

Group 1

Introduction

The promise of the 2000 NPT Review—that the nuclear-weapon states and non-nuclear-weapon states would work together in an “unequivocal undertaking” for the global elimination of nuclear weapons—thus fulfilling the promise of Article VI of the Treaty and complying with the unanimous decision of the International Court of Justice that there is an international obligation to *conclude* negotiations for the elimination of nuclear weapons in all its aspects--all but evaporated with the failure of the 2005 Review. The NGO community, along with most of the NPT Member States who fervently want to see that pledge fulfilled, left New York in May 2005 disheartened, angry, and uncertain about the future of the NPT itself.

We have reassembled today in Vienna to do two things: to report to you, from the civil society perspective, the worsening situation for disarmament and non-proliferation since 2005; and to offer some solutions that we believe are meaningful, practical, achievable, and absolutely necessary if we are to rid the world of the intolerable threat of nuclear war.

In this first presentation, we will focus on what we consider the most disturbing developments since the 2005 Review, along with some emerging problems that will only lead us further down a dangerous path if appropriate actions are not taken between now and the 2010 Review.

Vertical Proliferation

We begin with a summary of backward steps taken by the Nuclear Weapon States Parties to the NPT, and have chosen to lead off with the UK, since the recent Trident debate is still fresh on our minds.

United Kingdom

On March 14 of this year, the British House of Commons voted to back Prime Minister Tony Blair’s plan to renew Trident. The United Kingdom had a unique opportunity to take a bold and courageous lead toward ending the world’s nuclear nightmare, but instead will seek the indefinite possession of nuclear weapons. The UK Government will spend more than £1 billion over the next three years on upgrading Aldermaston and Burghfield. Aldermaston is also recruiting hundreds of new nuclear scientists, engineers, and support staff with expertise clearly applicable to designing new nuclear weapons. The Trident replacement system itself will cost anywhere from £25-75 billion to produce, maintain, and operate over the next several decades. We wish to emphasize the word “decades,” which is incompatible with a commitment to eliminate nuclear weapons in any meaningful timeframe.

The decision to extend the UK’s Trident nuclear weapons system until 2055 will undermine efforts by the international community to control the spread of nuclear weapons. Moreover, the renewal and modernization of Trident vitiates the pledge the UK made nearly 40 years ago in exchange for a pledge from the non-nuclear weapons signatories to remain forever nuclear weapon-free.

All abstract arguments about deterrence, and national security, and the dangers of a post-911 world aside, what this really comes down to is a refusal by the British Government, now with the blessing of Parliament, to give up its power to inflict catastrophic levels of instantaneous death and environmental

destruction on innocent human populations.

Part of the British government's argument for Trident replacement is based on a claim that warheads with substantially lower yields will take the place of warheads that currently pack as much as 100 kilotons of destructive force, thereby making progress toward nuclear disarmament. Yet even a 1-kiloton nuclear warhead can kill everyone within three square kilometers of ground zero and can cause radiation sickness and long term health effects, including increased cancer rates, among people as far as 80 kilometers downwind of the explosion. Even a relatively low-yield Trident replacement system is an instrument of mass murder and a step in the wrong direction from a true disarmament perspective.¹

Trident replacement also undermines non-proliferation. In its White Paper, the British government argues that "an independent British nuclear deterrent is an essential part of our insurance against the uncertainties of the future."² Setting aside the implicit concession that there are no existing security threats against the UK for which nuclear weapons are a demonstrable answer, we contend that Trident replacement will actually add to the uncertainties of the future, leading some countries to question whether their commitment to Article II of the NPT is really in their best interests.

Last January, the *Bulletin of the Atomic Scientists* issued a dire warning when it moved the minute hand of its Doomsday Clock two minutes closer to midnight, the figurative end of civilization. "Not since the first atomic bombs were dropped on Hiroshima and Nagasaki has the world faced such perilous choices," stressed the Bulletin. The choice to renew Trident makes the probability of the use of nuclear weapons more, not less, likely.

United States

The Bush Administration's policies, as outlined in the 2001 Nuclear Posture Review and the 2002 and 2006 National Security Strategies of the United States, have been accelerating the US slide down the slippery slope toward new and modified nuclear weapons for possible use in aggressive war fighting scenarios.³ Most of the design and development work is being done under the Department of Energy's National Nuclear Security Administration (NNSA) at the Livermore and Los Alamos National Laboratories. This work is not entirely new, however. It is the continuation of programs and policies that have been carried out by every US administration, Republican or Democrat, since President Harry Truman - a Democrat - ordered the US atomic bombings of two Japanese cities in 1945.

In August 1995, citing the promise made in connection with indefinite extension of the NPT earlier that year, US President Bill Clinton announced his support for a Comprehensive Test Ban Treaty by 1996, in order to "reduce the danger posed by nuclear weapons proliferation." He also announced the US intent, "as part of our national security strategy," to "retain strategic nuclear forces. . . In this regard," he stated, "I consider the maintenance of a safe and reliable nuclear stockpile to be a supreme national interest of the United States." Clinton strongly endorsed the nuclear weapons labs' "Science Based Stockpile Stewardship" program to "compensate" the weaponeers for the "loss" of full-scale underground nuclear testing, and he appealed to Congress for bipartisan support for the program "*over the next decade and beyond*."⁴ Congress provided that support and just over ten years later, in April

¹ Peacerights. Proposed Replacement of Trident, Joint Opinion for Peacerights. March 6, 2007.

² Secretary of State for Defence and Secretary of State for Foreign and Commonwealth Affairs. The Future of the United Kingdom's Nuclear Deterrent. December 2006.

³ For a detailed analysis, see Robert Civiak, *The Reliable Replacement Warhead Program: A Slippery Slope to New Nuclear Weapons*, Tri-Valley CAREs Report (January 2006).

⁴ Statement by the President, Comprehensive Test Ban Treaty, The White House, Office of the Press Secretary, August 11, 1995.

2006, the NNSA rolled out its plans for Complex 2030, the new name for its evolving nuclear weapons research and production infrastructure.

The Department of Energy proudly traces its lineage to the Manhattan Project and the race to develop an atomic bomb during World War II.⁵ The Livermore Lab in California was founded in 1952 to compete with its Los Alamos Lab in New Mexico - the original home of the Manhattan Project - to develop a hydrogen bomb, orders of magnitude more powerful than the US atomic bombs that destroyed Hiroshima and Nagasaki. Today, the Livermore and Los Alamos National Laboratories – *the direct descendants of the Manhattan Project* – are engaged in a new arms race with each other to design the next generation of hydrogen bombs, euphemistically called “Reliable Replacement Warheads” (RRWs).

In late 2005, Congress stopped initial steps toward new nuclear weapons, refusing particularly to fund the administration’s Robust Nuclear Earth Penetrator (“bunker buster”) program. The NNSA responded with a new initiative to develop new nuclear warheads, the so-called “Reliable Replacement Warhead” (RRW) program. Congress enabled the beginnings of the RRW program in fiscal year 2005 with a modest \$9 million and gave it direction in the form of a single sentence, stating the lawmakers’ intent to limit RRW to “improving the reliability, longevity, and certifiability of *existing* weapons and their components” [emphasis added]. Since then, the allocation of funds to this ill-defined, extremely open-ended weapons design program has steadily increased.

