begun analyzing alternatives for replacement of its land-based intercontinental ballistic missiles, asking contractors to consider approaches that will provide new capabilities such as improved reentry vehicle maneuverability, trajectory shaping, and greater accuracy. The goal of the program is “maintaining US qualitative superiority in nuclear warfighting capabilities in the 2020-2040 time frame.”<sup>27</sup> The Air Force also is beginning concept studies for a nuclear enhanced cruise missile, examining potential improved capabilities such as increased range, accuracy, and survivability in difficult “anti-access” environments.<sup>28</sup> Research on ballistic missile propulsion, guidance and reentry vehicle technologies is ongoing.

Regarding warheads:

- The program to extend the lifetime of one warhead (the W-87) by 30 years was completed in 2004, and lifetime extension is planned for five other warheads and

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<sup>23</sup> Air Force Major General Thomas H. Neary, ret., remarks at Air Force Space Command "Guardian Challenge 2004" competition, quoted in Scott R. Gourley, "ICBM Transformation," *Military Aerospace Technology Online*, Jun 25, 2004, v.3 #2.

<sup>24</sup> Robert S. Norris and Hans M. Kristensen, "US nuclear forces, 2005," *Bulletin of Atomic Scientists*, January/February 2005, pp. 73-75; see also Department of the Navy, Fiscal Year (FY) 2006/FY 2007 Budget Estimates, RDT&E Project Justification, January 2005, Program Element 0101221N, Strategic Sub & Wpns Sys Spt, Technology Applications 2228.

<sup>25</sup> See, for example, Department of the Air Force, Fiscal Year (Fy) 2006/2007 Budget Estimates, Research, Development, Test and Evaluation (RDT&E), Descriptive Summaries, Volume II, February 2005, Program Element 0604240F, B-2 Advanced Technology Bomber, requesting funds for various electronics upgrades including a "Secure, survivable communication systems upgrade" that "reserves the critical ability to guarantee communication through a nuclear event, while providing a dramatic increase in the data flow into and out of the B-2." Another example is a "stand-off jammer" in development for the B-52, "for reactive jamming suppression of enemy integrated air defense systems (IADS) and IADS component radars from stand-off distance." Department of the Air Force, Fiscal Year (Fy) 2006/2007 Budget Estimates, Research, Development, Test and Evaluation (RDT&E), Descriptive Summaries, Volume II, February 2005, Program Element 0604429F, Airborne Electronic Attack.

<sup>26</sup> Department of the Air Force, Fiscal Year (Fy) 2006/2007 Budget Estimates, Research, Development, Test and Evaluation (RDT&E), Descriptive Summaries, Volume II, February 2005, Program Element 0604015F Next Generation Bomber.

<sup>27</sup> US Air Force Space Command, Final Mission Need Statement, Land Based Strategic Nuclear Deterrent, AFSPC 001-00, January, 2002, p. 1.

<sup>28</sup> Department of the Air Force, Air Force Materiel Command, AFRL, Space Vehicles Directorate, "Concepts and Technologies Study for Enhance [sic] Cruise Missile (ECM), Sources Sought Notice, Reference-Number-AFNWCA-002, December 7, 2004 (modified December 9, 2004).

bombs (B61-7/-11, W76, W88, B83, and W88). Some of the planned programs are significant enough to change the warheads' modification designations.<sup>29</sup>

- Research is funded for 2005 on a "reliable replacement warhead." This program will explore ways to design and produce long-lasting nuclear warheads with capabilities comparable to the current arsenal without underground nuclear testing.<sup>30</sup>
- Despite a Congressional refusal to fund the program for this year, the Bush administration is requesting funding for 2006 for research, including design studies and impact tests, on a Robust Nuclear Earth Penetrator intended to be more effective than the B-61-11 deployed in 1997.<sup>31</sup> The administration is also requesting funding for studies of integration of the penetrator with the B-2 stealth bomber.<sup>32</sup>

Regarding command and control, work is going forward on a variety of technology upgrades intended to increase US capabilities to plan and execute nuclear strikes, ranging from research on nuclear weapons effects on underground bunkers and chemical and biological warfare facilities to extensive upgrades in the computer software and hardware used to plan and execute nuclear strikes, including software to assess likely "collateral damage."<sup>33</sup>

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<sup>29</sup> Norris and Kristensen, "US nuclear forces, 2005."

