

Nuclear Abolition Briefing Packet, 2010

A resource prepared by,

Coalition for Peace Action

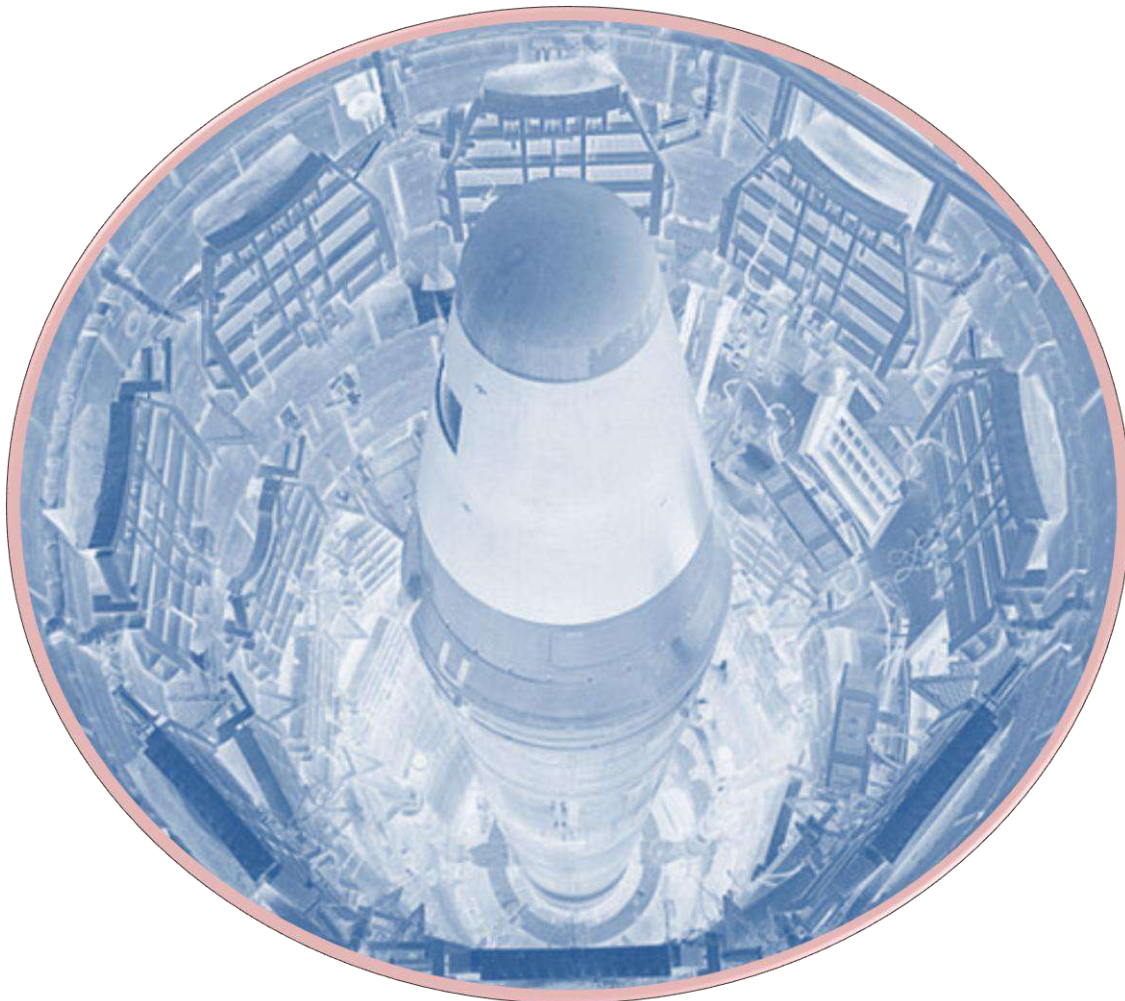


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(An affiliate of Coalition for Peace Action)



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Senator Bob Casey

by Hand

Dear Senator Casey,

In last spring's Prague speech, President Obama - following in the footsteps of President Reagan - called for the complete abolition of nuclear weapons. These dangerous, expensive weapons, which have been called doomsday weapons, have caused profound insecurity, rather than security, to the United States and the world.

Especially with the growing danger of nuclear terrorism, they are a catastrophe waiting to happen. And in light of their huge annual cost, estimated at \$52 billion, they are a major detriment to economic security. It is time to take concrete steps toward globally abolishing nuclear weapons.

For this dream to be realized, we need to succeed in efforts, such as Treaty ratification, in the US Senate that you are well aware of. To that end we, and others in the national nuclear weapons abolition movement, are seeking "Champions" to help lead and promote the next steps necessary to advance the abolitionist agenda. We strongly encourage you to take such a role. We very much need you to be a Senate Champion for Nuclear Abolition.

We offer you this briefing packet as eager partners in our common efforts to rid the world of these dangerous weapons. We hope that this will be the first in an ongoing partnership in this cause to benefit your office, our organization, and ultimately, our constituents in Pennsylvania, and, most importantly, the people of the world.

The Rev. Robert Moore,

Executive Director, Coalition for Peace Action

Taking the Right Road on Nukes



Kevin Martin, National Peace Action | April 9, 2009

Foreign Policy In Focus Editor: John Feffer

Longtime *New York Times* columnist Tom Wicker, at a 1992 Peace Action national conference, spoke about "the roads not taken" on nuclear arms control and disarmament. His remarks made the gathered peace activists wistful about the many near-misses or forks in the road when more public pressure or bolder presidential leadership might have led us down a path toward ridding the planet of the scourge of nuclear weapons. One story in particular was very poignant and remains relevant today.

President John F. Kennedy embarked on a tour of the United States shortly after the successful 1963 negotiations with the Soviet Union and United Kingdom on the Limited (Nuclear) Test Ban Treaty (LTBT). The treaty outlawed nuclear weapons test explosions in the atmosphere, under water, and in outer space.

On his speaking tour, Kennedy was surprised by the overwhelmingly enthusiastic response he received from grateful Americans, so much so that he wished he had pushed harder for a Comprehensive Test Ban Treaty (CTBT) to outlaw all nuclear tests. The LTBT didn't stop the arms race; it just pushed nuclear testing underground. Although world leaders, including President Bill Clinton, signed the CTBT in 1996, the U.S. Senate has yet to ratify it, and the treaty hasn't gone into effect. We are still paying for the road not taken by Kennedy in 1963 and by successive presidents, though the world has far fewer nuclear weapons than in 1963.

President Barack Obama, Secretary of State Hillary Clinton, and Senate Foreign Relations Committee Chair John Kerry have stated, consistently and to their credit, that they will seek Senate ratification of the test ban treaty. But at present, it remains uncertain whether 67 senators support ratification (the

Constitution requires a 2/3 majority in the Senate for treaty ratifications). The administration, wisely, isn't putting all its eggs in the CTBT basket. Instead, it's pursuing a treaty for further nuclear arms cuts with Russia and strengthened nuclear nonproliferation policies. We're on the verge of retracing our steps to that critical fork in the road. Will the United States lead the world down the road not taken?

RevCon Coming Up

In April and May 2010, over 180 countries will send representatives to the United Nations in New York City for the Nuclear Non-Proliferation Treaty (NPT) Review Conference (RevCon in United Nations parlance), a gathering that convenes every five years. Since the treaty, which entered into force in 1970, was made permanent at the 1995 Review Conference, non-nuclear states have been justifiably frustrated by the lack of progress by the United States and other nuclear weapons states toward the elimination of their nuclear arsenals, as the treaty's Article VI requires. The last two review conferences in 2000 and 2005 have affirmed a series of 13 steps toward nuclear disarmament, on which almost no progress has been made.

Many arms control and disarmament advocates hoped the Senate would ratify the CTBT before the NPT Review Conference, and thereby help speed its entry into force, the first of the 13 key steps. Since that appears uncertain, Obama needs an arms reduction treaty with Russia so that the United States doesn't come to the review conference empty-handed. A pledge to seek Senate ratification of the test-ban treaty before the end of his first term would also help.

Another significant and hopeful sign is the recent statement by Obama and Russian President Dmitry Medvedev on their intent to achieve a treaty cutting nuclear weapons to no more than 1,500 for each side before the end of this year. Their statement explicitly mentioned the Article VI obligation to pursue nuclear disarmament.

However, the NPT Review Conference presents an opportunity to go beyond incremental arms control and nonproliferation steps.

The goal shouldn't just be to mollify non-nuclear states' concerns, but rather to take the road toward abolishing all nuclear weapons worldwide. Obama should announce, at the NPT Review Conference or even before, the initiation of multi-lateral negotiations for a treaty or convention to abolish nuclear weapons, similar to the Chemical and Biological Weapons Conventions. Given the ambitious nature of eliminating all nuclear weapons worldwide, the negotiations might take several years, so why not get started as soon as possible? There is no good reason to delay initiating these negotiations, and they could be done in any of a number of international forums. The UN Conference on Disarmament, the NPT review process, an *ad hoc* negotiating process — the forum doesn't particularly matter.

Bold vs. Incremental

According to the incrementalists, abolition should come later. Other, more incremental arms control measures should come first — the test-ban treaty ratification, the arms reduction treaty with Russia, a treaty to ban the production of fissionable materials (enriched uranium and plutonium for nuclear warheads), or others.

But there is a danger that such an incremental path will throw up innumerable hurdles that must be cleared before negotiations on nuclear weapons abolition can even begin. Given serious concerns about nuclear proliferation and even nuclear terrorism, it would be imprudent to wait. Embarking on nuclear weapons

elimination talks now could also help detour around a host of potentially thorny issues that could consume much time, energy and money, such as an increase in funding for nuclear research by U.S. weapons laboratories, the question of extending the lifetime of our existing nuclear stockpile, possibly developing new nuclear warheads, and others.

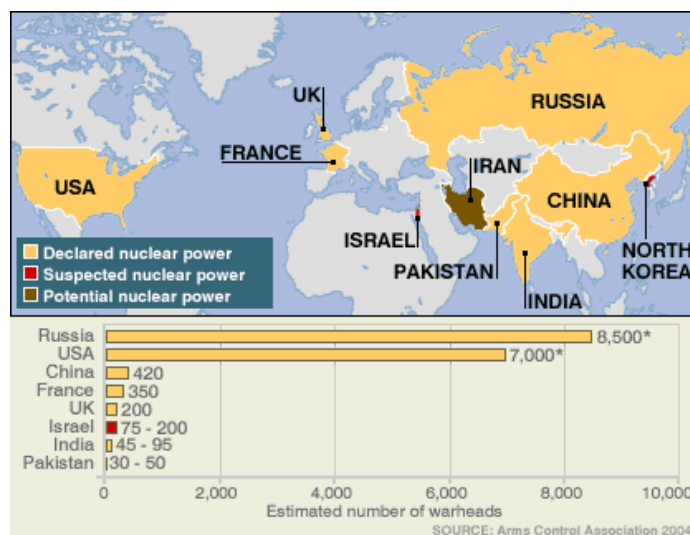
We can create the necessary institutions and negotiate the necessary treaties — such as a fissile materials ban or an International Renewable Energy Agency (IRENA) — within the larger framework of arms elimination talks. As a veteran of the nuclear disarmament community once said to me about nuclear weapons, "I just want to get rid of the damned things. All the rest of it bores me." Indeed, most people have no interest in the nitty-gritty of nuclear weapons policy and technology, and would just be happy to be rid of them.

We have a president committed to the goal of getting rid of nuclear weapons and the opportunity of the NPT review process. We shouldn't make the same mistake that Kennedy did by going down the incremental path. Instead, let's seize on "the fierce urgency of now" as Dr. Martin Luther King, Jr., a passionate advocate of abolishing nuclear weapons, urged us in a different context in 1967. We don't want to look back in another 30 years and regret, once again, the road not taken.

Foreign Policy In Focus

contributor Kevin Martin is Executive Director of

Peace Action (www.peace-action.org).



A World Without Nuclear Weapons

Six Wrong-Headed Cliches about Disarmament

By Oliver Thränert

Edited for length by D. E. Gibson

With President Obama's Prague speech on "global zero" and the Nuclear Non-Proliferation Treaty Review Conference scheduled for May 2010, nuclear disarmament is a pressing issue that is unfortunately plagued by old stereotypes.