After a lengthy design competition, the Livermore Lab has recently been given the green light to proceed with development of a replacement for the 100-kiloton W76 warhead⁶ (some 1,600 of which are currently deployed on Trident II D-5 submarine-launched ballistic missiles). The Nuclear Weapons Council, a joint Department of Defense (DoD)-DOE agency, has directed the NNSA to begin another design competition for a second RRW. The first RRW is due for production in 2012; the production goal for the second warhead is 2014.⁷ A DoD document outlining the future of the nuclear stockpile, forecasts that the US will “develop warheads for next-generation delivery systems” between 2010 and 2020. The “long term vision” stated in the “Stockpile Transformation” chart includes “possible new DoD platforms and delivery systems” along with “2-4 types of RRWs”⁸

The NNSA’s fiscal year 2008 budget, released in February 2007, requests nearly \$89 million in direct funding for RRW – more than a three-fold increase over last year’s request. In addition, there are hundreds of millions in funding requests which are indirectly linked to the RRW program. Further funds (\$30 million in 2008) can be found in the budget request of the DoD.

While the legislative intent behind the RRW program was the maintenance of “existing” warheads, the NNSA and the weapons labs see the program as an opportunity to redesign – and rebuild (i.e., replace) – every nuclear weapon in the enduring US arsenal. While the United States accuses Iran of violating the NPT, and without apparent regard for its Article VI disarmament obligation, the US is well on its way toward the development and production of an entirely new nuclear weapon, the first in a series of up to six new hydrogen bombs.⁹

In April 2006 testimony to Congress, the Deputy Director for Defense Programs at the NNSA bragged:

⁵ US Department of Energy. Strategic Plan, October 2, 2006, p. 6; www.doe.gov/media/2006_DOE_Strategic_Plan.pdf

⁶ Design Selected for Reliable Replacement Warhead, National Nuclear Security Administration, Official Press Release, March 2, 2007, http://www.nnsa.doe.gov/docs/newsreleases/2007/PR_2007-03-02_NA-07-06.htm

⁷ NNSA Pursuing Second RRW Design ‘Concept,’ by George Lobsenz, Defense Daily, February 12, 2007

⁸ Pentagon Envisions New Warheads for New Delivery Systems, Andrew Lichterman, July 27, 2006, <http://disarmamentactivist.org/2006/07/27/pentagon-envisions-new-warheads-for-new-delivery-systems/>

⁹ According to the Pentagon website, four new nuclear weapons will be developed. Lynton Brooks, Former Director of the DOE’s Nuclear Security Administration, spoke of “all” existing warheads being replaced.

“Progress on RRW has been remarkable. Last year, the DoD and DOE jointly initiated an RRW competition in which two independent design teams from our nuclear weapons laboratories—LLNL and LANL both in partnership with Sandia and the production complex—are exploring RRW options. A competition of this sort has not taken place in over 20 years, and *the process is providing a unique opportunity to train the next generation of nuclear weapons designers and engineers*. Both teams are confident that their designs will meet established requirements and be certifiable and producible without nuclear testing.”¹⁰

This testimony was proffered in support of the NNSA’s “Complex 2030” plan for the future of the nuclear weapons complex. Under this proposal, “NNSA’s future path is to establish a smaller, more efficient Nuclear Weapons Complex that is able to respond to changing national and global security challenges.”¹¹ The RRW Program is identified as a principal element of Complex 2030, “to ensure the long-term reliability and safety of the nuclear weapons stockpile and enable a more responsive supporting infrastructure while reducing the possibility that the United States would ever need to return to underground testing.”¹² While the NNSA claims that “RRW is not a new weapon providing new or different military capabilities and/or missions,”¹³ then-NNSA chief Linton Brooks was very clear that this possibility remains on the table.

“In 2030, our Responsive Infrastructure can also produce weapons with different or modified military requirements as required. The weapons design community that was revitalized by the RRW program can adapt an existing weapon within 18 months and design, develop and begin production of the new design within 3-4 years of a decision to enter engineering development... goals that were established in 2004. Thus, if Congress and the President direct, we can respond quickly to changing military requirements.”¹⁴

Brooks spelled out the purpose of the “responsive infrastructure:” “The current nuclear weapons complex was built in the 1950s and 60s for the Cold War. Unless this infrastructure is improved, we will not be suited for 21st century challenges. As outlined in the 2001 *Nuclear Posture Review*, we are moving towards a nuclear deterrent that is smaller, more capable and better able to respond to changing needs. Our *Complex 2030* plan... puts NNSA on a path to achieve this necessary national security goal.... In short, I see a future world where a smaller, safer, more secure and more reliable stockpile is backed up by a robust industrial and design capability to better respond to changing technical, geopolitical or military needs.”¹⁵

This work is already in progress under the existing Stockpile Stewardship program. “Life Extension Programs,” to render the US nuclear arsenal reliable for decades to come have been completed for the W80 Cruise Missile and are underway for the B61 bomb and the W76 SLBM (Sea Launched Ballistic

¹⁰ Statement of Thomas P. D’Agostino, Deputy Administrator for Defense Programs, National Nuclear Security Administration Before the House Armed Services Committee Subcommittee on Strategic Forces, April 5, 2006, p. 9, [www.nnsa.doe.gov/docs/congressional/2006/2006-04-05_HASC_Transformation_Hearing_Statement_\(D’Agostino\).pdf](http://www.nnsa.doe.gov/docs/congressional/2006/2006-04-05_HASC_Transformation_Hearing_Statement_(D’Agostino).pdf)

¹¹ National Nuclear Security Administration, Future of the Nuclear Weapons Complex, www.nnsa.doe.gov/future_of_the_nuclear_weapons_complex.htm

¹² Id.

¹³ NNSA Factsheet, *NNSA’s Reliable Replacement Warhead (RRW) Program; Modernizing the Nuclear Weapons Complex Today To Make It More Responsive to the Challenges of Tomorrow*, www.nnsa.doe.gov/docs/factsheets/2006/NA-06_FS03.pdf

¹⁴ Ambassador Linton F. Brooks, Administrator, National Nuclear Security Administration Speech to the East Tennessee Economic Council March 3, 2006, p. 4, www.nnsa.doe.gov/docs/speeches/2006/speech_Brooks_East-Tenn-Economic-Council-03Mar06.pdf#search=%22Linton%20Brooks%20Reliable%20Replacement%20Warhead%20Tennessee%22

¹⁵ NNSA press release, *NNSA Establishes New Office to Lead Future of Nuclear Weapons Complex*, June 28, 2006, www.nnsa.doe.gov/docs/newsreleases/2006/PR_2006-06-28_NA-06-20.htm

Missile).¹⁶ While considering options for a new large-scale factory for warhead components, the US is establishing significant “interim” capacity to make bomb parts at its existing facilities.¹⁷

Complex 2030 goals include a new nuclear weapon design coming out of Livermore and Los Alamos Labs every five years, production of more than 100 of these weapons each year, a new plutonium pit production facility capable of making 125 certifiable new bomb cores per year, and some consolidation of nuclear weapons materials (i.e., plutonium and highly enriched uranium) to fewer, larger, sites. Complex 2030 plans also anticipate identifying sites for joint flight testing operations in which “NNSA and DOD hardware is tested to assure compatibility between NNSA and DOD hardware interfaces for current and *future* ...weapons,”¹⁸ along with accelerated dismantlement activities. In other words, *fewer but newer nukes forever*.

