

# **Challenges and Opportunities for Progress on Nuclear Disarmament and Related Issues**

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Thank you for inviting presentations from civil society on some of the most critical issues that we face as an international community. I plan to speak briefly on:

1. The current danger,
2. The need to treat all nuclear weapons and nuclear armed states equally,
3. The question of nuclear weapons testing,
4. The status and future of the NPT,
5. Fissile material controls,
6. Article IV and the future of nuclear energy, and
7. The emerging problems of space weapons.

## **The current danger**

On 24 January 1946, the UN General Assembly passed its first Resolution. Five months after the American destruction of Hiroshima and Nagasaki, it is no surprise that this Resolution sought to deal with “the problems raised by the discovery of atomic energy.”

Resolution 1.1 called for plans “for the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction.” Sixty years later we still have no plan.

But our failure is much greater. The problems created by the discovery of atomic energy have become much more serious and more complex than they were in 1946. At the time of the resolution, only the United States had atomic weapons. At that time, according to some estimates, the United States only had about 10 atomic bombs. The elimination of atomic weapons required only one country to decide to give up these few weapons. It chose not to do so. We have been paying the price for this missed opportunity for sixty years.

Instead of being eliminated, the nuclear danger expanded from the threat posed by one country with a few nuclear weapons to the vast nuclear arsenals created by United States and Soviet Union in the Cold War. We survived, barely. But the end of the Cold War proved to be another missed opportunity.

Both the United States and Russia clung on to their nuclear weapons. Today, fifteen years after the Cold War, the United States and Russia still have about ten thousand nuclear weapons each. The only agreement they have is to reduce the number of operationally deployed strategic nuclear weapons to about 2000 each by the year 2012. But each country is expected to still have a total of about six thousand warheads by that date.

In November 1962, Robert McNamara proposed to President Kennedy that an adequate criterion for US nuclear forces was to be able to kill 25 percent of the Soviet population (about 55 million people) and destroy more than two-thirds of its industrial capacity. Five years ago, the Natural Resources Defense Council calculated that a few tens of modern high-yield nuclear weapons would be enough to meet this criterion for most countries.<sup>1</sup>

These numbers make clear that the two thousand strategic weapons that the United States and Russia will each keep operationally deployed by 2012 would be a threat to the whole world. These numbers also make clear that even the few hundred nuclear weapons held by the UK, France and China are a threat to potentially hundreds of millions of people.

There is no relief to be found in the nuclear arsenals of Israel, India, Pakistan, and North Korea. Even with a few weapons, they are able to threaten the lives and well-being of millions of people.

In a world dominated for the foreseeable future by a handful of nuclear-armed states, there is little doubt that more nations will also seek these weapons. Mohamed el-Baradei of the International Atomic Energy Agency has warned that there are another 20 or 30 “virtual nuclear weapons states” that have the capacity to develop nuclear weapons in a very short time span.”<sup>2</sup> In these states, it may take a nuclear threat, a change in leadership, a new found desire for national power and prestige, a resourceful scientist, or unexpected access to technology to tip the balance. It may only be a matter of time.

The US invasion and occupation of Afghanistan and Iraq, and its threats against others, and Israel’s war against Lebanon, only hasten the day when such stark choices may be made.

### **All nuclear weapons are created equal**

All states who have or seek nuclear weapons share a common contempt for democracy and people. Every state that has developed nuclear weapons has done so in secret from its people. Each state has presumed that it can prepare and threaten genocide in the name of its own people. But no nuclear armed state has ever clearly explained to its people why it has taken up weapons the use of which would be a violation of the Charter of the United Nations and a crime against humanity.

Every single nuclear armed state claims its weapons are for deterrence. In a 2004 lecture, Paul Robinson, President of Sandia National Laboratory, responsible for the engineering of US nuclear weapons, explained ‘deterrence’. He said “deterrence... comes from the

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<sup>1</sup> NRDC, *The U.S. Nuclear War Plan: A Time for Change*, 2001, [www.nrdc.org/nuclear/warplan](http://www.nrdc.org/nuclear/warplan).