<sup>30</sup> US Department of Energy, National Nuclear Security Administration, FY 2006 Budget Request, Directed Stockpile Work, "Reliable Replacement Warhead," p.82; Statement of Ambassador Linton F. Brooks, Administrator, National Nuclear Security Administration US Department of Energy, before The Senate Armed Services Committee Subcommittee on Strategic Forces, April 4, 2005, pp.5-6; Dwight Jaeger and John Pedicini, "The Evolving Deterrent," *Los Alamos Science*, Number 29, 2005, p.4. If the RRW approach can provide new warheads approximating the range of sophisticated capabilities in the current US stockpile, it is possible that it could provide additional capabilities as well. The Defense Science Board, in its 2004 *Report of the Defense Science Board Task Force on Future Strategic Strike Forces*, noted that a variety of additional capabilities likely could be obtained by modifying existing nuclear warhead designs without underground testing, ranging from reduced yields and improved earth penetrating ability to enhanced radiation with reduced heat and blast. (At pp.7-10-7-11).

<sup>31</sup> US Department of Energy, National Nuclear Security Administration, Budget Request, "Directed Stockpile Work," pp.82-83. Regarding the hypothetical use of a penetrator version of a B83 or B61 nuclear bomb with primary yield only, see Christopher E. Paine, Thomas B. Cochran, Matthew G. McKinzie, and Robert S. Norris, *Countering Proliferation, or Compounding It? The Bush Administration's Quest for Earth- Penetrating and Low-Yield Nuclear Weapons*, Natural Resources Defense Council, 2003, p.v. The Defense Science Board (DSB) noted that "Current warheads could be modified for lower yields with high confidence," and noted that one way of doing so would be "replacement of a warhead secondary with inert material." The DSB noted that "Further reductions in yield are also possible without nuclear testing." *Report of the Defense Science Board Task Force on Future Strategic Strike Forces*, 2004, p. 7-11.

<sup>32</sup> Department of the Air Force, Fiscal Year (Fy) 2006/2007 Budget Estimates, Research, Development, Test and Evaluation (RDT&E), Descriptive Summaries, Volume II, Program Element 0604222F, Nuclear Weapons Support, Project 4807 Nuclear Weapons & CP Technologies, "Other program funding summary."

<sup>33</sup> For example, upgrades to the Strategic War Planning System are to "produce preplanned and adaptively planned options for Theater CINC-nominated Weapons of Mass Destruction (WMD) and Nuclear, Chemical and Biological (NBC) targets using nuclear and/or conventional weapons." The objective is to "automate the current manual processes, required to produce decision documents [Theater Nuclear Planning Document (TNP) and Theater Planning Support Document (TPSD)] for the theater Commanders-in-Chief (CINCs)." One aspect of the project will be "Earth Penetration Weapon Targeting." [US Air Force, RDT&E Budget Item Justification Sheet (R-2 Exhibit) February 2002, Program Element 0101313F, Project 5059, Strategic War Planning System.] A "Tunnel Target Defeat Advanced Concept and Technology

Regarding research and production capabilities, according to the 2004 National Nuclear Security Agency *Strategic Plan*, the United States intends to maintain indefinitely sufficient “responsive infrastructure” to “enable timely reconstitution to larger force levels, if needed; field new or modified nuclear warheads either to respond to a stockpile ‘surprise’ or to meet new military requirements; and, ensure readiness to conduct an underground nuclear test, if necessary.”<sup>34</sup> Among the programs:

- To maintain and expand their ability to maintain existing weapons and design new ones, the US nuclear weapons laboratories are spending billions of dollars on sophisticated research facilities. These range from new hydrodynamic facilities for explosive tests using substitute materials that will not produce a nuclear explosion to inertial confinement fusion facilities that can create conditions similar to those in a thermonuclear blast.<sup>35</sup>
- To assure its ability to “augment” its nuclear forces, the United States plans to build a new factory to produce plutonium pits – the baseball-sized spheres at the core of hydrogen bombs. Current plans call for a facility that could produce at least 125 pits per year,<sup>36</sup> with the capacity both for a larger “surge” capability and for “modular expansion” to increase base capacity without costly modifications.<sup>37</sup>
- While dismantlement has effectively ceased for the time being, more than 12,000 pits from dismantled US nuclear weapons are stored at the Pantex facility in Texas. The 7,000 of them declared by President Clinton as “excess” sit next to 5,000 “strategic reserve” pits in igloos, ready for use in new nuclear weapons if it were decided to produce new types.<sup>38</sup>