According to the NNSA, “Once it is demonstrated that replacement warheads can be produced on a timescale in which geopolitical threats could emerge, or the nuclear weapons complex can respond in a timely way to technical problems in the stockpile, further reductions can be made in reducing on-deployed warheads.”¹⁹ *This approach renders the disarmament objective implicit in further reductions meaningless.*

Though largely unnoticed by the media or the public, the United States routinely conducts long-range missile tests. Between January 2000 and July 2006, the US conducted at least 48 tests of intercontinental ballistic missiles (ICBMs) and submarine launched ballistic missiles, including some 23 Minuteman III ICBMs, launched from Vandenberg Air Force Base in California. In a June 14, 2006 news release issued by the 30th Space Wing, the Air Force spokesman explained: “While ICBM launches from Vandenberg almost seem routine, *each one requires a tremendous amount of effort and absolute attention to detail in order to accurately assess the current performance and capability of the Nation’s fielded ICBM force that is always on-alert in Montana, North Dakota, Wyoming, Colorado and Nebraska.* This specific test will provide key accuracy and reliability data for on-going and future modifications to the weapon system, which are key to improving the already impressive effectiveness of the Minuteman III force.”²⁰ Less than a week after the United Nations Security Council unanimously adopted a resolution condemning North Korea for test launching several ballistic missiles, the United States launched an unarmed Minuteman III intercontinental ballistic missile on July 20, 2007 from Vandenberg. The missile, carrying three dummy warheads, was fired 4,200 miles across the Pacific toward the missile test range at Kwajalein Atoll in the Marshall Islands, with a flight time of about 30 minutes.

While most public attention is focused narrowly on upgrades to nuclear warheads, the Pentagon and its contractors are poised to begin development of a new generation of long range delivery systems,

¹⁶ The Stockpile Life Extension Program extends the lifetime of existing nuclear weapons by identifying and correcting potential technical issues and refurbishing and replacing certain components within each weapon. The Life Extension program can also give existing weapons new or enhanced military capabilities. For example, under this program the W76 warhead missile is being given a capacity to destroy “hard targets” with a “ground burst” by modifying a subsystem in its reentry vehicle. The W76 is also the first warhead being redesigned under the Reliable Replacement Warhead Program, with the intention of manufacturing entirely new warheads.

¹⁷ See U.S. Department of Energy, *National Nuclear Security Administration, Notice of Intent To Prepare a Supplement to the Stockpile Stewardship and Management Programmatic Environmental Impact Statement—Complex 2030*, Federal Register Vol. 71, No. 202 October 19, 2006, 61731

¹⁸ Joint Flight Test Program, National Nuclear Security Administration, www.complex2030peis.com/Flight%20Test%20Program.pdf

¹⁹ NNSA Factsheet, *ibid*.

²⁰ “Minuteman III ICBM launch successful,” 30th Space Wing Public Affairs, June 16, 2006, www.missileneews.com/space-command-news/minuteman-iii-icbm-launch.shtml

capable of carrying either conventional or nuclear warheads. Such systems, intended primarily to increase the already formidable US advantage in conventional weapons, may in the long run be more dangerous than proposed improvements in nuclear warheads. The US government is also considering options for replacement of the intercontinental ballistic missiles that are the core of the US nuclear arsenal. New delivery systems for nuclear weapons would involve many of the same technologies that would be developed for long-range missiles carrying non-nuclear payloads. These technologies could provide the building blocks for new nuclear capabilities, particularly in combination with warhead modifications now in progress or under consideration.

With virtually no national debate about the *purpose* nuclear weapons serve, the advent of the RRW has given rise to an increasingly narrow and distorted public discourse about the *future* of nuclear weapons. An official government study on plutonium aging, released in November 2006, created a flurry of national media attention. The study, conducted by nuclear scientists at the Livermore and Los Alamos Labs and reviewed by an outside panel of nuclear weapons experts known as the JASONs, concluded that plutonium pits degrade at a much slower rate than was previously believed. The study found that plutonium in the US nuclear arsenal remains viable for as long as 100 years, more than twice as long as had been thought. Some critics of Complex 2030 seized on the report, claiming it “proved” that new pits and warheads are “completely unnecessary” because the existing warheads will last for a century.²¹ But the Democratic Congressional Representative whose district includes the Livermore Lab welcomed the study, claiming that plutonium aging is a “side matter” that will not influence the RRW decision, which she characterized as “an opportunity to rejuvenate the complex” and attract the “smartest scientists in the world” to the weapons labs.²² Indeed, the NNSA issued a press release two days later, reaffirming its commitment to the RRW program as the best strategy for “*sustaining the nation’s nuclear weapons stockpile for the long-term without underground nuclear testing.*”²³

Some argue that Complex 2030 is merely a “make work” program for scientists and engineers, or that the nuclear weapons we already have are not “useable.” But consider the following passage from an August 2006 DOD planning document:

“Within Global Strike, US nuclear forces contribute uniquely and fundamentally to deterrence—through their ability to threaten to impose costs and deny benefits to an adversary in an exceedingly rapid and devastating manner. *Nuclear weapons provide the President with the ultimate means to terminate conflict promptly on terms favorable to the US...* Nuclear weapons threaten destruction of an adversary’s most highly valued assets, including adversary WMD 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 adversary decision-makers’ confidence in their ability to control wartime escalation.”²⁴

Now, after spending about \$70 billion on new design capabilities under Stockpile Stewardship, the same weaponeers want to embark on the new RRW program. “Complex 2030” is the programmatic

²¹ See, for example, H. Josef Hebert, Associated Press Writer, *Study: Warhead plutonium long-lasting*, November 29, 2006, http://p107.news.scd.yahoo.com/s/ap/20061130/ap_on_sc/plutonium_weapons

²² Ian Hoffman, *Report: Nukes not so rusty, New information on plutonium’s lifespan undermines Bush’s plan*, Oakland Tribune, November 29, 2006, www.insidebayarea.com/search/ci_4738283

²³ NNSA News, *Nuclear Weapons Officials Agree to Pursue RRW Strategy*, December 1, 2006, www.nnsa.doe.gov/docs/newsreleases/2006/PR_2006-12-01_NA-06-47.pdf

²⁴ Final Draft, *Deterrent Operations Joint Operating Concept*, Department of Defense, United States of America, Version 2.0, August 2006, pp. 39-40, http://www.dtic.mil/futurejointwarfare/concepts/do_joc_v20.doc

"enabler" for RRW and new nuclear weapons, in that it would provide not only more design capability but also the infrastructure needed to actually build the new bombs and warheads.

The Government Accountability Office has estimated the price tag for "Complex 2030" to be at least US \$150 billion over the next 25 years. Activists, citing similar DOE programs in the past, argue that the program is likely to cost twice as much. The true cost of "Complex 2030" goes beyond money and includes increasing proliferation pressures internationally, a new generation of workers made ill by on the job exposures, and new contamination in communities surrounding all eight proposed sites.

The US National Nuclear Security Administration's Fiscal Year (FY) 2008 budget request of \$6.51 billion for nuclear weapons research, development, and testing activities is \$103.4 million more than the FY 2007 request.²⁵ Even after accounting for inflation, this is more than one-third higher than the average annual spending on nuclear weapons during the Cold War.²⁶ Moreover, this figure does not include delivery systems or command and control technologies, which are funded separately through the Department of Defense. Many of the DoD programs are "dual-use," meaning shared with conventional weapons systems, which complicates assessment of the total budget. Nonetheless, in late 2004, the Natural Resources Defense Council estimated, "approximately \$40 billion, or about 10 percent of the annual US military budget [at that time], is spent on nuclear weapons."²⁷ *This is more than the entire military budget of nearly every individual country in the world.* In 2004 or 2005, only China (\$62.5 B), Russia (\$61.9B), the United Kingdom (\$51.1B), Japan (\$44.7B), and France (\$41.6B), spent more than \$40 billion in total on their militaries.²⁸

In a well-known line from the movie, "Field of Dreams," the protagonist declares, "If you build it, they will come." He was talking about a baseball field and the sports fans it would attract. In the same way, as we're clearly seeing, *if you build a new nuclear weapons infrastructure, it will produce new nuclear weapons.* As events have continued to unfold in the post Cold War era, it has been conclusively demonstrated that, *the closure and monitoring of the nuclear weapons infrastructure in all nuclear weapons states must begin early in the process of disarmament. Nuclear weapons research, testing, and component production should be halted while reductions are in progress, not after, with nuclear weapons production and research facilities subject to intrusive verification regimes at the earliest possible time.*

Maintenance of a nuclear arsenal for another hundred years, whether in the form of existing or "new" weapons, by the only country that has so far used nuclear weapons, is "unreasonable," unacceptable, and unlawful. It is long past time for us to break out of the confines of technical arguments against the "need" for replacement warheads, and instead to demand the *only* reasonable alternative, nuclear abolition. The United States, in compliance with its obligation under the NPT, should commit to the elimination of nuclear weapons *no later than 2030*, by initiating negotiations leading to conclusion of a verifiable treaty, under strict and effective international control.