<sup>2</sup> “More countries could develop nuclear bombs: IAEA,” *Reuters*, 16 October 2006,

Latin root word “terre,” meaning “to frighten with an overwhelming fear,” as in the English antecedent “terror.” In other words, to deter means to terrorize.<sup>3</sup>

The willingness to use terror is what unites all nuclear weapons states, regardless of whether they are within the NPT or outside. It is what they have in common with each other and with states that still seek nuclear weapons. It is also what all these states have in common with the terrorist groups that many fear may be seeking nuclear weapons. Superpowers and rogue states and terrorists, it is all the same when it comes to nuclear weapons. The only difference is in the reason each offers for their willingness to use terror.

The willingness to accept the use of nuclear terror is also shared by those states that do not have nuclear arms of their own and claim to support nuclear disarmament but seek shelter under the nuclear umbrella of others. There are many countries that are part of the NATO military alliance and agree to its promise of nuclear protection. There are others that have signed bilateral military agreements with nuclear armed states. The United States recently promised to defend Japan using the “full range” of its military power. This can only mean the use of US nuclear weapons to defend Japan.

We need to make clear to people and leaders everywhere that all nuclear weapons are created equal. They are all weapons of terror and should be seen, without exception or qualification, as immoral, illegal and illegitimate in all contexts and for all purposes.

### **Nuclear Testing**

How can we start to treat all nuclear weapons states and all nuclear weapons equally?

Consider the Comprehensive Nuclear Test Ban Treaty. Three countries have tested in the ten years since it was negotiated: India, Pakistan, and most recently North Korea.

When India and Pakistan tested, in May 1998, the UN Security Council passed a unanimous resolution (S/RES/1172, 6 June 1998) that condemned the tests and said that “the tests conducted by India and Pakistan constitute a serious threat to global efforts towards nuclear non-proliferation and disarmament.” This resolution called upon India and Pakistan “immediately to stop their nuclear weapon development programmes, 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.”

But nothing happened. India and Pakistan have continued their nuclear weapons programs, and to produce fissile materials. They continue to develop and test new missiles. We now see that the United States seeks to lift the international restrictions on nuclear trade with India. As part of this deal, the United States has not required that India stop producing fissile material for nuclear weapons. Russia, France and the UK support this US effort. It is as if the 1998 Security Council Resolution had never happened.

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<sup>3</sup> Paul Robinson, “Remarks presented to the National Academies Committee on International Security and Arms Control (CISAC) Symposium, August 11, 2004.

Now, having withdrawn from the NPT, North Korea has carried out a nuclear test. The recent Security Council Resolution condemns the test and demands that North Korea “not conduct any further nuclear test or launch of a ballistic missile.” The Security Council said that the DPRK “shall abandon all nuclear weapons and existing nuclear programmes in a complete, verifiable and irreversible manner” and also give up its ballistic missile program. It also imposed some sanctions.

This resolution could set an important precedent. It offers a model for how to treat a state that conducts a nuclear test. But the question we should now ask is what could the international community do if a more powerful state chooses to test a nuclear weapon?

As an example, consider the case of the United States. It has refused to ratify the CTBT. China has refused also, unlike Russia, the United Kingdom and France. The United States has asserted the importance of being prepared to conduct nuclear tests to assure the performance, reliability, and safety of its nuclear weapons. There is no doubt that there are similar arguments being made by nuclear weapons laboratories in other nuclear armed states.

Since 1997 the US has carried out over 20 sub-critical nuclear tests at its Nevada Test site. It has in place a nuclear weapons Stockpile Stewardship Program that has produced the first ever 3-D computer simulation of the explosion of both a fission weapon (in 2000) and a thermonuclear weapon (in 2001). At the same time, the Bush administration has sought to increase the readiness for resuming full-scale nuclear testing. It requires the National Nuclear Security Administration to be prepared to carry out a test within 18 months of a decision to do so -- half as long as was the case under President Clinton. For now, the US Congress has set the nuclear testing readiness requirement as 24 months.

Testing is a message from a country to the world that it is willing to use nuclear weapons. Since everyone now knows what a nuclear weapon can do, then surely preparing and testing such a weapon should also be considered a violation of the charter and a crime against humanity.