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Demonstration” is scheduled that “will develop a planning tool that will improve the warfighter’s confidence in selecting the smallest nuclear yield necessary to destroy underground facilities while minimizing collateral damage.” [US Defense Threat Reduction Agency, RDT&E Budget Item Justification Sheet (R-2 Exhibit) February 2005, Project #0603160BR, Project BK- Counterforce.] For an overview of current US research and development aimed at making nuclear weapons more useable, see *Sliding Towards the Brink: More Useable Nuclear Weapons and the Dangerous Illusions of High-Tech War*, WSLF Information Bulletin, March 2003, [www.wslfweb.org/docs/nucpreppdf.pdf](http://www.wslfweb.org/docs/nucpreppdf.pdf).

<sup>34</sup> US Department of Energy, National Nuclear Security Administration, *Strategic Plan*, November 2004, p. 7.

<sup>35</sup> See generally, e.g., US Department of Energy, *Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management*, 1996; US Department of Energy, National Nuclear Security Administration, *Stockpile Stewardship Plan, Fiscal Year 2001 (“Green Book”)*, 2000.

<sup>36</sup> Environmental studies for the pit production facility have considered capacities up to 450 per year in normal single shift operation, and considerably more if the government chose to operate a second shift. See generally US Department of Energy, *Draft Supplemental Programmatic Environmental Impact Statement on Stockpile Stewardship and Management for a Modern Pit Facility*, 2003. Recent Congressional testimony by National Nuclear Security Agency Administrator Linton Brooks estimated the MPF would have a capacity between 125 pits and “the low 200s.” Testimony of Linton F. Brooks, Administrator, National Nuclear Security Administration, Before the Strategic Forces Subcommittee of the House Armed Services Committee, March 2, 2005.

<sup>37</sup> US Department of Energy, National Nuclear Security Administration, “Requirements for a Modern Pit Facility: Summary,” Report to Congressional Defense Committees Requested by the United States Congress in Public Law 108-375, Ronald W. Reagan National Defense Authorization Act, January 2005, p. 4.

<sup>38</sup> Robert S. Norris and Hans M. Kristensen, “Dismantling US nuclear warheads,” NRDC: Nuclear Notebook in *Bulletin of the Atomic Scientists*, January/February 2004 pp. 72-74 (vol. 60, no. 01)

- Radioactive hydrogen - tritium, the "H" in H-bomb, is being newly produced at the Watts Bar commercial nuclear power plant in Tennessee, tearing down a historic US firewall between military and civilian nuclear production.<sup>39</sup>

US goals include the capability to modify existing weapons within eighteen months, and to develop and begin production of new designs within three to four years of a decision to do so.<sup>40</sup>

Surveying this vast array of activities, it is safe to conclude that led by the United States, the nuclear weapons states are engaged in nuclear modernization amounting to arms racing, and in planning for, and building the infrastructure for, the retention of large nuclear forces for many decades to come.

## **B. PART TWO: Nuclear Disarmament**

*Speaker: Michael Spies, Lawyers' Committee on Nuclear Policy*

In assessing compliance with the Article VI requirement of good-faith negotiations on effective measures relating to nuclear disarmament, the practical steps adopted in 2000 are an indispensable guide. The principles animating those steps of verification, transparency, and irreversibility are essential to states' participation in reduction of nuclear forces to low levels and undoubtedly to their elimination.

While the 2000 references to the ABM Treaty and to the START process have been mooted by US actions, on the whole - and certainly with respect to the principles - the practical steps remain as relevant today as they were five years ago. They should not be devalued by calling them "only political."

First, states should not go back on their freely given word, whatever the form.