The Nuclear Non-Proliferation Treaty (NPT) is a Cold War relic.

Wrong. The treaty that came into force in 1970 was largely the work of the superpowers: the United States and the Soviet Union. However, the NPT also serves the national interests of the nuclear have-nots, whose main concern is to prevent dangerous nuclear arms races in their regions.

Currently, in the wake of the renaissance of atomic energy, nuclear technology for both peaceful and military applications is becoming accessible to increasing numbers of states. Thus the NPT is more important than ever. It guarantees at least three things:

1) Transparency

The International Atomic Energy Agency (IAEA) carries out more than 2000 inspections in nuclear installations annually. The aim is to prevent the misuse of such technology for military purposes. Through these

inspections, a clearer picture is obtained of peaceful nuclear programs. States parties that already ratified the Additional Protocol to the IAEA Safeguards are subject to more comprehensive notification requirements and are now obliged to report on all of their nuclear activities, including research and development projects. The IAEA inspectors have improved access rights and are even authorized to take environmental samples at any place of their choosing.

Around half of the signatories to the NPT have not yet implemented the protocol. These countries must be convinced to join. However, in the total absence of IAEA inspectors there would be a great deal of uncertainty as to whether atomic programs, declared peaceful, were not being secretly abused for armament purposes. It could prove easier for terrorists to obtain access to fissile material. It is only on the basis of inspectors that states are forced to comply.

2) Formation of International Coalitions

The NPT is the precondition for the formation of international coalitions against potential nuclear proliferators. Without the NPT the formation of the E-3 plus 3 -- the coalition of France, Great Britain, Germany, the United States, Russia, and China established to counter the threat of Iranian nuclear armament -- would have been much harder, if not impossible. These states pursue different interests in respect of Tehran, however they are united in their determination to uphold the non-proliferation norm. Without the NPT many of the major powers would probably support the nuclear weapons programs of states that they are favorably disposed toward, while other major powers would attempt to combat such developments. This would lead to a considerable increase in international instability.

3) Political Style

The NPT is frequently described as the cornerstone of the entire international non-proliferation regime. And rightly so. It would be virtually impossible to uphold the treaties on the banning of biological as well as chemical weapons if it was not for the NPT. In its absence, the concept of limiting access to the world's most dangerous weapons by cooperative, diplomatic means, would be completely lost.

Thus the NPT proves to be far from a relic of the Cold War. On the contrary -- in a globalized world where dual-use technologies can easily be used for military purposes and are becoming increasingly accessible -- it is indispensable.

The NPT is in Crisis Because the Nuclear Powers are not Disarming Enough.

True, in a limited sense. In fact, the NPT is built on three main pillars. In addition to the non-proliferation norm -- i.e. the permanent relinquishment of nuclear weapons by over 180 states -- [under Article 6] the treaty also commits the nuclear powers that are the United States, Russia, France, Great Britain, and China, to serious nuclear disarmament within the framework of general disarmament for which all states are responsible. The third pillar is the free access to the peaceful use of nuclear energy.

For some time, many non-nuclear-weapons states have complained of an imbalance in the emphasis placed on these three pillars by the major powers. Above all, the Bush administration had been heavily criticized for continually indicting potential norm violators such as Iran or Syria, while appearing to neglect the issue of its own disarmament. In fact the Bush administration showed little interest in disarmament treaties. However, it reduced the United States' arsenal of nuclear weapons to a level deemed necessary by Washington, resulting in the decommissioning of several thousand warheads. In his

April 2009 speech in Prague, President Barack Obama announced a general change of course: the American goal is now, called "global zero," is to eliminate all nuclear weapons worldwide. (The international community confirmed this vision, with the UN Security Council approving a historic resolution in a unanimous vote on September 24, 2009.) As a first step on this new course, Washington and Moscow are working on a new treaty on the limitation of strategic nuclear weapons to be concluded by the end of 2009.

Aside from this, NATO has already implemented a concept of minimum nuclear deterrence. While at the height of the cold war the United States had more than 7,000 non-strategic nuclear weapons on a range of different carriers stationed throughout Europe, today only approximately 200 American airborne bombs remain in Europe.

But is there actually any empirical connection between nuclear non-proliferation and nuclear disarmament? In the 1980s, as Ronald Reagan and Michail Gorbachev finally began to massively reduce the American and Soviet nuclear arsenals in the course of the INF (intermediate range weapons) and START (strategic weapons) treaties, countries such as Iraq under Saddam Hussein, Iran, Libya, and North Korea, began their nuclear programs. The determining factors were ambitions of supremacy (Iraq), security needs (Iran in respect of the then wartime enemy Iraq), prestige (Libya) or the pursuit of a form of life insurance policy and the extortion of economic aid (North Korea). Whether Moscow or Washington made progress in terms of nuclear disarmament was irrelevant to these countries. Even today, no one would seriously maintain that Kim Jong Il or Mahmoud Ahmadinejad would relinquish nuclear weapons or a corresponding option simply because the United States and Russia had reduced their numbers of nuclear weapons.

However, there is a political connection between disarmament and non-proliferation: The greater the

progress in disarmament, the easier it will be to convince previously reluctant countries at the forthcoming NPT Review Conference in May 2010 to take the measures necessary to strengthen the treaty -- such as the implementation of the IAEA Additional Protocol.

The Nuclear Test Ban Treaty Cannot Come into Force Because it has Not Been Ratified by the United States .

Also true, in a very limited sense. In 1996 the UN General Assembly voted for the Nuclear Test Ban Treaty, which forbids all nuclear weapons tests as well as so-called peaceful nuclear explosions. The test ban is seen as an important symbol of nuclear disarmament by many non-nuclear-weapons states. In order that the treaty be enacted under international law it has to be ratified by 44 countries listed in a treaty annex which are in possession of nuclear power stations or research reactors.

Naturally, the United States is part of this group. The Clinton administration submitted the Test Ban Treaty to the United States senate for ratification. However it rejected the treaty in October 1999 by 51 to 48 votes. The Bush administration rejected a renewed submission to the senate. In contrast, President Obama is soon to undertake a new attempt. Although the Democrats now have a majority in the senate, at least seven Republicans must support the Test Ban Treaty in order to reach the required two-thirds majority. Even if this is achieved, the Test Ban Treaty would still be a long way from enactment. Further states such as China, India, Pakistan, Iran, North Korea, and Israel still have to submit their instrument of ratification. Following U.S. ratification the political pressure on these countries would increase enormously, however this would be a long way from guaranteeing their agreement.

Beijing's intention is to keep open the nuclear test option in order to develop its nuclear weapons arsenal and strengthen its position as a nuclear power. The situation

is similar in the case of India, where indications have been mounting that a supposedly successful hydrogen bomb test in 1998 failed to yield the expected results. In order to check the design of its hydrogen bomb it is possible that further tests will be required. As long as India fails to enact the Test Ban Treaty, ratification on the part of Pakistan is ruled out. Islamabad's decision is strictly linked to India's actions. In light of their uncooperative behavior, test ban ratifications on the part of Iran and North Korea are unlikely. And even Israel is hardly likely to ratify, having fought shy of all multilateral arms control treaties to date. As on-site inspections are also inscribed in the Test Ban Treaty, Israel will be required to radically alter its policy of rejecting such monitoring measures out of a fear of revealing military secrets; however, this is not to be expected.

In conclusion, an American ratification of the Nuclear Test Ban Treaty would be at best a political signal from Washington that disarmament is to be taken more seriously again. However, in no sense would this go hand in hand with an enactment of the treaty.

Does Iran Have the Right to Enrich Uranium?

Iran has a right to the peaceful use of nuclear energy, in particular uranium enrichment.

Yes, but not unconditionally. The NPT does indeed specify free access to the peaceful use of atomic energy, although specific technologies such as uranium enrichment or reprocessing are not mentioned in the treaty. However, within the terms of the NPT the right to the civil use of nuclear energy is strictly linked to the categorical exclusion of all forms of military misappropriation. This is not the case with Iran. As a result of Tehran's nontransparent behavior over the course of many years, the IAEA is not in a position to provide credible assurance about the absence of undeclared nuclear material and activities in Iran. Rather,

the IAEA is concerned with the existence of a possible military dimension to Iran's nuclear program.

Furthermore, in five resolutions thus far, the UN Security Council has called on Iran to cease its uranium enrichment activities as well as its heavy water program as these two technologies are especially suited to misuse for military purposes and do not comply with international law. To date, the appeals have had no success.

Though Iran has forfeited its right to unrestricted access to civil nuclear technology through its misconduct, it was never the aim of the United States or its European partners to deny Tehran such access -- either as a matter of principle or on a permanent basis. On the contrary, the West principally supported the completion of the Iranian light-water reactor in Bushehr, providing the fuel rods were supplied by Russia and taken back after use. In its proposal from July 2006, the E3 plus 3 even offered Iran support in the construction of further light-water reactors, should Tehran suspend its uranium enrichment activities and heavy water project and clarify open questions with the IAEA. If Iran were to dispel the doubts it has raised by its own behavior, the E3 plus 3 is prepared to lift its call for the suspension of uranium enrichment and other nuclear technologies on a step by step basis. At no point in time was the goal to fundamentally and permanently deny Iran a right to which it is entitled. Rather, it is up to Iran to win the confidence of the international community as a step to utilizing the full spectrum of nuclear energy for civil purposes.

A world without nuclear weapons is unachievable - and dangerous.

That depends. The goal of a world free of nuclear weapons should not be abandoned. In this respect, President Obama's disarmament goals and the latest UN resolution are to be welcomed. Nuclear deterrence may fail. Contrary to popular opinion we do not even know

whether it actually functioned during the Cold War, as we cannot logically prove why an event -- in this case war between East and West -- did not occur. Moreover, it was fortunate that 1962 Cuban missile crisis did not end in nuclear escalation as the United States and the Soviet Union did not manage that crisis well at all.

And who is prepared to bank on states involved in future crises having as much luck -- for example India and Pakistan? After all, they have already waged a limited conventional war that was the Kargil war in 1999. Nuclear weapons states are perfectly capable of launching aggression against nuclear neighbors in the hope that the other side is prepared to accept a limited defeat out of fear of nuclear escalation. However, as Clausewitz was aware, war leads to extremes. The prevention of nuclear escalation is by no means guaranteed.

This applies all the more in the Near East, where Israel, by virtue of its geography alone, would not have any second-strike capacity should its territory be threatened, particularly with regards to Iran. Consequently, it must strike the nuclear weapons out of Iran's hand at a relatively early stage in the crisis, which in turn would dispose Tehran to the early deployment of its nuclear capacity -- before it is lost.

Relying on nuclear deterrence to maintain continued stability ultimately means building the future on a foundation of sand. In this respect, the goal of complete nuclear disarmament is unavoidable. However, who has ever claimed that this goal is easy to achieve?

In fact, this is more than a Herculean task. In order to make a world without nuclear weapons a safe place, secret nuclear rearmament must be excluded. All states must join the nuclear weapons ban. Unfortunately, biological or chemical arms bans have been much less successful thus far. Furthermore, a reliable and very intrusive verification system would be required. This

would generate high costs and create a gigantic bureaucracy.

Would the dictatorships of this world be willing to comply with the required transparency? And what would happen if a state was caught developing a secret nuclear program? Would the UN Security Council be prepared to take military action against violators of the treaty in the event of an emergency? And what if the violator was a permanent member with a right of veto -- a member against whom it would be impossible to pass legally binding resolutions without their consent? Consequently, the right to veto in the Security Council must be abolished along with nuclear weapons.

In other words: A world without nuclear weapons presupposes a new world order. It is a goal that will not be achieved overnight. However, we should begin. Sooner or later, the assumption that humanity can continue to live with nuclear weapons without deploying them will prove to be a misapprehension.

Missile Defense Impedes Nuclear Disarmament.

Here again, this is not necessarily the case. Despite his September 2009 decision not to pursue the Bush administration's plans for missile defense installations in Poland and the Czech Republic, President Obama has far from abandoned missile defense per se. In light of the continued threat that Iran or other countries could procure long range nuclear missiles, the United States will continue to rely on missile defense, albeit with a changed set of priorities and on a reduced scale. Even Russia is continuing with its missile defense projects, despite the fact that Moscow is keen to give the impression that only the United States pursues such schemes.