The First Committee should seek to reinforce the global norm against testing and to restore confidence that the nuclear-weapon states will not introduce new, more deadly, and destabilizing weapons into their arsenals. The international community must press all of them, as well as other CTBT hold-outs to sign and ratify the treaty without delay.

### **The status and future of the NPT**

The issue of nuclear testing is only one of the many crises facing disarmament, arms control and non-proliferation. No challenge is perhaps more severe than the abdication by the NPT nuclear weapon states of their Article VI commitments. The 2005 NPT Review Conference revealed this for all to see, when the nuclear weapon states refused even to repeat the promises they made in 2000 to abide by the 13 Steps towards disarmament. This sends the message that we should all be prepared to live in the nuclear age much longer than any of us had feared.

There is no doubt that some nuclear weapons states are preparing for a very long nuclear age indeed. Late next year, the United States' Los Alamos National Laboratory, the place where the first nuclear weapon was designed and built, will begin production of new plutonium cores for nuclear warheads. By 2014, the rate of production is supposed to be at least 50 cores a year. Following that production is supposed to speed up further as new facilities begin to come on-line. Eventually, Los Alamos could be able to make about 200 plutonium cores a year. This one place would be able to make about as many cores each year as are in the arsenals of Britain, France or China.

The estimated lifespan of a plutonium core or pit is up to 60 years, and may in fact be much longer. Most of the current US weapons were built in the 1980s. Their plutonium will be good at least for several more decades if not longer. The new cores that will be built at Los Alamos could last until the end of the 21st century.

There are plans for new nuclear weapons specially designed to last longer. The US Reliable Replacement Warhead program seeks to design and build new families of weapons that are easier to manufacture and maintain, and more durable. To make this possible will involve a new generation of nuclear weapons designers and new production facilities. Many believe that the real reason for the program is to preserve and modernize the nuclear weapons complex.

It is not just the United States. Russia, France and China are also modernizing their nuclear arsenals. The United Kingdom is considering the future of its nuclear weapons. Instead of setting an international example by ending its reliance on nuclear weapons, the UK is seeking to develop new facilities for nuclear weapons research and development. It is also considering replacing or upgrading the submarines that carry Britain's nuclear weapons on US-supplied Trident missiles. A decision to modernize would send a signal to the rest of the world that the United Kingdom also believes nuclear weapons are indispensable for the foreseeable future.

It is hard to see how any of these developments can be consistent with the obligation under NPT Article VI to eliminate nuclear weapons. They will in fact make it much harder to reach the goal of nuclear disarmament. In all of these countries, the new generation of nuclear weapons scientists, the managers of costly new research and development facilities, and the military in charge of new weapon systems will all press for maintaining a central role for nuclear weapons for the indefinite future.

A small step forward may be for the First Committee and the General Assembly to remind all states of the very first resolution and call for a mechanism requiring all nuclear armed-states to prepare and explain publicly national plans for meeting their commitment to nuclear disarmament. This should include a requirement that a public disarmament impact assessment be submitted by all states to the International Atomic Energy Agency and the United Nations to accompany any planned investments in nuclear facilities and capabilities that are relevant to the development or maintenance of nuclear weapons or the production of fissile materials.

## **Controlling and reducing fissile materials**

There is near universal agreement on the need to make urgent progress in reducing the arsenals of the nine nuclear-armed states, limiting the potential nuclear weapons capabilities of the 20-30 “virtual nuclear weapons states,” and restricting terrorists from gaining access to a nuclear capability. All of the goals can be met by securing and sharply reducing all stocks of highly enriched uranium and separated plutonium, the key materials in nuclear weapons, and limiting any further production.

The current global stockpiles of fissile materials are huge: 1400-2000 metric tons of highly enriched uranium (HEU) and about 500 tons of plutonium –enough for more than 100,000 nuclear weapons. Virtually all of the HEU and about half of the plutonium is a legacy of the Cold War nuclear arms race.

A second problem is the large stock of weapons-usable highly enriched uranium set aside by the U.S., Russia and U.K. for their naval nuclear reactors. The U.S. alone has declared a naval reserve of weapon-grade uranium large enough to make more than 6,000 nuclear warheads.