²⁵ Brian Ellison, "Overview of Fiscal Year 2008 Department of Energy Budget Request," Center for Defense Information, February 8, 2007. Online at www.cdi.org/friendlyversion/printversion.cfm?documentID=3831

²⁶ Dr. Robert Civiak, "Still At It: An Analysis of the Department of Energy's Fiscal Year 2007 Budget Request for Nuclear Weapons Activities," Tri-Valley CAREs, (undated), p. 1. Online at www.trivalleycares.org/DOEFY07WeaponsBudg.pdf

²⁷ Robert S. Norris, Hans M. Kristensen, Christopher E. Paine, *Nuclear Insecurity: A Critique of the Bush Administration's Nuclear Weapons Policies*, Natural Resources Defense Council, New York, September 2004, p. 10. Online at www.nrdc.org/nuclear/insecurity/critique.pdf.

²⁸ Christopher Hellman, "U.S. Military Spending vs. the World," Center for Arms Control and Non-Proliferation, February 06, 2006 ("Hellman"). Online at www.armscontrolcenter.org/archives/002244.php

Russia

Although Russia has continued to reduce the overall size of its nuclear stockpile, this is part of a doctrinal shift from a “substantially redundant” to a “minimally sufficient” deterrence posture in which Russia retains nuclear weapons for the foreseeable future. In March 2006, President Putin said “Russia view[s] its nuclear deterrent as a fundamental element guaranteeing its security.” He also said that “maintaining the minimum level of nuclear armaments required for nuclear deterrence remains one of the top priorities of Russian Federation policy.”²⁹

Russia still has approximately 5,670 operational nuclear warheads in its active arsenal, with an additional 9,300 warheads believed to be in reserve or awaiting dismantlement. At the same time, Russia is developing new land- and sea-based forces, and is likely to deploy a new multiple-warhead Bulava submarine-launched ballistic missile (SLBM) as well as a land-based ICBM. Revenues from oil sales have provided Russia with the capital needed to increase the modernization and size of its strategic nuclear forces. Obsolescence of existing weapon systems (primarily in the older SS-18 and SS-19 ICBMs) will, during the next 15 years, probably result in a 48 percent decrease in Russia’s overall operational warhead level. However, if START is not extended or replaced with a new treaty in 2009, Russia is likely to MIRV both its Topol-M forces and its submarine-launched ballistic missile forces, reducing the projected overall decrease to something more like 25 percent. (Russia has already withdrawn from the provisions of START II so that it could retain MIRVed ICBMs.)

Despite insistence from both Russia and the United States that the Cold War is over, concerns regarding the growing asymmetry between US and Russian strategic nuclear forces (due to a relentless US modernization program), the eastward expansion of NATO (whose conventional forces now outnumber Russian conventional forces by 3 to 1), and the planned deployment of US radars and missile interceptors in Poland and the Czech Republic are prompting Russia to rely more heavily upon its nuclear forces in its strategic planning. In May 2006, President Putin told Russia's Federal Assembly that nuclear deterrence and the balance of strategic forces are still central to Russian nuclear policy.³⁰ In November 2006, he clarified that this means having the capability to destroy “any potential aggressor, no matter what matter what modern weapons system this aggressor possesses,” and not necessarily numeric parity.³¹ Russia is developing a manoeuvrable SS-27s in order to penetrate US missile defense systems. While it is true that Russia is moving ahead in its own nuclear development, there have been a number of offers from President Putin to the United States to cut the respective arsenals of the US and Russia from the 26,000 warheads currently in stock to 1500 or even 1,000. The US has failed to respond to this offer.

China

While official figures remain elusive, China’s small nuclear force comprises fewer than 50 DF-21 medium-range ballistic missiles (MRBMs), fewer than 25 DF-4 intercontinental range ballistic missiles

²⁹ Speaking at a conference on maintaining the stable operations of the nuclear weapons industry in Novo-Ogarevo.

³⁰ Vladimir Putin, “Annual Address to the Federal Assembly of the Russian Federation,” Moscow, May 10, 2006, www.kremlin.ru/eng/, as documented in Robert S. Norris and Hans M. Kristenson, “Russian Nuclear Forces, 2007,” *National Resources Defense Council's Nuclear Notebook in The Bulletin of Atomic Scientists*, March/April 2007, vol.63(2), pgs 61-64, 67.

³¹ Vladimir Putin, “Closing Address at the Meeting of the Armed Forces’ Command Staff,” Moscow, November 16, 2006, www.kremlin.ru/eng/, as documented in Robert S. Norris and Hans M. Kristenson, “Russian Nuclear Forces, 2007,” *National Resources Defense Council's Nuclear Notebook in The Bulletin of Atomic Scientists*, March/April 2007, vol.63(2), pgs 61-64, 67.

(ICBMs), and about 20 DF-5 ICBMs. These forces are kept off alert, which at least is a step in the right direction that other nuclear weapon states would do well to emulate.

China has not announced nuclear modernization plans beyond the development of a new family of solid-fueled, mobile ballistic missiles that will presumably replace existing submarine-launched ballistic missiles and liquid-fueled ICBMs.³² The US intelligence community predicts the deployment of the JL-2 and DF-31 will increase the number of Chinese nuclear weapons capable of reaching the United States from 20 to 75-100 over the next decade.³³

The United States intelligence community believes that China completed development of the nuclear warhead for the JL-2 and DF-31 before signing the Comprehensive Test Ban Treaty. The United States intelligence community also believes that China continues to conduct test-site activities to monitor the condition of its stockpile.³⁴

The United States intelligence community believes that China is not currently producing fissile material, but has sufficient stockpile to meet projected modernization plans.

France

France continues to design and build new nuclear weapon systems, for use through 2040.³⁵ France's nuclear strike force, between 1945 and 1988, cost 1,500 billion francs (at 1997 values). For the years 2007-2012, research and development of new nuclear weapons will cost an estimated 18 billion euros. Even the most left of the French front-runners for President, Segolene Royal, has said that, if elected, she intends to keep the nuclear strike force, which she said was "*indispensable to [France's] independence*", and will "*modernise its means*".³⁶ This means that research (notably with the MegaJoule Laser) and the development of new nuclear weapons systems (a 4th SNLE-NG submarine, M51 missiles, LMJ) will be continued. For its submarine fleet, France is developing the M-51 missile, which will eventually be equipped with a new warhead, the Tête nucléaire océanique.³⁷ Modernization

³² China's December 2006 White Paper "China's National Defense in 2006" says that China "aims at progressively improving its force structure of having both nuclear and conventional missiles, and raising its capabilities in strategic deterrence and conventional strike".