Second, under Article 31 of the Vienna Convention on the Law of Treaties, subsequent agreements as well as practice have a crucial role in interpretation. Here the practical steps are a consensus agreement on the application of Article VI. Indeed, the 2000 Final Document states that "the Conference *agrees* on the following practical steps for the systematic and progressive efforts to implement Article VI [and the 1995 Principles and Objectives]." The practical steps are thus an essential guide to interpretation of Article VI. They identify criteria and principles that are so tightly connected to the core meaning of Article VI as to constitute requirements for compliance with the NPT.<sup>41</sup>

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<sup>39</sup> Alliance for Nuclear Accountability, "Top Ten Department of Energy Radioactive Pork Projects in the 2005 Budget," September 2004, p. 13, [www.ananuclear.org/topten.html](http://www.ananuclear.org/topten.html)

<sup>40</sup> US Department of Energy, National Nuclear Security Administration, *Strategic Plan*, November 2004, p.20

<sup>41</sup> See Lawyers' Committee on Nuclear Policy, "The Thirteen Practical Steps: Legal or Political?", May 2005, online at [lcnp.org/disarmament/npt/13stepsaper.htm](http://lcnp.org/disarmament/npt/13stepsaper.htm). The paper identifies the following criteria and principles as among those stating requirements of Article VI:



A final point: the practical steps have added weight because they are inextricably bound up with the 1995 decision to extend the treaty indefinitely, a decision that is both legally binding and of supreme practical importance. They spell out the "systematic and progressive efforts" committed to in the Principles and Objectives adopted in connection with the extension decision.

We do not propose now to do a comprehensive analysis of how the nuclear weapon states are failing to meet the 2000 commitments. It does bear mention that probably the most important instance of backsliding is the absence of provisions for transparency, verification, and irreversibility in the US-Russian Moscow Treaty. While monitoring mechanisms under START I may provide a means of verification, they would not fulfill the principle of irreversibility. Also, START I is set to expire in 2009. It also must be noted that the nuclear weapon states have failed to agree on the establishment of a body to deal with nuclear disarmament in the Conference on Disarmament. And it is worth dwelling on two of the commitments whose implementation is essential to progress towards elimination of nuclear arsenals.

First is the commitment to *concrete agreed measures to further reduce the operational status of nuclear weapons systems*: This commitment goes to the core of the nuclear dilemma. In particular, so long as the United States and Russia maintain many hundreds of nuclear warheads ready for immediate use and contend that this posture is essential to their security, implementation of the entire nuclear arms control/disarmament program is fraught with difficulty.

It is sometimes said that problems are solved when they are no longer problems. In that vein, massive nuclear arsenals will not be reduced and eliminated until the nuclear weapons states stop relying on them in an operational sense.

Since 2000 there has been little progress in this area. One could point to the Moscow Treaty. However, the achievement of levels of less than 2200 deployed strategic warheads in or before 2012 will not fundamentally alter the preparedness of each state to initiate immediately a large-scale nuclear attack.

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1) The Article VI obligation is to achieve the complete elimination of nuclear weapons, as the "unequivocal undertaking" in step 6 specifies, without any precondition of comprehensive demilitarization.

2) The reduction and elimination of nuclear arsenals are to be accomplished pursuant to principles of verification (employed in the START process, and referred to in step 13), transparency, and irreversibility.

3) Cessation of the nuclear arms race at an early date and nuclear disarmament pursuant to Article VI require a diminishing role of nuclear weapons in security policies and a reduction of their operational status.

4) The process of nuclear disarmament must involve all NPT nuclear weapon states (which are to be engaged as soon as appropriate) and multilateral negotiations involving non-nuclear weapon states (as in Conference on Disarmament negotiations on a fissile materials treaty and a CD body to deal with nuclear disarmament).

Non-governmental expert analysis of the mechanics of a stand-down of nuclear forces, often referred to as "dealerting," is ongoing. There are two dimensions: increasing assurance that no attack is underway; and decreasing the capability to immediately launch an attack.<sup>42</sup> This Review Conference should commit the nuclear weapon states to planning and implementation of a program to stand down nuclear forces, culminating in a global stand-down by the 2010 conference.