The growing global stockpile of civilian plutonium separated from power reactor spent fuel is also a serious issue. About half the separated plutonium in the world is civilian. It has been separated from spent nuclear power-reactor fuel – mostly in the U.K., France and Russia. It is weapons-useable.

The International Panel on Fissile Materials, a new collaboration of independent nuclear experts from fifteen countries, including both nuclear-armed and non-nuclear countries, has released its *Global Fissile Material Report 2006* containing data on fissile material production and stocks around the world and related issues, and proposed four goals toward which significant progress can be made in the near future:<sup>4</sup>

- An effectively verifiable Fissile Material Cutoff Treaty that would end production of fissile materials for weapons, and place under international safeguards all civil stocks of fissile material, and stocks that are excess to military requirements pending the elimination of nuclear weapons.
- Declarations by all nuclear weapon states of their total fissile-material stockpiles that would provide a basis for further balanced reductions in their nuclear arsenals.
- Measures to limit the proliferation of national uranium centrifuge enrichment and reprocessing plants; and
- Total or near-total elimination of the use of highly enriched uranium as a reactor fuel. This would greatly reduce the danger of HEU falling into the hands of potential nuclear terrorists.

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<sup>4</sup> *Global Fissile Material Report 2006*, International Panel on Fissile Materials, [www.fissilematerials.org](http://www.fissilematerials.org).

#### **Article IV and the future of nuclear energy**

It is time to consider the problems created by Article IV of the NPT. The right to the peaceful uses of nuclear energy that it gives must now be measured alongside the great dangers it poses.

The Director-General of the IAEA has warned that “Should a state with a fully developed fuel-cycle capability decide, for whatever reason, to break away from its non-proliferation commitments, most experts believe it could produce a nuclear weapon within a matter of months.”<sup>5</sup>

This is an old problem. In 1946, Robert Oppenheimer, the head of the US project to build the first atomic bomb, warned that if there were to be a ban on atomic weapons, “we would start out and build enormous plants, and we would call them power plants — maybe they would produce power; and these plants we would design in such a way that they could be converted with the maximum ease and the minimum time delay to the production of atomic weapons.”<sup>6</sup>

Oppenheimer was pointing out the fundamental link between nuclear energy and the capacity to make nuclear weapons. This is now recognized in the international system of safeguards managed by the IAEA. This is why so many countries rightly worry about Iran’s search for a uranium enrichment capability. The fact is that even a small enrichment plant, such as the one that Iran proposes to build at Natanz, which is sized to fuel only a single 1000-MWe nuclear power reactor, could make enough highly enriched uranium for tens of bombs a year.

The larger point is that the uranium feed and enrichment required to sustain even a small civil nuclear power program based on light water reactors would offer a platform for a significant weapons program.

The same is true with separating plutonium. All nuclear reactors make plutonium. A 1000 MWe light water reactor operating at a 90-percent capacity factor produces about 250 kilograms of plutonium per year. It takes less than 10 kg to make a weapon. And, almost any kind of plutonium can be used to make a nuclear weapon. This is why we should all worry about the pressure for the growth of nuclear energy.

It is time to consider nuclear energy and article IV in the same way that we consider the hopes that were held for the peaceful uses of nuclear explosions. The right to benefit from such peaceful explosions was written into the NPT as Article V. But time has taught us that nuclear explosions are no use except to develop nuclear weapons. Article V has been forgotten. No one claims their entitlement to the rights that it provides because there is nothing to claim.

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<sup>5</sup> Mohamed El-Baradei, “Towards a Safer World,” *The Economist*, 18 October 2003.

<sup>6</sup> J. Robert Oppenheimer, “The International Control of Atomic Energy”, *Bulletin of the Atomic Scientists*, 1 June, 1946.

Nuclear energy may have held great promise in 1968 when the NPT was written. But it has failed. Out of the 190 countries in the world only about 30 countries have nuclear power plants.<sup>7</sup> Almost half of all the power reactors in the world are in just three countries, the United States, France and Japan. Six countries produce three-quarters of all the nuclear electricity in the world.