³³ National Intelligence Council, Foreign Missile Developments and the Ballistic Missile Threat Through 2015, December 2001.

³⁴ Central Intelligence Agency, "Possible Future Activities at China's Nuclear Test Site," Proliferation Digest, November 1996, [page number redacted].

³⁵ 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 powered ballistic missile submarines, with three operational. The submarines carry loads of 16 missiles, each equipped with six warheads. Robert S. Norris, and Hans M. Kristensen, French Nuclear Forces 2005 from NRDC: Nuclear Notebook, in Bulletin of the Atomic Scientist, July/August 2005, volume 61(4), pp 73-75. 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. 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.

³⁶ See her Saturday, 3 March speech in Paris, in which she explained her stance on defense policy.

³⁷ Kristensen, H.M. and Kile, S., 'World nuclear forces', *SIPRI Yearbook 2003: Armaments, Disarmament and International Security*, (Oxford University Press: Oxford, 2003). See also Robert S. Norris, and Hans M. Kristensen, French Nuclear Forces 2005 from NRDC: Nuclear Notebook, in Bulletin of the Atomic Scientist, July/August 2005, volume 61(4), pp 73-75.

also continues for the air-to-surface stocks, with the current cruise missile set to be replaced with a longer ranged variant (ASMP-A), also equipped with a new warhead, the Tête nucléaire aéroportée.³⁸ France is also replacing its aircraft with a new multi-purpose fighter-bomber, the Rafale. The nuclear Rafale squadron will be operational in 2008. 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.

What makes this push to develop new French nuclear weapons and delivery systems even more disturbing is an apparent change in nuclear policy. Speaking in Brittany on 19 January, 2006, President Chirac said France was willing to use nuclear weapons as "a firm and appropriate response from us" to an attack on France's "vital interests." Chirac was speaking not about nuclear deterrence of a nuclear threat, but was explicitly asserting that France has reconfigured its nuclear forces in preparation for a tactical nuclear strike against any country that it concludes has sponsored an act of terrorism against France. This statement, needless to say, shocked the NGO community, civil society, and many of the NPT Member States present in this room.

Horizontal Proliferation

Non-proliferation and Disarmament

The WMD Commission stated in its June 2006 report:

So long as any state has nuclear weapons, others will want them. So long as any such weapons remain, there is a risk that will one day be used, by design or by accident. And any such use would be catastrophic.³⁹

The NGO community emphatically concurs.

Of course, this is not to suggest that working toward disarmament in and of itself will prevent proliferation, or that states seek to acquire nuclear weapons solely because the nuclear weapon states have failed to live up to their treaty obligations. Nor is it offered as a justification, tacit or otherwise, for any non-nuclear-weapon state to acquire nuclear weapons, for any reason. Nevertheless, the same measures and processes that are required to achieve disarmament also strengthen and reinforce the goals of non-proliferation. Foremost among these are entry into force of the Comprehensive Test Ban Treaty and completion of a treaty on the verifiable cessation of the production of fissile materials for nuclear weapons.

At the same time, in order to address the issue of proliferation, we must look to its root causes. In many cases, proliferation is driven by insecurity and the perception that nuclear weapons are crucial to ensuring security. In a confrontation with a major nuclear-armed power, a small state might feel compelled to seek nuclear weapons. The WMD Commission rightly observes that:

³⁸ 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. See also Robert S. Norris, and Hans M. Kristensen,

³⁹ WMD Commission. Weapons of Terror. Stockholm: 2006

Whenever a nuclear-weapon state declares that all options are on the table, that it reserves the option of using nuclear weapons against a nonnuclear-weapon state, or that nuclear weapons are essential or vital for its security, other states take note and act accordingly. (*Weapons of Terror*, p.88)⁴⁰

The Commission adds that “At the heart of all these doctrines is the concept of deterrence.” Despite the end of Cold War hostilities, the nuclear-weapon states have universally affirmed through their actions and policies that nuclear weapons continue to be essential to their security. The retention and brandishing of nuclear weapons by some drives the perception that they are indeed useful, at the very least, as political weapons.

The failure of the nuclear-weapon states to make preparations for security without nuclear weapons, however, is only part of the suite of issues exacerbating proliferation. The hyper-accumulation of arms, combined with security postures based on overwhelming global military dominance, foster insecurity, especially in times of crisis. Nuclear disarmament must serve as the leading edge of a global trend towards demilitarization and the redirection of military expenditures to meet human and environmental needs. The United States government has a special responsibility to take leadership in this massive undertaking.

North Korea’s October 2006 test of a nuclear explosive has been rightly condemned by the international community. Rather than representing a failure of the NPT, however, this case demonstrates that coercion and isolation, coupled with the long-term perpetuation of a near state of war, do not facilitate non-proliferation goals. Non-proliferation requires security, which in the context of North-East Asia should involve all states working toward a nuclear-weapon-free zone treaty among Japan, South Korea, and the DPRK, with assurances against use of nuclear weapons given by the United States, China, and Russia.

Nuclear Power and Nuclear Weapons

While the link between non-proliferation and disarmament is widely acknowledged, recent events have underscored a second inextricable link: that between nuclear power and nuclear weapons. In order to ensure the long term viability and sustainability of global security there is need for a serious discussion about nuclear energy in the context of achieving and sustaining non-proliferation and disarmament objectives.

Recent high-profile cases, including the crises over the nuclear programs in Iran and the DPRK, have brought the risks associated with the spread of nuclear fuel-cycle technology to the forefront of the international agenda. There is a tendency to treat these cases as isolated and unique problems, but it would be irresponsible to ignore how these issues reflect fundamental instabilities in the pillars that uphold the NPT.

Article IV cites an “inalienable right” of states parties to develop nuclear technology as long as they do not violate their obligation not to manufacture or acquire nuclear weapons. While states surely are entitled to develop energy sources as part of the sovereign right of development, that right is subject to restrictions – including on particular energy sources – in the common interest. Accordingly, the qualification of the NPT right to peaceful nuclear energy as “inalienable” should be understood in the context of the NPT bargain, and not as a claim that it is a fundamental aspect of sovereignty. The

⁴⁰ *ibid.*

“right” to nuclear energy, therefore, may be limited or extinguished over time by subsequent developments and agreements. The NPT Article V promise of access to the “benefits” of peaceful nuclear explosions was superseded by the abandonment of the notion of such projects as digging canals with nuclear explosive devices and by the adoption of the Comprehensive Test Ban Treaty. Any right, whatever its basis, must be exercised in conformity with international law, and is subject to limits based upon the environmental and security rights of other States and the global community.

In practice, this Article IV-based “right” has allowed states to build capacity and infrastructure that would enable them to produce nuclear weapons within a brief time period, under the guise of a “peaceful” civilian energy program. With some adjustment, the very same facilities and equipment used to produce low-enriched uranium fuel for power reactors can produce high-enriched uranium suitable for use in a nuclear weapon. The separation and reprocessing of plutonium from spent reactor fuel as mixed-oxide fuel is a potentially greater proliferation challenge, as all separated plutonium is directly usable in nuclear weapons. All existing commercial nuclear power reactors produce plutonium as a by-product.

Recently, the nuclear industry and some governments have been actively promoting nuclear power as part of the solution to avoid the looming ecological catastrophe posed by global warming. This has helped fuel predictions that nuclear power might expand three-fold by mid-century. While we do not accept the industry’s claims that a solution to the problem of global warming requires nuclear energy, we will not attempt here to address the full range of economic, environmental, and public health problems with those claims. We emphasize, though, that the spread of these technologies increases the risk that such facilities might be misused and that nuclear material might be diverted to use in weapons or fall into the hands of terrorists, or that the knowledge gained from operating such facilities might be employed in a clandestine nuclear bomb program. An expansion of the global nuclear energy industry also increases the risk of terrorist attack on reactors and their spent fuel stores. A transfer of the huge investments that are being made in nuclear technologies to clean, safe, climate-friendly energy production and energy efficiency would be a much wiser use of resources and talent.