The second commitment we highlight is a *diminishing role for nuclear weapons in security policies to minimize the risk that these weapons ever be used and to facilitate the process of their total elimination*: The importance of this brilliantly framed and succinctly put commitment is self-evident. China's long-standing policy of no first use, predating 2000, is consistent. Unfortunately, China aside, since 2000 the commitment has been thoroughly ignored, as a brief review of doctrines illustrates all too convincingly:

*Britain* continues to retain the option of first use to defend "vital interests," as announced in 1998 and reaffirmed since then.<sup>43</sup>

*France* similarly retains the option of first use in defense of vital interests that include the "free exercise of our sovereignty."<sup>44</sup>

*Russia's* stance remains that set forth in its 2000 Security Concept, which states that nuclear weapons can be used "to repulse armed aggression, if all other means of resolving the crisis have been exhausted." The 2000 Concept itself regresses from the 1997 policy, which identified as the scenario for possible use of nuclear weapons "a threat to the very existence of the Russian Federation as an independent sovereign state." In 1993, Russia had abandoned its policy of renouncing first use.

The *United States* has enlarged the range of circumstances in which nuclear weapons might be used. The 2002 National Security Strategy to Combat Weapons of Mass Destruction, carrying the imprimatur of President Bush, removed ambiguity from previous US policy. It states that the United States will respond with "overwhelming force" - a phrase invoking a nuclear option - to chemical and biological attacks. The Defense Department's classified 2001 Nuclear Posture Review states that nuclear weapons "could be employed against targets able to withstand non-nuclear attack, (for

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<sup>42</sup> Possible steps are illustrated by a 2004 Rand Corporation study, *Beyond the Nuclear Shadow*, supported by the Nuclear Threat Initiative: assistance to Russia for its early-warning radars or satellites; creation of a US-Russian early-warning system using sensors placed outside missile silos; standing down nuclear forces to be reduced under the Moscow Treaty; restrictions on the operating area of nuclear-armed submarines; removal of counterforce capable warheads (e.g., Trident W-88 warheads); reduction of launch readiness of ICBMs; reduction of launch readiness of all nuclear forces; installation of destruct-after-launch mechanisms on ballistic missiles; and elimination of doctrines of launch on warning and rapid counterforce strikes.

<sup>43</sup> Ministry of Defence, July 1998, Strategic Defence Review: White Paper, [www.mod.uk/issues/sdr/index.htm](http://www.mod.uk/issues/sdr/index.htm); Ministry of Defence, July 2002, Strategic Defence Review: A New Chapter, [www.mod.uk/issues/sdr/newchapter.htm](http://www.mod.uk/issues/sdr/newchapter.htm) ("The UK's nuclear weapons have a continuing use as a means of deterring major strategic military threats, and they have a continuing role in guaranteeing the ultimate security of the UK."); Ministry of Defence, December 2003, Delivering Security in a Changing World: Defence White Paper, [www.mod.uk/linked\\_files/publications/whitepaper2003/volume1.pdf](http://www.mod.uk/linked_files/publications/whitepaper2003/volume1.pdf) ("The Government's policy on nuclear weapons remains as set out in the SDR.")

<sup>44</sup> Tertrais, 2004.

example, deep underground bunkers or bio-weapon facilities)," and refers to use of nuclear weapons in response to "surprising military developments" and "unexpected contingencies."<sup>45</sup>

Lest anyone think that the leaked Defense Department document is exceptional in its identification of a pervasive role for nuclear weapons, whether actually detonated or not, in US military operations, consider these excerpts from the Defense Department's February 2004 *Strategic Deterrence Joint Operating Concept*:

. . . US nuclear forces contribute uniquely and fundamentally to strategic deterrence--through their ability to impose costs and deny benefits to an adversary in an exceedingly rapid and devastating manner no adversary can counter.

Nuclear weapons provide the President with the ultimate means to terminate conflict promptly on terms favorable to the United States. They cast a lengthy shadow over a rational adversary's decision calculus when considering coercion, aggression, WMD employment, and escalatory courses of action. Nuclear weapons threaten destruction of an adversary's most highly valued assets, including adversary WMD/E [weapons of mass destruction/effect] capabilities, critical industries, key resources, and means of political organization and control (including the adversary leadership itself). This includes destruction of targets otherwise invulnerable to conventional attack, e.g., hard and deeply buried facilities, "location uncertainty" targets, etc. Nuclear weapons reduce an adversary's confidence in their ability to control wartime escalation.