In light of continued proliferation, missile defense could in fact provide important damage limitation options. Should a Middle East crisis involving a nuclear-armed Iran

get out of hand at some point in the future, then Europe would need to be able to defend itself.

However, at the same time, missile defense must not lead to an offensive nuclear arms race between the United States and Russia. For this reason, both parties should thoroughly examine the options for cooperation over missile defense. A start has already been made in this respect. China, which fears a joint American-Russian missile shield, should also be included.

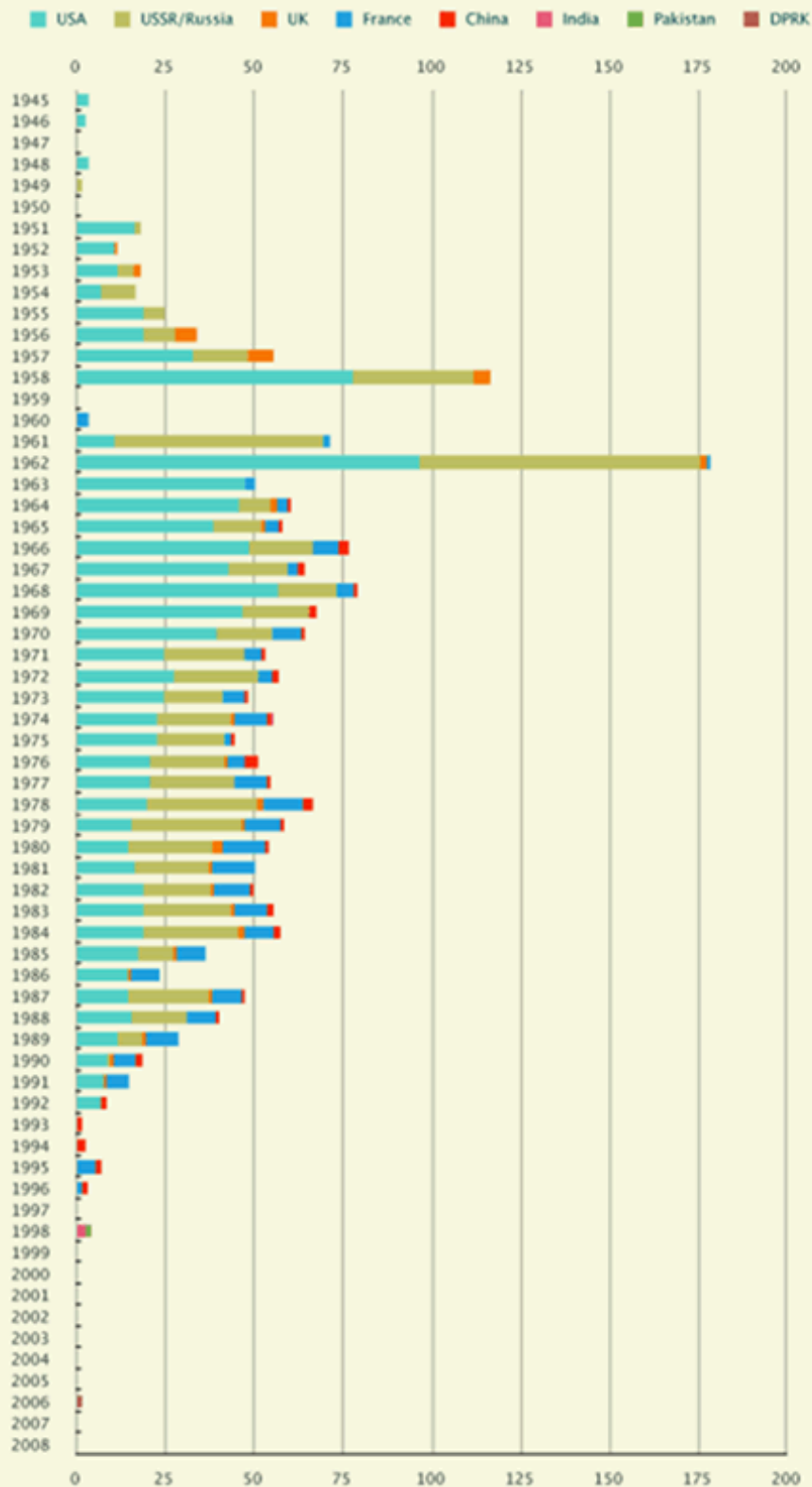
Should this prove successful, a cooperative missile defense strategy could even become an important component of a worldwide ban on nuclear weapons. Such a world would not be free of dictatorships and this would continue to place a limit on verification. Nor would it be a world without missiles owing to the fact that an increasing number of states have begun to pursue civil space projects. Consequently, there would be a danger of secret nuclear armament which would enable it to threaten others over great distances. However, in contrast, a cooperative missile defense strategy would provide counter insurance and thus lay the basis for the abolition of all nuclear weapons.

Oliver Thränert is a senior fellow of the German Institute for International and Security Affairs in Berlin.



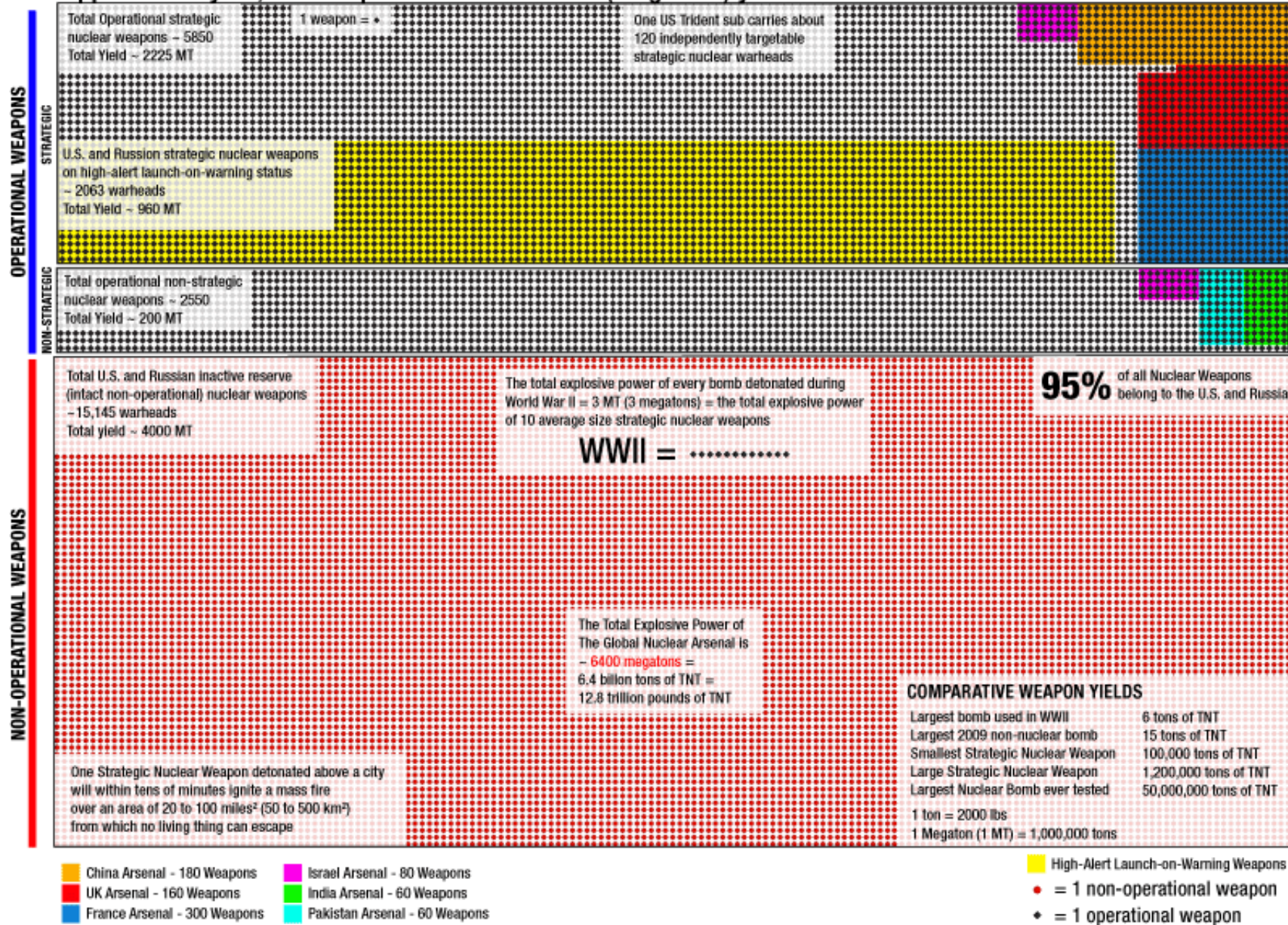
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WORLDWIDE NUCLEAR TESTING 1945-2007



GLOBAL NUCLEAR ARSENAL 2009

Approximately 23,335 weapons with ~ 6400 MT (megatons) yield



U.S. Department of Energy, National Nuclear Security Administration

January 2009

U.S. Nuclear Weapons Stockpile

The Department of Energy's National Nuclear Security Administration (NNSA) is responsible for maintaining the safety, security and reliability of the U.S. nuclear weapons stockpile. In doing so, it ensures that the U.S. nuclear deterrent meets the needs of the 21st century.

Reducing the Nuclear Weapons Stockpile

- The current U.S. nuclear weapons stockpile is the lowest it has been since the Eisenhower Administration.
- Dismantlement of the W79 was completed in 2003.
- Dismantlement of the W56 was completed in 2006.
- 13 different nuclear weapon types have been retired and eliminated since 1992.
- 374 metric tons (MT), or roughly 15,000 nuclear weapons-worth, of highly enriched uranium (HEU) removed from U.S. stocks. 200 MT of this amount was declared excess in 2005.
- 61.5 MT, or roughly 7,600 nuclear weapons-worth, of plutonium removed from U.S. stocks. 9 MT of this amount was declared excess in 2007.

Consolidating Nuclear Material

NNSA plans to consolidate nuclear materials at five sites by 2012, with significantly reduced square footage at those sites by 2017. This will further improve security and reduce security costs, and is part of NNSA's overall effort to transform the Cold War era nuclear weapons complex into a 21st century nuclear security enterprise.

- 15 MT of special nuclear material was removed from NNSA sites in fiscal year 2008.
- Sandia National Laboratories has removed all special nuclear material quantities that require the highest level of security.
- Lawrence Livermore National Laboratory has reduced its special nuclear material by 35%.

Consolidating the Nuclear Weapons Complex

Reflecting a reduced stockpile and the need to tear down Cold War-era facilities, NNSA has a plan, known as Complex Transformation, to move from the current aging nuclear weapons complex to a 21st century national security

enterprise that is smaller, safer, more secure and more cost effective. Complex Transformation would:

- Close or transfer from weapons activities about 600 buildings or structures, many by 2010;
- Reduce the footprint of NNSA operations at two major testing sites supporting its laboratories by 2015;
- Reduce the square footage of buildings and structures supporting weapons missions by 9 million square feet; and
- Employ 20-30% fewer workers directly supporting weapons missions consistent with a smaller, more efficient complex.

Maintaining the Nuclear Weapons Stockpile

The United States has not deployed a new nuclear weapon in over 20 years, nor conducted an underground nuclear test since 1992. Instead, NNSA scientists maintain current warheads well beyond their original life using sophisticated supercomputers and facilities that test the safety, security and reliability of U.S. weapons in NNSA laboratories versus through an underground nuclear test – an important nonproliferation goal.

- The life extension program for the W87 was completed in 2004.
- The life extension program for the B61-7 and B61-11 nuclear bombs were completed in 2008. This extended the lives of these weapons by at least 20 years.
- The fastest supercomputer in the world, Roadrunner, is used to perform calculations that vastly improve the ability to certify the reliability of the stockpile without conducting underground nuclear tests. NNSA's Blue Gene/L and Red Storm are some of the world's fastest supercomputers as well.
- The capability to manufacture a small number of replacement "pits," the triggers of nuclear weapons, for the W88 was reestablished in 2007. Building these replacement pits allows NNSA to continue to take apart and certify the reliability of the stockpile without conducting underground nuclear tests.
- The capability to produce tritium, a short-lasting but essential component of a nuclear weapon, was reestablished in 2006.