The many problems with nuclear energy have become clear. These include the risk of catastrophic accidents and the absence of a reliable method for safe and secure long term nuclear waste disposal that will be an environmental hazard for many thousands of years. These problems have generated large scale public opposition to nuclear energy in most countries. There are also the long construction times and high costs of nuclear energy and the need for a large, centralized power generation and distribution system.

The new argument being advanced for nuclear energy is that it offers a solution to climate change, or at least to reduce future greenhouse gas emissions. But nuclear power would primarily contribute to electricity production and, therefore, would be unable economically to mitigate the two-thirds of global CO<sub>2</sub>-emissions due to the fuels-used-directly in industry, transportation, and the residential and commercial sectors. The bulk of greenhouse emissions would remain to be addressed, while large amounts of money and skill would be poured into expanding nuclear energy.

The First Committee needs to consider how it can begin to make clear that nuclear energy should not be seen as an inalienable right of states under the NPT, but rather a profound challenge to international peace and security. It could begin to do this by focusing its attention on establishing principles for energy security.

The 2002 World Summit on Sustainable Development in Johannesburg agreed a basis for thinking about the future of energy security. The Summit Declaration made a call for “reliable, affordable, economically viable, socially acceptable and environmentally sound” energy. These offer a good basis to establish an international charter for energy security and the creation of an international renewable energy agency.

### **Space Weapons**

All of these questions of international security deal with problems created by the discovery of atomic energy and stem from the failure to properly address them when they were first realized sixty years ago. Today, there is an emerging problem that may become similarly more difficult and more complex and as dangerous for international peace and security. This concerns the potential weaponization of space.

The United States National Space Policy announced in October 2006 makes clear how important space capabilities have become. It says “The United States considers space capabilities -- including the ground and space segments and supporting links -- vital to its national interests. Consistent with this policy, the United States will: preserve its rights, capabilities, and freedom of action in space; dissuade or deter others from either impeding those rights or developing capabilities intended to do so; take those actions

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<sup>7</sup> IAEA Power Reactor Information System database, [www.iaea.org](http://www.iaea.org).

necessary to protect its space capabilities; respond to interference; and deny, if necessary, adversaries the use of space capabilities hostile to U.S. national interests.”<sup>8</sup>

There is an urgent need to develop a comprehensive space security regime that can prevent the weaponization of space. But any such effort must confront the fact that the US National Space Policy states that “The United States will oppose the development of new legal regimes or other restrictions that seek to prohibit or limit U.S. access to or use of space. Proposed arms control agreements or restrictions must not impair the rights of the United States to conduct research, development, testing, and operations or other activities in space for U.S. national interests.”

The First Committee should insist on its responsibility to further disarmament and international security. It should begin urgently to consider the steps it can take to develop a space security regime. These include:

- Initiating a concerted effort to universalize the Outer Space Treaty. Only about 100 countries have signed and ratified this fundamental treaty. Having all countries be parties to the Treaty would reinforce the basic space security regime and help to educate and involve all nations in protecting space as a shared resource for peaceful development and the enhancement of global security.
- Encouraging all nations to make a unilateral declaration not to be the first to deploy weapons in space. Russia has already made such a pledge. This would be a first step towards negotiating a multilateral space security treaty.

The space age should not be allowed to become a repeat of the nuclear age.

### **Conclusion**

Sixty years have passed since the United Nations first called for the elimination of nuclear weapons. Since then, the nuclear problem has become more serious and more complex.

The images of Hiroshima and Nagasaki have faded for most people. The Hibakusha, the survivors of the atomic bombings of Hiroshima and Nagasaki have grown old and are dying. The voices of the only people who truly know the horror of nuclear weapons will soon be silent.

As time has passed, we can see that the bomb has become more than a weapon. For the countries that have the bomb or seek it, the bomb has become a tool of diplomacy, a part of the economy, an element of national identity. All of this must now change if we are to realize the goal of ending the nuclear age.

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<sup>8</sup> *US National Space Policy 2006*, <http://www.ostp.gov/html/US%20National%20Space%20Policy.pdf>.