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The use (or threatened use) of nuclear weapons can also reestablish deterrence of further adversary WMD employment. Alternatively, nuclear weapons can constrain an adversary's WMD employment through US counterforce strikes aimed at destroying adversary escalatory options....

Although advances in conventional kinetic and non-kinetic means [e.g., computer network attack (CAN), High Energy Radio Frequency (HERF), directed energy (DE), etc.] by 2015 will undoubtedly supplement US nuclear capabilities to achieve these effects, nuclear weapons that are reliable, accurate, and flexible will retain a qualitative advantage in their ability to demonstrate US resolve on the world stage. These capabilities should be further enhanced by improving our capability to integrate nuclear and non-nuclear strike operations. Providing the President an

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<sup>45</sup> "Nuclear Posture Review [Excerpts] Submitted to Congress on 31 December 2001. 8 January 2002, Nuclear Posture Review Report." Online at [www.globalsecurity.org/wmd/library/policy/dod/npr.htm](http://www.globalsecurity.org/wmd/library/policy/dod/npr.htm).

enhanced range of options for both limiting collateral damage and denying adversaries sanctuary from attack will increase the credibility of US nuclear threats, thus enhancing deterrence and making the actual use of nuclear weapons less likely. Additionally, nuclear weapons allow the US to rapidly accomplish the wholesale disruption of an adversary nation-state with limited US national resources. While the legacy force was well suited for successful deterrence throughout the Cold War, an enhanced nuclear arsenal will remain a vital component of strategic deterrence in the foreseeable security environment.<sup>46</sup>

A pithier explanation was provided by the commander of the US Air Force Space Command in October 2004, who stated:

The legacy of our ICBMs is strategic deterrence, but today, they also provide operational deterrence...Gen Jumper calls it "Top cover for the AEFs [Air Expeditionary Forces]." Our ICBMs deter our enemies from unacceptable escalation of combat...providing an "incentive" against regimes that may consider using weapons of mass destruction...such as chemical weapons...against US or allied forces. To put a bumper sticker on it, "our ICBMs make our adversaries think twice!"<sup>47</sup>

Relying on the history of non-use in war since the US atomic bombings of Japanese cities, the optimist thinks that the risk is vanishingly small that political leaders, in the United States or other nuclear-armed states, will act on these doctrines of use of nuclear weapons. The pessimist thinks that circumstances change, and that, as the stock market warning says, past performance is no guarantee of future results. But the point of a "diminishing role for nuclear weapons in security policies," and more largely of the unequivocal undertaking and Article VI, is that the peoples of the world do not wish to run the risk, whatever its magnitude. Nor do they wish to live in a world in which supposed security is made dependent on a morally repugnant nuclear balance of terror.

### **C. PART THREE: General and Complete Disarmament**

*Speaker: John Burroughs, Lawyers' Committee on Nuclear Policy*

In addition to effective measures relating to cessation of the nuclear arms race and to nuclear disarmament, Article VI requires good-faith negotiations "on a Treaty on general and complete disarmament under strict and effective international control." What is the nature of the envisaged treaty?

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<sup>46</sup> US Department of Defense, *Strategic Deterrence Joint Operating Concept*, February 2004, pp. 32-33, [www.dtic.mil/jointvision/sd\\_joc\\_v1.doc](http://www.dtic.mil/jointvision/sd_joc_v1.doc). "Joint Operating Concepts" are part of a set of planning documents intended "to assist in the development of enhanced joint military capabilities needed to protect and advance US interests." The goal is "to realize the Chairman's vision of achieving Full Spectrum Dominance by the Joint Force." *Id.* at p. 1.

<sup>47</sup> "Our people ... Generating Combat Effects from and through space," a speech prepared for General Lance W. Lord, Commander, US Air Force Space Command, Strategic Space Conference, Qwest Center, Omaha, NE, October 7, 2004, [www.peterson.af.mil/hqafspc/50th/speeches.asp?yearlist=20004&speechchoice=81](http://www.peterson.af.mil/hqafspc/50th/speeches.asp?yearlist=20004&speechchoice=81).