Media contact(s):

NNSA Public Affairs (202) 586-7371

Nuclear Weapons: Who Has What at a Glance

Daryl Kimball, Executive Director,
Peter Crail, Research Analyst,
Tom Collina, Research Director,
Arms Control Association

At the dawn of the nuclear age, the United States hoped to maintain a monopoly on its new weapon, but the secrets for making nuclear weapons soon spread. Four years after the United States dropped atomic bombs on Japan in August 1945, the Soviet Union detonated its first nuclear device. The United Kingdom (1952), France (1960), and China (1964) followed. Seeking to prevent the nuclear weapon ranks from expanding further, the United States and other like-minded states negotiated the nuclear Nonproliferation Treaty (NPT) in 1968. In the decades since, several states have abandoned nuclear weapons programs, but others have defied the NPT. India, Israel, and Pakistan have never signed the treaty and possess nuclear arsenals. Iraq initiated a secret nuclear program under Saddam Hussein before the 1991 Persian Gulf War. North Korea announced its withdrawal from the NPT in January 2003 and has tested nuclear devices since that time. Iran and Libya have pursued secret nuclear activities in violation of the treaty's terms, and Syria is suspected of doing the same. Still, nuclear nonproliferation successes outnumber failures and dire forecasts decades ago that the world would be home to dozens of states armed with nuclear weapons have not come to pass.

Nuclear-Weapon States: The nuclear-weapon states (NWS) are the five states—China, France, Russia, United Kingdom, and the United States—officially recognized as possessing nuclear weapons by the NPT. Although the treaty legitimizes these states' nuclear arsenals, it also establishes that they are not supposed to build and maintain such weapons in perpetuity. Article VI of the treaty holds that each state-party is to "pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament." In 2000, the five NWS committed themselves to an "unequivocal undertaking...to accomplish the total elimination of their nuclear arsenals." But for now, the five continue to retain the bulk of their nuclear forces. Because of the secretive nature with which most governments treat information about their nuclear arsenals, the figures below are best estimates of each nuclear-weapon state's nuclear holdings, including both strategic warheads and lower-yield devices referred to as tactical weapons:

China: 100-200 warheads.

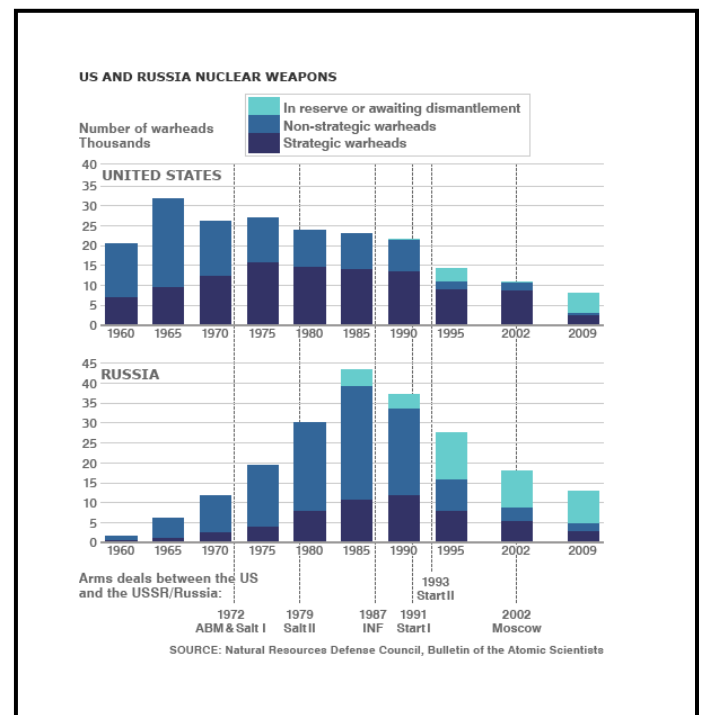
France: Approximately 350 strategic warheads.

Russia: 2,787 strategic warheads^[1], approximately 2,000 operational tactical warheads, and approximately 8,000 stockpiled strategic and tactical warheads.

United Kingdom: Less than 160 deployed strategic warheads.

United States: 2,126 strategic warheads^[1], approximately 500 operational tactical weapons, and approximately 6,700 reserve strategic and tactical warheads.

Defacto Nuclear-Weapon States: Three states—India, Israel, and Pakistan—never joined the NPT and are known to possess nuclear weapons. Claiming its nuclear program was for peaceful purposes, India first tested a nuclear explosive device in 1974. That test spurred Pakistan to ramp up work on its secret nuclear weapons program. India and Pakistan both publicly demonstrated their nuclear weapon capabilities with a round of tit-for-tat nuclear tests in May 1998. Israel has not publicly conducted a nuclear test, does not admit to or deny having nuclear weapons, and states it will not be the first to introduce nuclear weapons in the Middle East. Nevertheless, Israel is universally believed to possess nuclear arms. The following arsenal estimates are based on the amount of fissile material—highly enriched



uranium and plutonium—that each of the states is estimated to have produced. Fissile material is the key element for making nuclear weapons. India and Israel are believed to use plutonium in their weapons, while Pakistan is thought to use highly enriched uranium.

India: Up to 100 nuclear warheads.

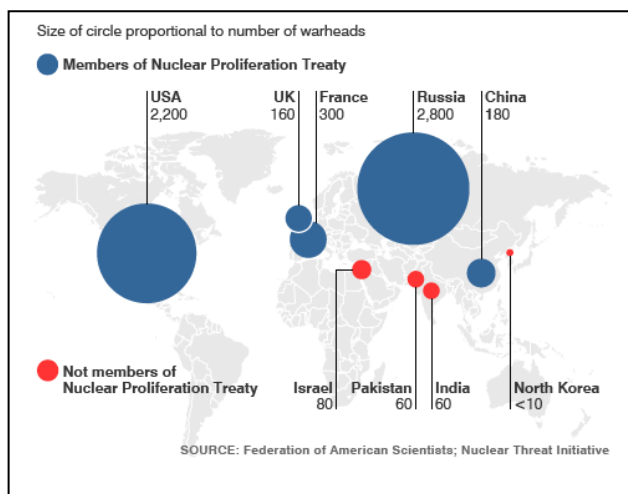
Israel: Between 75 to 200 nuclear warheads.

Pakistan: Between 70 to 90 nuclear warheads.

Figures below more than reported due to “rounding”

States of Immediate Proliferation Concern:

Iran is pursuing an uranium enrichment program and other projects that could provide it with the capability to



produce bomb-grade fissile material and develop nuclear weapons within the next several years. In contrast, North Korea has the material to produce a small number of nuclear weapons, announced its withdrawal from the NPT, and tested nuclear devices. Uncertainty persists about how many additional nuclear devices North Korea has assembled beyond those it has tested. In September 2005, Pyongyang “committed to abandoning all nuclear weapons and existing nuclear programs.”

Iran: No known weapons or sufficient fissile material stockpiles to build weapons. However, the International Atomic Energy Agency (IAEA), the institution charged with verifying that states are not illicitly building nuclear weapons, concluded in 2003 that Iran had undertaken covert nuclear activities to establish the capacity to indigenously produce fissile material. The IAEA is continuing its investigation and monitoring of Tehran’s nuclear program.

North Korea: Has separated enough plutonium for up to 12 nuclear warheads.

Syria: In September 2007, Israel conducted an airstrike on what U.S. officials have alleged was the construction site of a nuclear research reactor similar to North Korea’s Yongbyon reactor. Intelligence officials briefed members of congress on the airstrike eight months later in April 2008, discussing the evidence leading to their judgment that the site was an undeclared nuclear reactor. While the extent of Syrian-North Korean nuclear cooperation is unclear, it is believed to have begun in 1997. Subsequent IAEA investigations into the U.S. claims uncovered traces of undeclared man-made uranium particles at both the site of the destroyed facility and Syria’s declared research reactor. Syria has failed to provide adequate cooperation to the IAEA in order to clarify the nature of the destroyed facility and procurement efforts that could be related to a nuclear program.

States That Had Nuclear Weapons or Nuclear Weapons Programs at One Time:

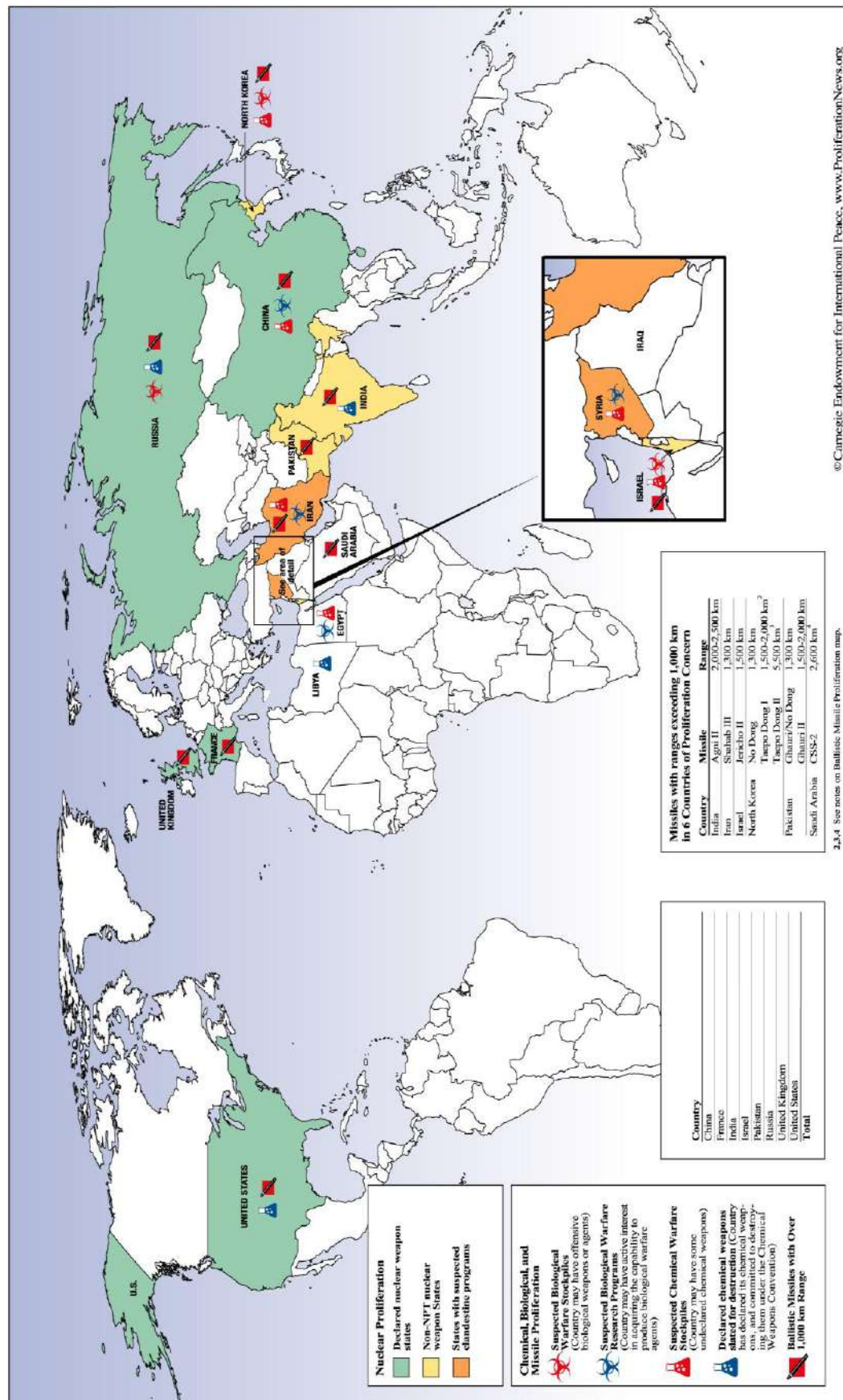
Belarus, Kazakhstan, and Ukraine inherited nuclear weapons following the Soviet Union’s 1991 collapse, but returned them to Russia and joined the NPT as non-nuclear-weapon states. South Africa secretly developed and dismantled a small number of nuclear warheads and also joined the NPT in 1991. Iraq had an active nuclear weapons program prior to the 1991 Persian Gulf War, but was forced to verifiably dismantle it under the supervision of UN inspectors. The U.S.-led March 2003 invasion of Iraq and subsequent capture of Iraqi leader Saddam Hussein definitively ended his regime’s pursuit of nuclear weapons. Libya voluntarily renounced its secret nuclear weapons efforts in December 2003. Argentina, Brazil, South Korea, and Taiwan also shelved nuclear weapons programs.