Perhaps the clearest and most troubling development in this regard, since the 2005 Review, is the US-India nuclear energy deal announced in March 2006. A framework of international rules and institutions derived from the NPT have prevented non-Member States from using commercial imports of nuclear technology and fuel to aid their nuclear weapons ambitions. This deal is one of the most important challenges to face the NPT in more than thirty years, because commercial uranium imports for safeguarded reactors will free up more of India's domestic uranium for its military program, which will remain unsafeguarded and free of the necessity of IAEA inspections. The US-India deal is nothing short of a recipe by which India can increase its nuclear arsenal by hundreds of warheads over the next several years—a goal that has been discussed openly by senior military and government officials. For example, the former head of India's official National Security Advisory Board has argued that "Given India's uranium ore crunch, it is to India's advantage to categorize as many power reactors as possible as civilian ones to be refueled by imported uranium and conserve our native uranium fuel for weapons grade plutonium production."

India already has about 500 kilograms of weapons grade plutonium, sufficient for roughly 100 nuclear warheads. It also has a stock of about 11.5 tons of reactor grade plutonium produced in the spent fuel of its power reactors. Under the terms of the deal, this stock of plutonium, too, would be kept out of safeguards. India would also keep out of safeguards its Prototype Fast Breeder Reactor, which is scheduled to start in 2010. It is to be fueled with reactor-grade plutonium and will produce weapons-grade plutonium. This would result in a roughly four-fold increase in India's current weapons

plutonium production rate. By substituting imports for domestic uranium and expanding existing uranium recycling efforts, India also might be able to produce up to 200 kg a year of weapon grade plutonium in its unsafeguarded power reactors.

Pakistan's response, should this deal be implemented, is predictable, as is China's. Nuclear policy analysts Zia Mian, M. V. Ramana, and Frank von Hippel have warned that "a dramatic acceleration in the nuclear arms race in South Asia may be triggered by this deal. Such a development would be both dangerous and costly, and set back the efforts for peace and development in South Asia."⁴¹ Aside from concerns about a regional arms race, the US-India deal sets a precedent that will almost assuredly prompt Pakistan to seek a comparable agreement.

The US-India nuclear energy deal undermines the basic principle on which the NPT was founded. If India, which developed nuclear weapons while remaining outside the NPT, is granted the same privileges as Treaty members—indeed, virtually the same privileges as the nuclear weapons states, then other countries may well ask what benefit they derive from adhering to their NPT commitments.

The US Congress has rewritten US law —signed in December 2006 by President Bush — to exempt India from the existing framework of rules. To come into force, however, the US-India deal requires assent by the Nuclear Suppliers Group (NSG) of countries. Since the Group works by consensus, each of the 45 NSG members, who are all parties to the NPT, must agree to change its rules and allow nuclear sales to India. In effect, NSG countries that claim to be strong nonproliferation advocates must decide if they will uphold or reject commitments they made at the May 2000 NPT Review Conference aimed at restricting the nuclear weapons of India and Pakistan. The NGO community urges the NSG to reject the terms of this deal and to prohibit its implementation as inconsistent with United Nations Security Council Resolution 1172, adopted on 6 June 1998, and referenced in the 2000 NPT Final Document. The Resolution, which was passed unanimously, calls upon India and Pakistan "immediately to stop their nuclear weapon development programs, to refrain from weaponization or from the deployment of nuclear weapons, to cease development of ballistic missiles capable of delivering nuclear weapons and any further production of fissile material for nuclear weapons." The Resolution also encourages all States to "prevent the export of equipment, materials or technology that could in any way assist programs in India or Pakistan for nuclear weapons." Indeed, the best course for the NSG would be to wait until NPT states parties have taken a decision on the matter, which may not occur until the 2010 Review Conference.

Rather than foster a potentially large expansion of the South Asian nuclear arms race, the NSG and all NPT signatories should reaffirm their commitment to the 2000 Review Conference statement and support the United Nations Security Council Resolution. They should try to strengthen the long-standing international effort to end all production of highly enriched uranium and plutonium to make nuclear weapons.

The dispute over Iran's nuclear program continues to escalate. On March 24, 2007, the Security Council unanimously adopted resolution 1747 following up on Iran's failure to implement the Council's demands in resolution 1737 to suspend its uranium enrichment and heavy water programs. At the behest of its Western permanent members, the Security Council has embarked on an escalatory approach that has dramatically heightened the possibility of an eventual armed confrontation. Despite the false sense of urgency that has been ascribed to the necessity of Iran suspending its nuclear fuel-cycle activities, US intelligence officials stated recently in testimony before Congress that Iran would not likely be able

⁴¹ Z. Mian, M.V. Ramana, F. von Hippel. Feeding potential for South Asia's nuclear fire. Asahi Shimbun. March 29, 2007.

to acquire a nuclear weapon until the middle of the next decade at the earliest. Meanwhile, partly in reaction to the Iranian nuclear program, about a dozen states in the Middle East recently expressed interest in starting nuclear power programs, and the IAEA has agreed to assist the Gulf Cooperation Council in preparing a plan for nuclear power. While this development is in a very early stage and does not necessarily involve technologies to produce nuclear fuel, it is yet another sign of the link between nuclear power programs and the weapons option.

At the center of the dispute with Iran is a mutual crisis of confidence that will not be solved by the imposition of sanctions and coercion. The parties to the dispute should heed the calls of Mohamed ElBaradei, who has highlighted the need for mutual and sequential confidence-building measures that would allow for a return to negotiations. There is an urgent need for a new diplomatic initiative, which must include the commitment to resolving all political issues between the United States and Iran, and should establish a framework leading to the normalization of relations.

The Iran situation has underscored the inherent risks associated with the unchecked spread of the nuclear fuel-cycle. Only the global phase-out of nuclear power will put this inherent and intractable proliferation risk to rest. Since the 2005 Review, however, we have seen the acceleration of plans for a top-down, centrally controlled Global Nuclear Energy Partnership that is nothing more than a nightmare scenario of plutonium in constant transit, subject to terrorist theft and negligent accidents on land and on sea. Regardless of where nuclear fuel production facilities are located they bring with them the fear and possibility of weapons proliferation and ultimately represent a formidable roadblock on the path to elimination of nuclear weapons. The continued existence of nationally based nuclear fuel-cycle facilities and the system of nuclear apartheid embodied in the GNEP would be formidable barriers to the verifiability of a nuclear-weapons-free world. But, any scheme that seeks to mitigate the risk posed by nuclear fuel-cycle technology, such as the proposals for multilateral controls suggested by Mohamed ElBaradei, could exacerbate these problems by spreading knowledge and equipment that could be used in clandestine programs or in a breakout scenario.