The preamble would seem to answer this question, referring to "the elimination from national arsenals of nuclear weapons and the means of their delivery pursuant to a Treaty on general and complete disarmament." That is, the preamble seems to refer to a treaty on elimination of nuclear forces as an instance of a type of treaty, the type being treaties on general and complete disarmament.

Similarly, the Biological Weapons Convention and the Chemical Weapons Convention each is a treaty on general and complete disarmament. As the preamble to the CWC says, they represent "effective progress towards general and complete disarmament under strict and effective international control, including the prohibition and elimination of all types of weapons of mass destruction." Following this logic, a treaty on the prohibition and elimination of nuclear weapons would be *a* treaty that would represent progress towards the achievement of general and complete disarmament.<sup>48</sup>

This is consistent with how the International Court of Justice read Article VI. The Court effectively combined the two clauses of the article. Its unanimous holding is that "there exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control." The reference to "strict and effective international control" comes directly from the second clause on general and complete disarmament, and the phrase "in all its aspects" could refer to related matters like the delivery systems referred to in the preamble.

The 2000 commitments are to like effect. The unequivocal undertaking to eliminate nuclear arsenals is separated from the reaffirmation of the "ultimate objective" of "general and complete disarmament under effective international control."

Nonetheless, certain nuclear weapon states still insist on linking progress towards nuclear disarmament with progress on other disarmament and security fronts. After the ICJ opinion and the 2000 commitments, one would have thought this matter to be settled. But in February of this year, the US Assistant Secretary of State for Arms Control said that the "text and negotiating history of the NPT support the expectation that efforts toward complete nuclear disarmament would be linked with efforts towards general and complete disarmament.... It follows that if anyone wishes to argue that the nuclear weapons states are in default on their obligations relating to nuclear disarmament, they

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<sup>48</sup> For analysis of a issues raised by a nuclear weapons convention, and a revised version of a model convention circulated to UN member states by the Secretary-General, see Merav Datan and Alyn Ware, *Security and Survival: The Case for a Nuclear Weapons Convention*, International Physicians for the Prevention of Nuclear War, 1999, online at [www.ippnw.org/IPPNWBooks.html#NWC](http://www.ippnw.org/IPPNWBooks.html#NWC). The 2000 New Agenda resolution (A/55/33C) acknowledges the logic of a convention or convention-like approach affirming "that a nuclear-weapon-free world will ultimately require the underpinnings of a universal and multilaterally negotiated legally binding instrument or a framework encompassing a mutually reinforcing set of instruments."

will have a difficult time explaining why all NPT states parties are not also in default on their obligations relating to general and complete disarmament."<sup>49</sup>

And in May 2004, France referred to the 1995 "action program" as including "the determination to move forward systematically and progressively in cutting nuclear weapons as a whole within the framework of general and complete disarmament."<sup>50</sup>

As we have demonstrated, there is no legal link between elimination of nuclear arsenals and comprehensive demilitarization. This point must be insisted upon, so as not to allow nuclear weapon states a rote excuse for failure to comply with Article VI.

It is also the case, however, that in certain respects there may be *practical* links between progress towards nuclear abolition and other disarmament measures. A verification regime for the ban on biological weapons and a regime preventing the weaponization of outer space both would give the nuclear-armed states greater confidence in proceeding towards elimination of nuclear arsenals.

Here the United States is in absolutely no position to lecture other states about meeting obligations of general and complete disarmament.<sup>51</sup> In 2001, the United States shattered seven-year old negotiations on a verification protocol for the BWC. It stands virtually alone in opposing commencement of negotiations on a PAROS treaty. And its withdrawal from the ABM Treaty and pursuit of missile defenses makes reduction of nuclear forces more difficult, as other major states make calculations about what capabilities they would wish to retain for a second-strike option.

Nor can we overlook trends in high-tech, conventional armament. For example, the US Navy is converting four ballistic missile submarines to carry conventionally-armed cruise missiles and Special Forces units.<sup>52</sup> Contractors have been asked to submit concepts for new intermediate-range submarine-launched missiles, capable of carrying conventional or nuclear payloads.<sup>53</sup> Military planners are looking at potential

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<sup>49</sup> Stephen G. Rademaker, "US Compliance With Article VI of the Non-Proliferation Treaty (NPT)," Remarks at a Panel Discussion of the Arms Control Association, Carnegie Endowment for International Peace, Washington, D.C., February 3, 2005, [armscontrol.org/events/20050203\\_rademaker\\_text.asp](http://armscontrol.org/events/20050203_rademaker_text.asp).