ENDNOTE 1. SORT limits the United States and Russia to 2,200 strategic warheads each.

Sources: Arms Control Association, Carnegie Endowment for International Peace, Central Intelligence Agency, Congressional Research Service, U.S. Department of Defense, Institute for Science and International Security, International Atomic Energy Agency, and Natural Resources Defense Council

<http://www.delcowagepeacejustice.org/>

<http://www.peacecoalition.org/>



Securing Our Future: A Nuclear-Free World *Alliance for Nuclear Accountability*

DC Days 2009 Fact Sheet

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Securing Our Future:

Halting Unnecessary Nuclear Weapons Production

The Department of Energy (DOE) Complex Transformation plan involves a massive overhaul of U.S. nuclear weapons facilities. The vision of DOE's National Nuclear Security Administration (NNSA) includes a continuous production stream of refurbished and modified nuclear weapons involving a host of "modernized" plants. Far from scaling back nuclear weapons activities, major new facilities are planned for uranium component production and plutonium bomb cores, among others. With both the public and national security experts calling for U.S. leadership toward a nuclear weapons-free world, Complex Transformation is counterproductive. Additionally, DOE is attempting to illegally build a new nuclear weapons plant in Kansas City, Missouri on the basis of a flawed environmental assessment by using "alternative financing" and private developers. Federal litigation has been filed by public interest organizations.

PUBLIC OPPOSITION

Since it was first proposed, Complex Transformation has faced public opposition unprecedented in DOE history. During legally required comment periods in 2006 and again in 2008, DOE received more than 140,000 comments opposing the scheme. Despite this unprecedented outcry, DOE ignored most of the public's recommendations and has moved forward with its plan.

PLUTONIUM BOMB CORES

Plutonium pits—carefully fabricated spheres of metal—and high explosives are the "triggers" for modern thermonuclear weapons. The U.S. presently has about 25,000 plutonium pits. Nearly 10,000 are in existing nuclear warheads. More than 10,000 "surplus" pits and five thousand in "strategic reserve" are stored at the Pantex Plant near Amarillo, TX. The Los Alamos National Laboratory (LANL) in New Mexico is engaged in limited production of pits for a sub-launched warhead.

Nuclear weapons assembly and disassembly occurs at the Pantex Plant. The facility has been specifically authorized to "reuse" up to 350 existing pits per year, mooted any claimed need to produce pits for the planned nuclear stockpile, other than those being fabricated at LANL. Pantex boasts that pit reuse is far less expensive and environmentally damaging than new pit production. More than enough pits have already been produced at LANL for annual surveillance tests for the next 15 years. Future arms control agreements may make even more spares available for maintenance tests.

Recommendations

- Postpone all significant new production and construction decisions regarding the nuclear weapons complex until the 2009 Nuclear Posture Review is completed.
- Eliminate all funding for the Chemistry and Metallurgy Research Replacement
- “Nuclear Facility” at Los Alamos and the Uranium Processing Facility at Y-12.
- Stop plans for a new Kansas City Plant until the future of the arsenal is clear.
- Mandate increased verifiable, irreversible dismantlement of nuclear warheads and provide adequate funding.
- Implement a “curatorship” program for the U.S. nuclear weapons complex in line with new initiatives for a smaller stockpile.

The Complex Transformation Record of Decision designates LANL as the preferred permanent pit production site. The proposed “Nuclear Facility” for LANL’s Chemistry and Metallurgy Research Replacement (CMRR) Project is central to expanded plutonium capabilities. Estimated total construction costs of this proposed facility have nearly quadrupled since 2004 to more than \$2 billion.

NNSA has recently chosen to defer any decision on expanding plutonium pit production at LANL until a new Congressionally-required Nuclear Posture Review (NPR) is complete. Until then, LANL’s maximum production capacity will remain limited to 20 pits per year, more than enough to meet current stockpile requirements, making the CMRR’s Nuclear Facility unnecessary.

LIFE EXTENSION PROGRAM

Ongoing nuclear weapons production in the U.S. takes place under Life Extension Programs (LEPs). In the mid-1990’s the weapons establishment shifted its focus to concerns that the current nuclear arsenal, no longer being replenished with new warheads, would have to serve a longer life than planned. Thus the Stockpile Stewardship and Management (SSM) Program was born. SSM’s mission included periodic surveillance and assessment of warheads

EXPANDING PIT PRODUCTION

and warhead components to make sure they would still “function as designed” if they were ever used. The Life Extension Programs grew out of the Stockpile Stewardship program. Under the LEPs, warheads are brought to the Pantex Plant in Texas where they are partially disassembled and component pieces replaced. The thermonuclear secondaries, the components responsible for the main explosion, are returned to the Y-12 Plant in Oak Ridge, Tennessee for rebuilding. The Complex Transformation Record of Decisions calls for a \$3 billion Uranium Processing Facility to be built at the Y-12 plant at Oak Ridge for the production of additional secondaries to support LEPs.

The LEPs have a huge price tag, \$234 million in FY 2008. No documentation has ever been made public demonstrating the necessity for LEPs in order to maintain the nuclear arsenal in good working order. Last year, it was revealed that LEP upgrades to the W76 warheads would add military capabilities. The modifications give the warhead increased accuracy and a new fuze that allows for selecting the optimum height of burst.

THE CURATORSHIP ALTERNATIVE

A “curatorship” program for the U.S. nuclear arsenal would rely on increased surveillance and long established procedures, such as limited life components replacement, to maintain the stockpile while adhering to original designs as much as possible. Unlike LEPs, curatorship does not intentionally introduce changes. As a result, it is more consistent with U.S. international nonproliferation goals. Curatorship would maintain the arsenal safely and reliably while it awaits dismantlement. Such a program would:

- Increase U.S. security by reducing reliance on nuclear weapons
- Reduce costs of maintaining and deploying an enduring nuclear arsenal
- Free up resources at national labs to address other significant challenges
- Demonstrate global leadership toward a nuclear weapons-free world
- Support the Nuclear Nonproliferation Treaty

Permanently Ending Nuclear Testing 2009

Alliance for Nuclear Accountability www.ananuclear.org

Comprehensive Test Ban Treaty

The Comprehensive Test Ban Treaty (CTBT) prohibits countries from conducting nuclear weapon explosions and establishes an extensive verification system through the Comprehensive Test Ban Treaty Organization (CTBTO). U.S. ratification of the CTBT would be a key component in repairing an already damaged non-proliferation regime. As part of the 1995 agreement to indefinitely extend the Nuclear Nonproliferation Treaty, the U.S. and other countries pledged to complete negotiations on the CTBT by 1996, which was done. In 2000, the U.S. committed to ratify the CTBT as part of the *13 Practical Steps* contained within the *2000 NPT Review Conference Final Document*. One hundred eighty countries have signed the treaty, and 148 have ratified. Forty-one of the 44 “Annex 2” states, whose ratification is required for the CTBT to enter into force, have signed the treaty, and 35 have ratified it. Still remaining are China, North Korea, Egypt, India, Indonesia, Iran, Israel, Pakistan and the United States. Although the U.S. was the first signatory of the CTBT, the Senate has failed to approve its ratification. In 1999, President Clinton’s political problems combined with uncertainties about treaty verification, monitoring and the ability to maintain existing weapons in the absence of testing led the Senate to reject the treaty in a partisan vote. In 2002, the Bush administration announced that it would not support ratification of the CTBT. Since then, prospects for test ban ratification have become more hopeful. President Barack Obama has expressed full support for the treaty, stating, “As president, I will reach out to the Senate to secure the ratification of the CTBT at the earliest practical date and will then launch a diplomatic effort to bring onboard other states whose ratifications are required for the treaty to enter into force.” There is now a larger Senate majority of CTBT supporters to work with the President.

Verification

Even without the CTBT entering into force, the CTBTO has created an extensive verification and monitoring system. In October 2006, an International Monitoring Station (IMS) - radionuclide detection station - was able to establish the location and magnitude of North Korea’s sub-kiloton underground nuclear test. Since then, IMS has expanded its overall monitoring capacity by 32% and its radionuclide detection capacity by 600%. Currently, the IMS consists of 242 certified stations: 127 seismic monitoring stations, 10 hydroacoustic monitoring stations, 54 radionuclide detectors, 10 radionuclide laboratories and 41 infrasound detectors. Over the coming years, the CTBTO plans to build a total of 337 detection facilities.

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Preventing Nuclear Weapons Development and Curbing Proliferation

The CTBT will strengthen the global non-proliferation regime by erecting a high barrier to the spread of nuclear weapons. Countries on the verge of acquiring nuclear weapons will be prohibited from testing. Countries already in possession of nuclear weapons will be less able to improve and modify their nuclear arsenals. In particular, the CTBT will limit the development of nuclear warheads deliverable by missiles and further refinement of nuclear weapons by states already possessing them.

Health and Environmental Impacts

CTBT ratification also carries with it significant health and environmental benefits by barring contamination-producing nuclear tests. An estimated 80,000 people who lived in or who were born in the United States between the years 1951 and 2000 will contract cancer as a result of the fallout from U.S. above-ground nuclear tests. In addition, radioactivity from underground tests threatens the surrounding environment and groundwater.

Recommendations

- ☐ President Obama should provide leadership for ratification of the Comprehensive Test Ban Treaty with no conditions at the earliest possible date.
- ☐ President Obama should appoint a senior advisor to coordinate disarmament and nonproliferation policies.

President Barack Obama has pledged to “lead a global effort to negotiate a verifiable treaty ending the production of fissile materials for weapons purposes.”¹ Fissile materials are the chain-reacting fissionable materials that are the essential ingredients in nuclear weapons, in practice, highly enriched uranium (HEU) and separated plutonium.

Complete Cutoff: Designing a Comprehensive Fissile Material Treaty

Obama is not the first president to back thenegotiation of such a treaty: President Bill Clinton did so after the UN General Assembly in 1993 adopted by consensus a resolution calling for negotiation of a “non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other explosive devices.”² Even the administration of President George W. Bush tabled a draft treaty at the Geneva-based Conference on Disarmament (CD), albeit without international verification.

Despite the passage of more than a decade since initial negotiations began and sputtered out, negotiations on a fissile material cutoff treaty

(FMCT) have yet to be renewed, stalled largely over disagreements about the negotiating agenda of the CD. For years, many countries have supported a proposal to have a CD work program that included parallel negotiations on an FMCT, nuclear disarmament, a binding agreement by the nuclear-weapon states not to use or threaten to use nuclear weapons against non-nuclear-weapon states, and the prevention of an arms race in outer space.

The U.S. position, however, has been that negotiations on an FMCT should not be linked to negotiations on other issues.³ Because the CD operates by consensus, any single country can block agreement on the program of work. Should this logjam be broken

and Obama be able to fulfill his pledge and begin talks, disputes about the scope of the treaty and its verification provisions would move to the fore.

Scope

Four of the five nuclear Nonproliferation Treaty (NPT) nuclear-weapon states (France, Russia, the United Kingdom, and the United States) announced in the 1990s that they had ended their production of fissile material for weapons. China has made no official announcement but is generally believed to have stopped producing during the same period. This means that the proposed FMCT primarily would constrain non-NPT states India, Israel, and Pakistan, all of which have nuclear arsenals.

Arend Meerburg retired from the Netherlands Foreign Ministry in 2004 after 34 years spent mostly working on multilateral arms control, including the Chemical Weapons Convention and the Comprehensive Test Ban Treaty. He was involved in the International Fuel Cycle Evaluation, international plutonium storage regime discussions, and the Nuclear Suppliers Group and served as a member of the International Atomic Energy Agency expert group on multinational nuclear approaches to sensitive parts of the nuclear fuel cycle. **Frank N. von Hippel** is a professor of public and international affairs at Princeton University. During 1993-1994, he was assistant director for national security of the White House Office of Science and Technology Policy. Both are members of the International Panel on Fissile Materials, and this article is based on the panel's “Global Fissile Material Report 2008.”