We must guard against the prevalent scientific machismo where scientific and technological elites in are pushing the agenda for this lethal technology. Interestingly, in US President Eisenhower's noted farewell address in which he warned about the dangers of the military-industry complex, he also cautioned against the abuse of science, warning that: "In holding scientific research and discovery in respect, as we should, we must also be alert to the equal and opposite danger that public policy could itself become the captive of a scientific-technological elite."⁴²

To close out this topic of discussion, since we are in Vienna in part to recognize the 50th anniversary of the International Atomic Energy Agency, we wish to draw attention to our long-standing concern over the IAEA's dual mission to prevent proliferation, yet to facilitate nuclear energy development. We commend the Agency for its non-proliferation initiatives and for its commitment to reducing the numbers of nuclear weapons in the world. Nevertheless, this schizophrenic mission undermines those efforts and leaves the Agency susceptible to undue influence by the nuclear industry. Having recently commemorated the 20th anniversary of the Chernobyl tragedy, we are particularly disturbed that, to this day, the numbers of deaths, cancers, and other illnesses attributable to the world's worst nuclear reactor disaster have been understated in official publications.

Confronting the risk posed by the proliferation of sensitive nuclear technology must be placed on a par with the reduction and elimination of nuclear weapons. **As a permanent solution, we support the**

⁴² Eisenhower, Dwight D. Farewell Address. January 17, 1961. www.independent.org/issues/article.asp?id=1133

establishment of an International Sustainable Energy Agency, and a transfer of the current subsidies for nuclear energy and fossil fuel development—about \$250 billion per year—to a crash program to build a universal and non-discriminatory global energy system based on clean, efficient, and renewable energy sources. NPT PrepComs and Reviews would be useful platforms for the exploration of such alternatives.

The WMD Commission pointedly rejected “the suggestion that nuclear weapons in the hands of some pose no threat, while in the hands of others they place the world in mortal jeopardy.”⁴³ As NGOs, we would extend this argument to the possession of the means to readily manufacture nuclear weapons, regardless of where those means are located.

Negotiating Difficulties

The devastating disappointment of the 2005 Review Conference must not be repeated, and the world is relying on this community to ensure this review cycle does not fail. Although the international political climate is an incredible influence on results here, the negotiating process, and the actors involved in it, also play an enormous role. It is unacceptable to simply blame difficulties in this room on differences in policies and political will. Differences in policies and political have always existed; it is your job to negotiate an acceptable compromise among them. If you actually believe that the NPT is “the cornerstone of nuclear disarmament and non-proliferation,” and that it adds to your state's security, you will make the effort to ensure its success.

In 2005, the Review Conference wasted the first 17 days of the 26-day Conference in procedural wrangling instead of substantive debate. Anyone who follows UN work closely knows all too well that procedural wrangling is always substantive, but it masks the real issues by allowing governments to hide their differences behind procedural concerns. In 2005, the United States, Iran and Egypt were the three main obstructionists. They either allowed or encouraged the Review Conference to fail because they had lost their faith in its ability to ensure their security, and perhaps believed other options were more attractive. States that should have been leaders and bridge-builders were unable to successfully intervene, and the 2005 Conference failed. It produced what amounted to a list of attendees and dates, with no substantive recommendations for strengthening the disarmament and non-proliferation regime.⁴⁴

In contrast, the 2000 Review Conference managed to succeed despite taking place in an international environment that was just as fraught with difficulties as the one in 2005. India and Pakistan had recently conducted their nuclear tests, the United States Senate had just rejected ratifying the Comprehensive Test Ban Treaty, and the United States and Iraq were at odds over Iraqi compliance with the NPT. However, there was a greater deal of leadership and commitment to a positive result from major players and key bridge-builders. The New Agenda Coalition played a crucial role in

⁴³ *Weapons of Terror*, p. 60.

⁴⁴ States parties at the 2005 Review Conference wrestled over the agenda for the first 9 days of the 26 day Conference. At first the hold up was due to the United States refusing to accept an agenda that used the consensus outcome of the 2000 Review Conference as the text for evaluating progress on the NPT at the 2005 Review Conference. Later, Egypt refused to accept a last-minute compromise by the US which would have listed all previous agreements but without a focus on 1995 and 2000. States parties then fought over the Work Programme for another eight days, mainly because the United States again stubbornly opposed the majority, this time over negative security assurances. The Non-Aligned Movement eventually compromised here, despite the pressure exerted on the US by its Western allies. Then, within the Main Committees, the US, Iran and Egypt alternately blocked the submission of substantive reports. See <http://www.reachingcriticalwill.org/legal/npt/NIR2005/final.html> and <http://www.acronym.org.uk/npt/05rep12.htm>

securing agreement to the disarmament commitments made in the 13 steps, working through disagreements with the five nuclear weapon states. When the confrontation between the US and Iraq threatened the entire Conference, they were sent back to find compromise language, and, with help from Russia, negotiated that compromise 17 hours after the scheduled end of the Conference.

Developments in the Conference on Disarmament are indicating that while the struggles from 2005 are still alive and well in 2007, there are also important changes. The six CD Presidents of 2007—South Africa, Spain, Sri Lanka, Sweden, Switzerland and Syria—worked intensively for months, with each other and the rest of the Conference, to develop a timetable for discussions and a proposal for work that would be agreeable to the entire CD. Indeed, the leadership, transparency and flexibility shown by the first CD President in particular, Ambassador Mshtali of South Africa, was fundamental in securing the most ambitious CD work schedule in years. When so much of the disarmament and non-proliferation machinery is blocked, we need to pay attention to such examples of successful diplomacy.

In other welcome signals of change, the United States has finally agreed to discussions in that body on preventing an arms race in outer space, negative security assurances, and nuclear disarmament, which it had previously opposed.⁴⁵ However, because this compromise has weaker mandates for NSAs and PAROS than a previous proposal, it has not yet been accepted by the Arab Group or China. Egypt and Iran are again showing resistance to facilitating compromise. The ultimate decision on the proposal was postponed until after this Preparatory Committee, perhaps in the hope that difficulties here will help destroy the best chance the CD has had to get out of its decade-long deadlock.

As we begin the review cycle leading to the 2010 Review Conference, we need to keep the contrast between the 2000 and the 2005 Review Conferences in mind. Remember that you diplomats are not simply the mouth pieces of your governments. You are the experts and the main actors in these negotiations. You make a difference in this room *and* in your capitals, which depend on you to tell them what is happening here and how to advance your state's interests. We have seen the difference even a small number of active, engaged and visionary diplomats make in this process. We have also seen the difference a small number of active, engaged, and destructive diplomats make in this process. In this review cycle, the world needs leaders. It needs diplomats and governments that are willing to compromise and work for our collective security.

Health and the Environment

Climate Effects

Since the end of the Cold War between the US and the former Soviet Union, we have taken for granted that the threat of nuclear winter—the total collapse of the global climate as a result of thousands of nuclear explosions—was behind us. While we know that a regional nuclear war involving a smaller number of lower yield weapons would be a catastrophe without precedent in human history, we have assumed that most of the casualties and environmental damage, while intolerable, would be local or regional. That assumption has now been shattered with the publication of new research into the effects of low-yield regional nuclear wars by some of the same scientists who participated in the original

⁴⁵ This compromise package is weaker on nuclear disarmament and negative security assurances than the previous Five Ambassadors' proposal, and was made to in order to facilitate negotiations on a ban on the production of fissile materials for nuclear weapons. <http://www.reachingcriticalwill.org/political/cd/speeches07/1session/Mar23US.html>

nuclear winter studies.⁴⁶⁴⁷

These scientists have concluded that a nuclear exchange involving 100 15-kt weapons—less than 1% of the world’s arsenals and the equivalent of the combined nuclear forces probably owned by India and Pakistan—could produce about 21 million fatalities, most of them from blast, heat, and radiation within the first few minutes of detonation. Since cities, including megacities, would be the targets, the casualty rates would actually dwarf those expected from the kinds of counterforce strikes that were anticipated during the US-Soviet confrontation. The damage to these cities, including long term contamination by radionuclides, would lead to their abandonment, with economic and social consequences that would ripple across the world.