<sup>50</sup> Statement by H.E. Mr. François Rivasseau, Permanent Representative of France to the Conference on Disarmament," April 26, 2004, New York, Third Session of the Preparatory Committee for the 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons.

<sup>51</sup> General and complete disarmament also refers to measures on such weapons as landmines and small arms, not addressed here because, unlike biological weapons and missiles, they generally are not considered "strategic weapons."

<sup>52</sup> Norris and Kristensen, "US Nuclear Forces, 2005."

<sup>53</sup> Norris and Kristensen, "US Nuclear Forces, 2005"; Department of the Navy, Strategic Systems Programs, Special Notice, Submarine Launched Intermediate Range Ballistic Missile Technical Exchange, Reference-Number-08252003-0358, August 25, 2003; Department of the Navy, Strategic Systems Programs, "Request for Information (RFI) from Industry for a Submarine Launched Intermediate Range Ballistic Missile (SLIRBM) Launcher Subsystem (SLS)," March 7, 2005, solicitation #GPO381249. The latter announcement solicited concepts and information from contractors for technologies that would allow launch of several SLIRBM's from a single launch tube on a converted ballistic missile submarine.

conventional “global strike” missions for deactivated Peacekeeper missiles.<sup>54</sup> The US Air Force is planning for a new ICBM to be deployed in 2018, some of which could be conventionally armed.<sup>55</sup> In addition to exploring conventional payloads for existing ICBMs, under the label of non-weapons research the military is pursuing a variety of technologies that could allow accurate weapons delivery at global distances.<sup>56</sup> Further, upgrades to computer software and hardware used to plan and execute nuclear strikes and new military communication satellites will improve capabilities for non-nuclear as well as nuclear war-fighting.

While the United States contends that development of conventional forces demonstrates decreased reliance on nuclear forces, the effects nonetheless can be counterproductive in the nuclear sphere. Use of conventionally-armed missiles would run the risk of causing other states to believe they are under nuclear attack. More generally, other major states may be reluctant to agree to nuclear arms control/disarmament measures if they view their nuclear forces as a necessary deterrent to dramatically improved US non-nuclear capabilities. That is all the more true should the United States eventually execute schemes for placing weapons in space.

In short, if the United States wishes to insist on the importance of progress towards general and complete disarmament for the achievement of nuclear abolition, it should look first of all to itself.

## Conclusion

To conclude this three part Article VI compliance assessment: Interpreted in light of the NPT preamble and the 1995 and 2000 commitments, Article VI provides an excellent road map for the achievement of nuclear abolition: implementation of effective measures on cessation of the nuclear arms race at an early date and toward nuclear disarmament, and conclusion of a treaty on the elimination of nuclear forces. Over the last five years, the nuclear weapon states, and especially the United States, have gone way off the map. This Review Conference should reaffirm the road map and point the nuclear weapon states back in the right direction.

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<sup>54</sup> In 2004, the Defense Science Board recommended that “The Air Force should preserve 50 Peacekeeper ICBMs currently being deactivated, and redeploy them to Vandenberg and Cape Canaveral for use with conventional warheads,” noting that “[t]hese weapons would give the United States a 30-minute response capability for strategic strike worldwide.” *Report of the Defense Science Board Task Force on Future Strategic Strike Forces*, 2004, p.1-8; Norris and Kristensen, “US Nuclear Forces, 2005.”

<sup>55</sup> Robert S. Norris, Hans M. Kristensen, Christopher E. Paine, Natural Resources Defense Council, *Nuclear Insecurity: A Critique of the Bush Administration's Nuclear Weapons Policies*, September 2004, p. 11.

<sup>56</sup> See *War is Peace, Arms Racing is Disarmament: The Non-Proliferation Treaty and the US Quest for Global Military Dominance*, Western States Legal Foundation Special Report, May 2005, at 14-15, online at [www.wslfweb.org/docs/warispeace.pdf](http://www.wslfweb.org/docs/warispeace.pdf).