Many non-nuclear-weapon states, joined by Pakistan, argue that an FMCT should go beyond prohibiting the production of new fissile material for weapons.



Interior view of a cascade hall of Russia's Novouralsk centrifuge enrichment plant. The facility has a capacity of more than 10 million separative work units per year.

They point out that the existing stocks of fissile materials in some nuclear weapon states are so large that a cutoff would have no practical effect on restricting the number of nuclear weapons that they could produce.

In fact, only about one-half of the global stockpile of HEU and about one-third of the global stockpile of separated plutonium is in weapons stockpiles (see figures 1 and 2). Beginning in the mid-1990s, Russia and the United States declared excess almost one-half the fissile materials in their weapons stocks. Even though more than one-half of the weapons HEU that was declared excess has since been blended down to low-enriched uranium (LEU), the amount that remains to be blended down or used as HEU constitutes about 20 percent of the global stock of HEU.

Disposition of the weapons-grade plutonium that Russia and the United States declared excess has not even begun.

Among the nuclear-weapon states, Russia, the United Kingdom, and the United States fuel their naval reactors with HEU; India plans to do so as well.⁴ The United States is the only country thus far to declare a dedicated reserve of HEU for naval fuel, 128 metric tons of weapons-grade material. In the past, the United States has also supplied HEU to fuel British submarines.

France, Russia and the United Kingdom also have accumulated huge stocks of separated civilian plutonium; indeed, one-half of the global stock of separated plutonium is civilian. Surely, many non-nuclear-weapon

states argue, an FMCT should capture all these stocks of non-weapon materials as well.

In 1995, Canadian Ambassador Gerald Shannon was tasked with finding a way to accommodate the various views concerning the scope of an FMCT. His report became a CD-backed consensus proposal known as the Shannon Mandate.

It called for moving forward with the talks without first deciding the issue of fissile material stocks: "[I]t has

been agreed by delegations that the mandate for the establishment of the ad hoc Committee does not preclude any delegation from raising for consideration in the ad Hoc Committee any of the above noted issues [pre-existing stocks and management of fissile material]."⁵ IPFM Draft Treaty To facilitate negotiations when they are finally launched, the International Panel on Fissile Materials (IPFM), of which we are members, decided to produce an alternative to the U.S. draft FMCT. This draft treaty, which may be found on the IPFM Web site,⁶ would prohibit using all or nearly all pre-existing stocks of non-weapons fissile materials for nuclear weapons and include verification. Such a broader treaty is necessary because an FMCT that banned the production of new fissile material for weapons but allowed production of new weapons from the massive existing stocks of civilian excess weapons, and naval fissile material would not effectively cap nuclear arsenals or make reductions irreversible. Because it goes beyond a cutoff of future production, we designate the IPFM draft treaty as a fissile material (cutoff) treaty [FM(C)T].⁷

On the date the treaty entered into force, all fissile material in the civilian sector and any material produced after that date would be subject to safeguards. Some material that had been declared excess for military purposes might not be immediately transferable to the civilian sector because it was still in weapons components.

It could be subjected to International Atomic Energy Agency (IAEA) monitoring,

however, by an approach similar to that of the Trilateral Initiative.

One issue to be addressed early would be the IAEA monitoring of pre-existing stocks of HEU reserved for future naval purposes. This possibility is likely to be resisted fiercely by the British and U.S. nuclear navies. As a result, in the absence of a presidential-level commitment to inclusion, the negotiators may quickly jettison such monitoring. For any HEU newly produced for naval reactors, however, verification arrangements for nondiversion of HEU from naval fuel cycles will have to be developed. The only way to avoid such verification arrangements would be to convert HEU to LEU fuel before the stockpiles of pre-existing HEU are depleted.

For Russia and the United States, existing stocks of excess weapons HEU will last for many decades. Other countries, notably India, could face the need to make HEU for naval fuel much earlier. FMCT Verification

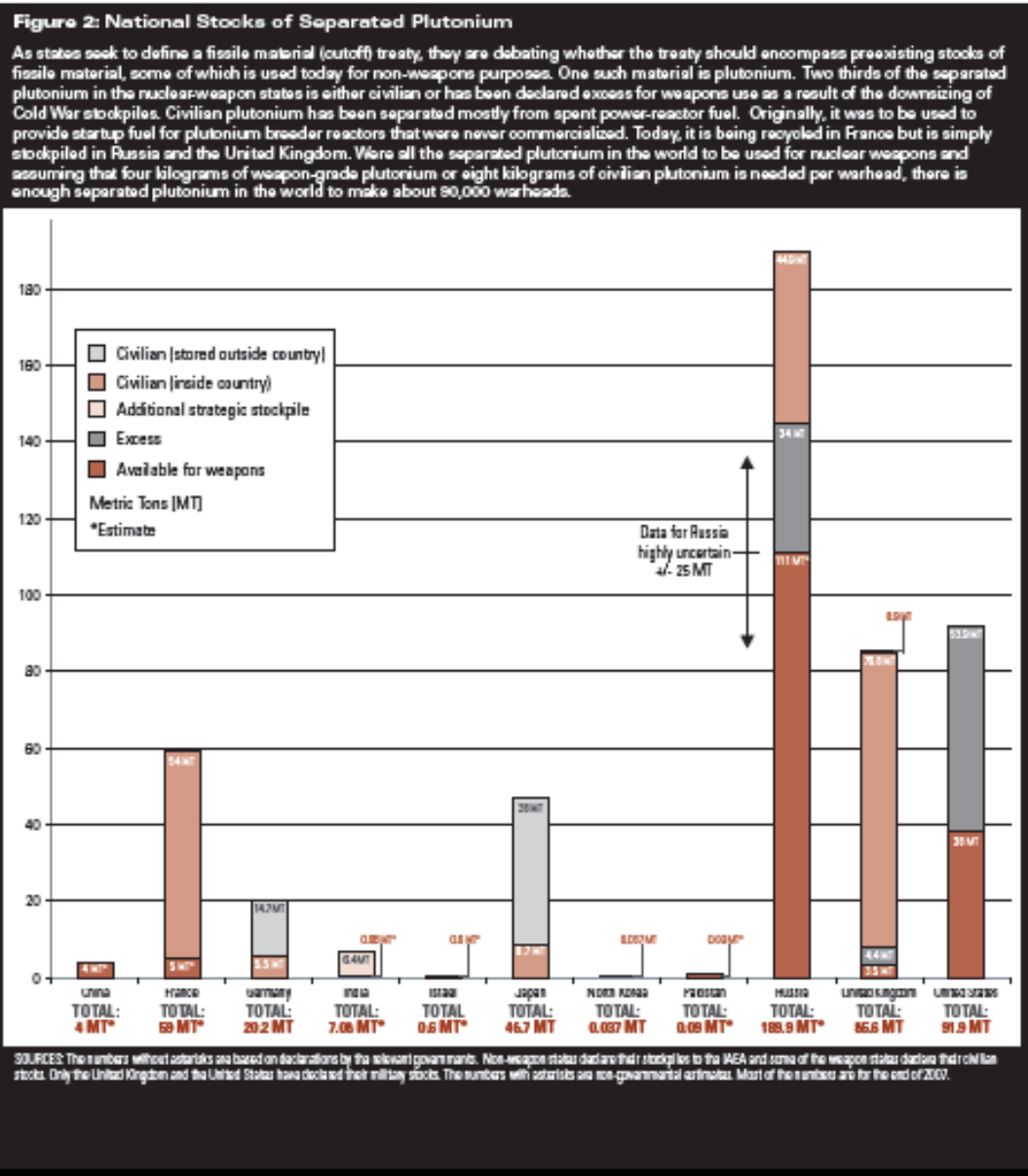
By calling for a verifiable treaty, the Obama administration appears to have rejected the Bush administration's position that an FMCT could not be effectively verified.

The draft FMCT that the Bush administration submitted on May 18, 2006—the only draft FMCT that any government has submitted thus far—did not contain any provisions for international verification.⁸ It was accompanied with a white paper that put forward the administration's position on the verifiability of an FMCT: "[E]ven with extensive verification mechanisms and provisions—so extensive that they could compromise the core national security interests of key signatories, and so costly that many countries would be hesitant to implement them—we still would not have high confidence in our ability to monitor compliance with an FMCT."⁹ The two primary concerns behind this conclusion appear to have been the difficulty of determining without unacceptable intrusiveness that HEU is not being diverted to weapons from the naval-reactor fuel cycle and whether undeclared fissile material production capabilities might be present in nuclear-weapon-related facilities.¹⁰ The discussion of FM(C)T verification that follows therefore begins with these challenges.

and the owner countries should inform the IAEA when they need to withdraw specific amounts for specified propulsion reactors. The IAEA could do a rough check of the reasonableness of these numbers by comparing them with published estimates of the amounts of HEU used in the cores of different types of naval vessels.¹⁶ The IAEA would then verify the amount of HEU being removed from the safeguarded store and shipped to a naval fuel fabrication facility.

The IPFM’s effort has been focused primarily on determining whether it would be possible for the IAEA to verify the amount of HEU coming out of the fuel fabrication facility in the form of fuel in a sealed container. In doing so, we have patterned our approach on that of the Trilateral Initiative within which Russia and the United States discussed with the IAEA from 1996 to 2002 how to monitor the fissile material in excess weapons components until they could be converted to unclassified form. The initiative proposed that the IAEA

monitor plutonium-containing weapon “pits” by measuring the emissions of neutrons and energies of the gamma rays coming out of their containers and then processing the data through a computer “information barrier” that would indicate to the IAEA only whether a container held more than a threshold quantity (e.g., two kilograms) of weapons grade plutonium.¹⁷ For the naval fuel, the question is whether it would be possible for the IAEA to determine the amount of uranium-235 in HEU in a container without determining additional



design information about the fuel (e.g., alloying material, cladding, fuel rod or plate thickness). Our current idea is to shoot a beam of neutrons into the canister holding the fuel and to look for events in which many more neutrons are emitted than could be attributed to a single fission. This would be an indicator of chain reactions and therefore a

nuclear related activities, including, for example, centrifuge research and development and manufacture, and allows the IAEA access to check on the declaration's "correctness and completeness." From mid-July 2003 until February 2006, while Iran was complying voluntarily with the protocol,

instructed the managers at all its sites, and the NRC has similarly instructed the owners of the sites it regulates, to prepare managed access plans in case the IAEA requests an on-site inspection.²⁴ It is very encouraging that even the Bush administration was not inclined to simply invoke the national security exemption at

A broader treaty is necessary because a fissile material cutoff treaty that banned the production of new fissile material for weapons but allowed production of new weapons from the massive existing stocks of civilian, excess weapons, and naval fissile material would not effectively cap nuclear arsenals or make reductions irreversible.

measure of the density of U-235. Work on such an approach has been initiated at Princeton University.¹⁸ A related approach is being pursued at the Oak Ridge National Laboratory.¹⁹

If it is possible to verify the amount of HEU in a fuel container, it will also be necessary to have confidence that the fuel actually is installed in a naval reactor.

This is done routinely by the IAEA for light-water power reactors, where the owner installs the fuel in the presence of IAEA inspectors and then the pressure vessel is closed and sealed by the IAEA. There would be sensitivities, however, about having the IAEA present during the fueling of naval ships and submarines.

The challenge would be similar to that which confronted the negotiators of START when they had to negotiate procedures that would allow verification of the declared number of warheads deployed on strategic missiles. We believe that, as the saying goes, "if there is a [political] will, there is a way."