Even worse, the researchers determined that fires ignited by the explosions of 100 relatively small nuclear weapons within large modern cities could generate 1 to 5 million tons of carbonaceous smoke particles that would cause climatic disruptions even larger than those caused by major volcanic eruptions such as Mt. Pinatubo in 1991. Smoke emissions, they have found, would persist in the middle and upper atmosphere for a decade, producing climate anomalies that, while smaller than “nuclear winter” scenarios, would last longer and would affect surface land temperatures, precipitation rates, and growing season lengths, with extreme consequences for global agricultural productivity.

“The consequences of regional-scale nuclear conflicts,” they concluded, “are unexpectedly large, with the potential to become global catastrophes.”⁴⁸

Uranium Mining

The detonation of nuclear weapons is not required for widespread harm to public health and to the environment. Had the nuclear weapon states honored their commitment to an “unequivocal undertaking” to eliminate their nuclear arsenals made at the 2000 NPT Review, we would have expected to see a concomitant winding down of the scientific and industrial infrastructure supporting nuclear weapons development. Instead, we have seen exactly the opposite, with a number of disturbing developments taking place even in the two years since the 2005 Review.

Among these developments is a ramping up of uranium mining and manufacturing operations around the world, both for an expanded nuclear energy industry and for nuclear weapons fuel. In Australia, for example, which has around 40% of the world’s known uranium reserves and around 20% of the world’s export markets in uranium, we see increased government support for uranium mining, for the siting of nuclear waste dumps, for licensing of new nuclear research reactors, and for proposals to enrich uranium. The adverse environmental impacts of uranium mining in Australia have been significant. The Olympic Dam uranium/copper mine, for example, has produced a radioactive tailings dump of 70 million tons, with another 10 million tons added each year, and with no plans for its long-term management. Plutonium-contaminated debris at Maralinga, the site of British nuclear weapons tests in the early 1960s, has prevented indigenous Australians from returning to their land, which is no longer

⁴⁶ O. B. Toon, R. P. Turco, A. Robock, C. Bardeen, L. Oman, and G. L. Stenchikov. Consequences of regional scale nuclear conflicts and acts of individual nuclear terrorism. *Atmos. Chem. Phys. Discuss.*, 6, 11745–11816, 22 November 2006. www.atmos-chem-phys-discuss.net/6/11745/2006/

⁴⁷ A. Robock, L. Oman, G. L. Stenchikov, O. B. Toon, C. Bardeen, R. P. Turco. Climatic consequences of regional nuclear conflicts. *Atmos. Chem. Phys. Discuss.*, 6, 11817–11843, 22 November 2006 www.atmos-chem-phys-discuss.net/6/11817/2006/

⁴⁸ Consequences of Regional-Scale Nuclear Conflicts. Owen B. Toon, Alan Robock, Richard P. Turco, Charles Bardeen, Luke Oman, Georgiy L. Stenchikov. *Science*. March 2, 2007; Vol 315; 1224-25.

suitable for occupation and will have to remain off limits for thousands of years. Despite this legacy, Australia has, to date, produced about 80 tons of plutonium – enough for about 8,000 nuclear weapons.

Uranium mining and milling projects are also expanding throughout Africa, with equally troubling implications for health, the environment, and non-proliferation. Uranium prospecting and exploration are currently taking place in Algeria, Botswana, Cameroon, Central African Republic, Chad, Democratic Republic of Congo, Gabon, Guinea, Libya, Madagascar, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, Senegal, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe.

Uranium mining in Malawi, for example, threatens vital ecosystems and has been opposed by a number of NGOs concerned with the health of workers and nearby communities who will be exposed to radioactive mine wastes and contaminated water. Similar concerns about radiation exposure to workers and residents have been raised in Namibia, where the uranium industry has been accused of seriously underestimating radiation doses at one site, and offering a flawed plan for tailings management.

While India, as noted above, is not a party to the NPT, it is nevertheless contributing to the health and environmental burden of an expanding nuclear weapons infrastructure. The Jadugoda uranium mine, about 150 miles east of Calcutta, is the only domestic source of uranium for India's nuclear reactors and nuclear warheads. Health impacts of exposure to radiation from the mining operations upon the indigenous population (the Adivasi), including cancers and reproductive health problems, have been widely observed but poorly documented. Jadugoda is at the foundation of an expanding nuclear energy program, the goals of which are to generate 20,000 MWe by the year 2020 and, according to some military leaders, to produce as many as 400 nuclear warheads by the end of this decade. India's nuclear programs are cloaked in secrecy, with no public input about siting or operation of facilities, and with little or no public education about the impacts of nuclear energy and weapons production on health and the environment.

The 30,000 Adivasi villagers around Jadugoda feel these impacts at both the front end and the tail end of the fuel production process. Yellowcake (U₃O₈) from the mines is sent to the Nuclear Fuel Complex (NFC) in Hyderabad; the wastes are subsequently returned to Jadugoda where they have been dumped in former rice fields. Workers in the mines have no protective clothing or equipment, and are often dismissed when they show signs of illness; workers and non-workers alike are exposed to toxic and radioactive dust from mine refuse and tailings—hundreds of thousands of tons of rock that are crushed and transported every year. In addition to uranium, the tailings contain isotopes of thorium, radium, and radon, as well as arsenic, lead, and other toxic metals. The unlined, uncovered, tailings piles—built on and around unavoidable living spaces—are a source of constant exposure to low-level radiation and toxic chemicals. Agricultural workers, children at play, and those who must cross the contaminated sites in traveling from one place to another are constantly at risk. The tailings themselves are often used as construction materials, exacerbating the dangers of exposure.

The current moratorium on nuclear testing, in which India and Pakistan are participating, should be complemented by a moratorium on uranium mining and milling, as an urgently needed public health intervention that will also contribute to progress toward disarmament and non-proliferation.

The destruction caused by nuclear weapons occurs along a continuum, beginning with the cancers and reproductive health problems inflicted on miners, downwinder communities, and other nuclear workers, and ending with the potential deaths of hundreds of millions of people and the permanent

poisoning of their habitats in a nuclear war. The NPT was—and could still be—a beacon of hope that a path away from that fate remains open. The evidence of the past few years, however—particularly the two years following the 2005 Review—is that the beacon, along with our hopes for a nuclear-weapons-free world, has become shrouded in dense fog.

Preventing Proliferation and Ensuring Disarmament

In his final address to the Conference on Disarmament, former Secretary-General Kofi Annan said that "The debate between those who insist on disarmament before further non-proliferation measures, and those who argue the opposite, is self-defeating. It should be self-evident that both are essential for security."⁴⁹ Over the course of many PrepComs and Review Conferences, the NGO community has expressed the identical view that disarmament and non-proliferation are two sides of the same coin.

The NPT stands at a critical juncture as Nuclear Weapon States are taking decisions to indefinitely retain their arsenals, in contravention of their obligations under Article VI, and Non-Nuclear Weapon States continue to stretch the limits of Articles II, III, and IV. These current trends are not conducive to the long term viability of the regime or to the collective security interests of the global community. If urgent action is not taken by the 2010 Review Conference to reverse this course, we may well wake up in 2011 to world with a larger number of virtual and actual nuclear weapon states, and the nuclear sword of Damocles poised over the heads of all peoples until at least mid-century. In the presentations that follow, we will revisit some previously proposed actions that are still as crucial today as on the day they were first proposed, and we will offer some new ideas for your consideration.

⁴⁹ K. Annan. Address to the Conference on Disarmament. Geneva. 21 June 2006.