Challenge Inspections

The other major challenge to FM(C)T verification would be the possibility of undeclared production of HEU or plutonium. The same challenge exists under the NPT. Since the discovery of Iraq's undeclared enrichment program in 1991, the IAEA's capabilities to detect undeclared activities have been strengthened in those states that have ratified versions of the 1997 Model Additional Protocol.²⁰ This protocol requires a country to declare all of its

the IAEA successfully used the access that it provided to resurface activities that Iran had tried to conceal, such as its enrichment experiments at the Kalaye Electric Company.²¹ For the IAEA to be able to detect clandestine fissile material production under an FM(C)T, the nuclear-weapon states would have to agree to something like the Model Additional Protocol. In fact, the United States already has a version of the Model Additional Protocol with the IAEA.²² The U.S. additional protocol is identical to the model for non-nuclear-weapon states except that it contains an added clause (Article 1b) that allows the U.S. government to exclude the IAEA in circumstances where the application of the additional protocol "would result in access by the Agency to activities of direct national security significance to the United States or in connection with locations or information associated with such activities." The United States delayed depositing its instrument of ratification of its additional protocol to the very end of the Bush administration while it worked out in advance how it would handle challenge inspections at every nuclear facility in the United States.²³

Facilities that could conceivably conceal clandestine fissile material production activities are the Energy Department sites where spent fuel reprocessing and uranium-enrichment research and development are carried out and Nuclear Regulatory Commission (NRC)-licensed sites, including those where nuclear fuel is fabricated for naval propulsion reactors. The Energy Department has

all of its military nuclear sites. The Department of Defense, however, has demanded a blanket exemption of all its sites from reporting or inspections under the U.S. additional protocol.²⁵ Hopefully, the Obama administration will reconsider this Pentagon position. Japan and all non-nuclear-weapon states in western Europe have ratified versions of the Model Additional Protocol, which would allow IAEA inspectors to have managed access to their defense facilities.²⁶ The U.S. defense establishment differs from its counterparts only by virtue of having nuclear weapons and nuclear-powered ships, but neither could credibly conceal clandestine fissile material production activities. In any case, all defense-related sites already are subject to challenge inspections under the Chemical Weapons Convention by inspectors of the Organization for the Prohibition of Chemical Weapons (OPCW). IAEA inspectors would be looking for different activities than OPCW inspectors, but the elaborate procedures that have been developed for OPCW inspections would provide useful templates for IAEA inspections of sensitive nuclear sites. One OPCW instrument, for example, a gas-chromatograph mass spectrometer, includes a database that allows inspectors to identify 3,000 specified chemical weapons agents, precursors, and degradation products but no other chemicals. The IAEA is examining instrumentation that could similarly identify surface deposits containing uranium and fluorine, an indicator of the presence of uranium hexafluoride, the chemical form of uranium that is used in

centrifuge enrichment plants, while not revealing the isotopic makeup of the uranium. Similarly, Geiger counters could be used to detect the presence of highly radioactive fission products, an indicator of reprocessing activities, without providing any information about the isotopic composition of any uranium or plutonium that is present.²⁷

Problems With the Focused Approach to Verification Some diplomats have proposed a “focused approach” to verification for an FMCT that only banned new production of fissile materials.²⁸ This would involve IAEA monitoring of only enrichment and reprocessing plants initially. For enrichment plants, if they were determined not to be producing HEU, that would be the end of the story. Plutonium newly separated at reprocessing plants and any newly produced HEU would be subject to IAEA safeguards in storage and through processing into fuel until the fuel was irradiated in a reactor. This focused approach would minimize IAEA inspection costs incurred as a result of an FMCT. It also has attractions for some of the nuclear-weapon states because it would allow them to limit routine entry by IAEA inspectors to facilities into which “new” fissile material had been introduced, i.e., material produced after an FMCT came into force for that country. The cost savings from the focused approach are

often exaggerated, however, because the IAEA inspection effort required to safeguard a reprocessing plant in a non-nuclear-weapon state is about 100 times greater than at a reactor fueled by LEU. In 2007 the IAEA had 924 facilities under safeguards in non-nuclear-weapon states,²⁹ but two reprocessing plants in Japan account for 20 percent of the global IAEA safeguards budget.³⁰ A 1996 Brookhaven study found that just safeguarding reprocessing and enrichment plants would account for two-thirds of the cost of safeguarding all nuclear facilities in the nuclear-weapon states, including 364 power reactors and 419 other facilities such as fuel fabrication facilities and research reactors.³¹ The focused approach would be insufficient in any case for the more extensive treaty we envision, which should capture as much fissile material as possible, not only that newly produced.³² Monitoring existing civilian and weapons excess stocks as well as HEU for naval or other military reactors would require more extensive verification measures.

Of course, the IAEA would have to prioritize, at least while it was building up its capabilities. The highest priority targets should be reprocessing and enrichment plants and facilities with large stocks of fissile materials. Monitoring the fuel cycles of reactors fueled with LEU, i.e., most power reactors and an increasing fraction of

research reactors, should be a lower priority. Two particular challenges for inspectors would be employing safeguards at preexisting reprocessing plants and detecting undeclared HEU production at enrichment plants that produced this material in the past.

Safeguards at Pre-existing Reprocessing Plants

The size of the flow of plutonium through a large commercial reprocessing plant is so large that, if inspectors solely apply mass measurements, a country might well be able to divert enough plutonium for one nuclear bomb or several without being detected. At Japan’s new Rokkasho reprocessing plant, for example, the design throughput is 8,000 kilograms of plutonium per year. With measurement errors on the order of 1 percent, which is 80 kilograms per year, and the “significant quantity” of plutonium required to make a nuclear weapon being eight kilograms or less, the IAEA cannot certify on the basis of measurements alone that a significant quantity has not been diverted. Mass measurements are therefore supplemented with process monitoring to detect anomalous flows and concentrations and with “containment and surveillance” to detect activities that might be associated with diversions. Whether these measures are adequate has been questioned.³³ Furthermore, at pre-existing reprocessing plants, surveillance measures necessarily would be more limited than at a new reprocessing plant, where the IAEA can verify the declared locations of pipes before concrete is poured and install independent measuring instruments in reprocessing cells before high levels of radiation makes them inaccessible.

Shirley Johnson, who oversaw the development, installation, and implementation of IAEA safeguards at Rokkasho, has proposed a design for safeguards at preexisting reprocessing plants that would require real-time declarations of the operations being performed within the plant and input of these declarations into a detailed computer model of the plant’s internal configuration. Inspectors would then compare the predicted flows and concentrations with continuous measurements by automated instrumentation at strategic points and by IAEA inspectors during six to eight random unannounced visits each year. Finally, the plant would be cleaned out annually to check whether, within



Control room of Japan's spent fuel reprocessing plant at Rokkasho, Dec. 21, 2004. The facility has a design throughput of 8,000 kilograms of plutonium per year.

measurement uncertainties, the amount of separated plutonium oxide that came out of the reprocessing plant matched the amount of plutonium measured in the input accountability tank.

By eliminating the costly resident inspection team and on-site safeguards laboratory that account for a major part of the IAEA costs at Rokkasho, Johnson was able to drive estimated IAEA safeguards costs down to about one-fifth of those at the Rokkasho plant, or about \$2 million per year.³⁴ Safeguarding reprocessing plants and the associated fuel fabrication plants for uranium-plutonium mixed-oxide fuel, however, will be problematic under an FM(C)T

just as it is under the NPT. Detecting Undeclared HEU Production at Enrichment Plants A sense of the challenge of safeguarding a large pre-existing enrichment plant to ensure that it is not being used to produce HEU is conveyed by the picture from inside the centrifuge hall of one of Russia's huge centrifuge enrichment plants.

Perhaps the most potent tool the IAEA has to check for HEU production is to take swipes of surfaces and then look for microscopic HEU-containing particles in the dust collected. Yet, three out of four of Russia's existing enrichment plants produced HEU in the past. To our

knowledge, Russia ended HEU production in these facilities in 1987 or 1988. It therefore would be necessary to look for new HEU particles against a background of pre-1988 particles.

Alexander Glaser has done a review of progress in age-dating small particles of HEU and believes that the state of the art has progressed to the point where it should be possible to distinguish new particles from pre-1988 particles.³⁵ This approach would not work for the enrichment plants currently producing HEU in India and Pakistan, but those plants are small. Monitoring the flows and enrichment of uranium hexafluoride within their cascades would be feasible.

Key Countries and a Fissile Material (Cutoff) Treaty

If U.S. negotiators should embark on negotiations on a fissile material (cutoff) treaty (FM(C)T), they will have to keep in mind the quite different perspectives of some of the key countries that would have to be involved in the talks.¹ There are also several related steps that they and representatives from other countries could take to make talks more successful.

First and foremost, bringing about a treaty will require China, India, and Pakistan to decide that they have enough nuclear weapons materials. Indeed, some of the nuclear Nonproliferation Treaty (NPT) nuclear-weapon states question the point of an FM(C)T if non-NPT states India and Pakistan, which are in the process of accelerating the rate at which they are producing fissile material for weapons, refuse to join. France, Russia, the United Kingdom, and the United States have declared that they have ended their production of fissile materials for weapons.

China is believed to have halted its production of fissile material for weapons around 1990 but has not declared a permanent halt because of concerns that U.S. long-range conventional precision-guided missiles and missile defense programs could eventually threaten the deterrence value of China's small ICBM force. If the Obama administration were to reconsider the Bush administration's open-ended and unconditional commitment to strategic missile defense and prompt global strike, that might mitigate China's concerns.

Countries also have differing perspectives on whether a treaty should cover pre-existing materials. For the most part, the nuclear-weapon states want a treaty that simply cuts off further production of fissile material for weapons and does not cover pre-existing stockpiles of fissile materials. The non-nuclear-weapon states, in contrast, want an FM(C)T to serve as a significant step toward the eventual elimination of nuclear weapons. They therefore want a cutoff treaty that includes deep cuts in existing weapons stockpiles, at least in those of Russia and the United States, and would prevent the conversion to nuclear weapons of pre-existing stockpiles of civilian and other fissile material declared excess to weapon needs.

Pakistan is in the camp of countries interested in reductions in existing stocks because it fears that a cutoff treaty could lock it into a position of disadvantage relative to India. Whether Pakistan actually has a significantly smaller stockpile than India, however, depends in large part on whether India's separated reactor-grade plutonium is considered civilian or weapon material. India exempted its separated reactor-grade plutonium and the fuel cycle of its

plutonium-breeder reactor program from international safeguards under the recently approved U.S.-Indian nuclear agreement. It would mitigate Pakistan's concern if India declared these materials civilian and subject to International Atomic Energy Agency (IAEA) safeguards under an FM(C)T.

With regard to verification, all the nuclear-armed states appear to worry to a greater or lesser degree about the intrusiveness and cost of inspections. That makes the "focused approach" to verification of a minimal treaty a lowest-common-denominator compromise. Under this approach, IAEA inspections would focus initially on enrichment and reprocessing plants and then expand only to follow newly produced highly enriched uranium and plutonium until they were irradiated. Much of the value of an FM(C)T would be lost in such a compromise.

Among the nuclear-weapon states, France and the United Kingdom should be the least nervous about international inspections because all their civilian nuclear facilities are already subject to Euratom inspections. The United States has included all of its civilian nuclear facilities in its "voluntary offer" for IAEA inspections, but the IAEA has not had enough funding to mount inspections at more than a very few U.S. facilities of special interest.²

Finally, there is Israel. Its current production rate is not publicly known, and it fears that an FM(C)T would force its nuclear weapons program out of the closet and strengthen pressures on it to disarm. Israel also sees discussion of an FM(C)T as a distraction to the effort to end Iran's uranium-enrichment program.

Given these complexities, negotiations on an FM(C)T could last several years. It would therefore be desirable in the meantime for more countries to join the current voluntary production moratorium and offer their production facilities and major civilian and excess military stocks of fissile materials for voluntary IAEA safeguards. —AREND MEERBURG and FRANK VON HIPPEL

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Conclusion

The work done by the IPFM thus far encourages us to believe that it should be feasible technically for an FMCT to capture under IAEA safeguards pre-existing stocks of fissile material in civilian use, declared excess for military use, and in naval fuel reserves and to verify the treaty about as well as the

NPT can be verified in non-nuclear-weapon states. Such a verified treaty would be a vital building block for further nuclear disarmament measures. The political task of persuading states to agree to such constraints and access, however, may be the more difficult challenge (see previous page). ACT

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14. Senate Committee on Armed Services, "National Defense Authorization Act for Fiscal Year 2009," 110th Cong. 2d sess., 2008, S. Rep. 355, p.515, http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_reports&docid=f:rs335.110.pdf.

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India, Pakistan and the Bomb

The Indian subcontinent is the most likely place in the world for a nuclear war

By M. V. Ramana and A. H. Nayyar

As the U.S. mobilized its armed forces in the aftermath of the terrorist attacks of September 11, the world's attention focused on Pakistan, so crucial to military operations in Afghanistan. When Pakistani president Pervez Musharraf pledged total support for a U.S.-led multinational force on September 14, many people's first thought was: What about Pakistan's nuclear weapons?



JAMIR QURESHI AP Photo/Corbis
THROUGH THE STREETS OF KARACHI, a mock missile is paraded by Pasban, a youth wing of Pakistan's main fundamentalist party, Jamaat-e-Islami. The parade took place in February 1999 on a day of solidarity with Kashmiris in India-administered Kashmir. Such enthusiasm for nuclear weapons is widespread, though not universal, in both India and Pakistan.

Could they fall into the hands of extremists? In an address to his nation, Musharraf proclaimed that the "safety of nuclear missiles" was one of his priorities. The Bush administration began to consider providing Pakistan with perimeter security and other assistance to guard its nuclear facilities.

The renewed concern about nuclear weapons in South Asia comes a little more than three years after the events of May 1998: the five nuclear tests conducted by India at Pokharan in the northwestern desert state of Rajasthan, followed three weeks later by six nuclear explosions conducted by Pakistan in its southwestern region of Chaghai. These tit-for-tat responses mirrored the nuclear buildup by the U.S. and the former Soviet Union, with a crucial difference: the two cold war superpowers were separated by an ocean and never fought each other openly. Neighboring India and Pakistan have gone to war three times since British India was partitioned in 1947 into Muslim-majority and Hindu-majority states. Even now artillery guns regularly fire over the border (officially, a cease-fire line) in the disputed region of Kashmir.

In May 1999, just one year after the nuclear tests, bitter fighting broke out over the occupation of a mountain ledge near the Kashmiri town of Kargil. The twomonth conflict took a toll of between 1,300 (according to the Indian government) and 1,750 (according to Pakistan) lives. For the first time since 1971, India deployed its air force to launch attacks. In response, Pakistani fighter planes were scrambled for fear they might be hit on the ground; air-raid sirens sounded in the capital city of Islamabad.

High-level officials in both countries issued at least a dozen nuclear threats. The peace and stability that some historians and political scientists have ascribed to nuclear weapons-- because nuclear nations are supposed to be afraid of mutually assured destruction--were nowhere in sight. Wiser counsel eventually prevailed. The end of the Kargil clash, however, was not the end of the nuclear confrontation in South Asia. The planned deployment of nuclear weapons by the two countries heightens the risks. With

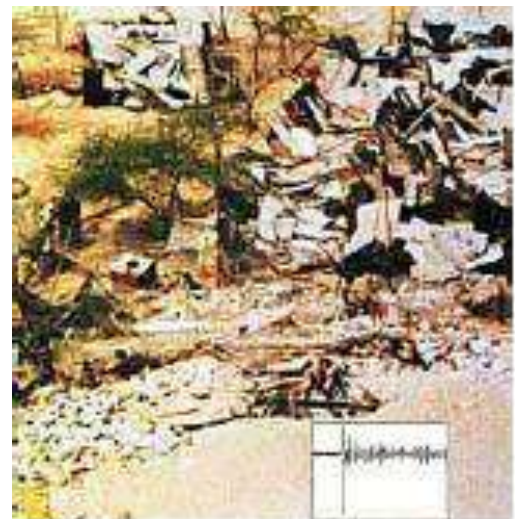
political instability a real possibility in Pakistan, particularly given the conflict in Afghanistan, the dangers have never been so near.

Learning to Love the Bomb

they gained independence from Britain. Understanding this history is crucial in figuring out what to do now, as well as preventing the further proliferation of nuclear weapons. Although the standoff

between Pakistan and India has distinct local characteristics, both countries owe much to other nuclear states.

The materials used in their bombs were manufactured with Western technology; both countries' justifications for joining the nuclear club drew heavily on cold war thinking. The continued reliance of the U.S. and Russia on thousands of nuclear weapons on hair-trigger alert only adds to the perceived need for nuclear arsenals in India and Pakistan. While setting up the Indian Atomic Energy Commission (IAEC) in 1948, Jawaharlal Nehru, India's



AP Photo: TERRY C. WALLACE University of Arizona (inset)

UNDERGROUND NUCLEAR EXPLOSIONS

conducted by India on May 11, 1998, caused the surface immediately above to collapse. Seismic readings (inset) suggest that the total explosive yield was between 16 and 30 kilotons, about half of what India claimed.

first prime minister, laid out his desire that the country "develop [atomic energy] for peaceful purposes." But at the same time, he recognized that "if we are compelled as a nation to use it for other purposes, possibly no pious sentiments will stop the nation from using it that way." Such ambivalence remained a central feature of India's nuclear policy as it developed. To Indian leaders, the program symbolized international political clout and technological modernity. Over the next two decades, India began to construct and operate nuclear reactors, mine uranium, fabricate fuel and extract plutonium. In terms of electricity produced, these activities often proved uneconomical--hardly, one might think, where a developing nation should be putting its resources. Politicians and scientists justified the nuclear program on the grounds that it promoted self-sufficiency, a popular theme in postcolonial India. Rhetoric aside, India solicited and received ample aid from Canada, the U.S. and other countries.

After India's defeat in the 1962 border war with China, some right-wing politicians issued the first public calls for developing a nuclear arsenal. These appeals became louder after China's first nuclear test in 1964. Countering this bomb lobby were other prominent figures, who argued that the economic cost would be too high. Many leading scientists advocated the bomb. Homi Bhabha, the theoretical physicist who ran the IAEA, claimed that his organization could build nuclear weapons "within 18 months." Citing a Lawrence Livermore National Laboratory report, Bhabha predicted that nuclear bombs would be cheap. He also promised economic gain from "peaceful nuclear explosions," which many American nuclear researchers extolled for, say, digging canals.

In November 1964 Indian prime minister Lal Bahadur Shastri compromised, permitting the commission to explore the technology for such an explosion. It turned out that Bhabha had already been doing some exploring. In 1960 he reportedly sent Vasudev Iya, a young chemist, to France to absorb as much information as he possibly could about how polonium--a chemical element used to trigger a nuclear explosion--was prepared. Bhabha died in 1966, and design work on the "peaceful" device did not begin for another two years. But by the late 1960s, between 50 and 75 scientists and engineers were actively developing weapons. Their work culminated in India's first atomic test--the detonation on May 11, 1974, of a plutonium weapon with an explosive yield of five to 12 kilotons. For comparison, the bomb dropped on Hiroshima had a yield of about 13 kilotons.

Nuclear Tipping Point

The 1974 test was greeted with enthusiasm within India and dismay elsewhere. Western countries cut off cooperative efforts on nuclear matters and formed the Nuclear Suppliers Group, which restricts the export of nuclear technologies and materials to nations that refuse to sign the 1968 Nuclear Non-Proliferation Treaty, including both India and Pakistan.

In the years that followed, the bomb lobby pushed for tests of more advanced weapons, such as a boosted-fission design and a hydrogen bomb. It appears that in late 1982 or early 1983, Prime Minister Indira Gandhi tentatively agreed to another test, only to

change her mind within 24 hours. One of the causes for the volte-face is said to have been a conversation with the Indian foreign secretary, whom an American official had confronted with satellite evidence of preparations at the test site. The conversation seems to have convinced Gandhi that the U.S. reaction would create economic difficulties for India. Instead, it is reported, she wanted to "develop other things and keep them ready."

The "other things" she had in mind were ballistic missiles. In 1983 the Integrated Guided Missile Development Program was set up under the leadership of Abdul Kalam, a renowned rocket engineer. This followed an earlier, secret attempt to reverse-engineer a Soviet anti-aircraft missile that India had purchased in the 1960s. Although that effort did not succeed, it led to the development of several critical technologies, in particular a rocket engine. Kalam adopted an open management style--as compared with the closed military research program--and involved academic institutions and private firms. Anticipating restrictions on imports, India went on a shopping spree for gyroscopes, accelerometers and motion simulators from suppliers in France, Sweden, the U.S. and Germany.

In 1988 India tested its first short-range surface-to-surface missile. A year later came a medium-range missile; in April 1999, a longer-range missile. The latter can fly 2,000 kilometers, well into the heart of China. Despite this ability, India is unlikely to achieve nuclear parity with China. According to various estimates, China has 400 warheads and an additional 200 to 575 weapons' worth of fissile material. If India's plutonium production reactors have been operating on average at 50 to 80 percent of full power, India has somewhere between 55 and 110 weapons' worth of plutonium [see illustration]. The stockpile could be much larger if commercial reactors earmarked for electricity

generation have also been producing plutonium for weapons.



B. K. BANQASH AP Photo (Khan); Courtesy of Bhabha Atomic Research Center (Bhabha)

FATHERS OF THE ATOMIC BOMBS: A. Q. Khan (left) set up the Kahuta centrifuge plant, which produces the uranium used in Pakistan's bombs. Homi Jehangir Bhabha (right), a theoretical physicist educated at the University of Cambridge, laid the groundwork for India's nuclear capability.

Eating Grass

Pakistan's nuclear program drew on a general desire to match India in whatever it does. The country set up its Atomic Energy Commission in 1954, began operating its first nuclear research reactor in 1965 and opened its first commercial reactor in 1970.

As scientific adviser to the government, physicist Abdus Salam, who later won the Nobel Prize in Physics, played an important role.

The program was severely handicapped by a shortage of manpower. In 1958 the commission had only 31 scientists and engineers; it was run by Nazir Ahmad, the former head of the Textile Committee. The commission pursued an active program of training personnel by sending more than 600 scientists and engineers to the U.S., Canada and western Europe. With generous

help from these countries, some of which also aided India, Pakistan had a few nuclear research laboratories in place by the mid-1960s.

After the 1965 war with India, many Pakistani politicians, journalists and scientists pressed for the development of nuclear weapons. The most prominent was Foreign Minister Zulfikar Ali Bhutto, who famously declared that if India developed an atomic bomb, Pakistan would follow "even if we have to eat grass or leaves or to remain hungry." After Pakistan's defeat in the December 1971 war, Bhutto became prime minister. In January 1972 he convened a meeting of Pakistani scientists to discuss making bombs.

As the first prong of their two-pronged effort to obtain weapons material, researchers attempted to purchase plutonium reprocessing plants from France and Belgium. After initially agreeing to the sale, France backed down under American pressure. But a few Pakistani scientists did go to Belgium for training in reprocessing technology. Returning to Pakistan, they constructed a small-scale reprocessing laboratory in the early 1980s. Using spent fuel from a plutonium production reactor that opened in 1998, this lab is capable of producing two to four bombs' worth of plutonium annually.

As the second prong, researchers explored techniques for enriching uranium--that is, for concentrating the bomb-usable isotope uranium 235. In 1975 A. Q. Khan, a Pakistani metallurgist who had worked at an enrichment plant in the Netherlands, joined the group. With him came classified design information and lists of component suppliers in the West, many of which proved quite willing to violate export-control laws [[click here](#)]. Success came in 1979 with the enrichment of small quantities of uranium. Since then, Pakistan is estimated to have produced 20 to 40 bombs' worth of enriched uranium. Every year it produces another four to six bombs' worth.

By 1984 designs for aircraft-borne bombs were reportedly complete. Around this time, some American officials started alleging that China had given Pakistan the design for a missile-ready bomb. China and Pakistan have indeed exchanged technology and equipment in several areas, including those related to nuclear weapons and missiles. For example, it is believed that Pakistan has imported short-range missiles from China. But the accusation that China supplied Pakistan with a weapons design has never been substantiated. And understandably, Pakistan's nuclear scientists have denied it.



Courtesy of SPACE IMAGING

KHUSHAB NUCLEAR REACTOR in Pakistan produces a few bombs' worth of plutonium every year. Based on the size of the cooling towers visible in this Ikonos commercial satellite image, nuclear analysts estimate that the reactor generates about 50 megawatts of heat.

In spring 1990 events in Kashmir threatened to erupt into another full-scale war. According to a 1993 New Yorker article by American journalist Seymour M. Hersh, U.S. satellites detected a convoy of trucks moving out of Kahuta, Pakistan's uranium-enrichment facility, toward an air base where F-16 fighter jets stood ready. Hersh reported that American diplomats conveyed this information to India, which recalled the troops it had amassed at the border. But the overwhelming opinion among scholars who have analyzed these claims is that Pakistan never contemplated the use of nuclear weapons; experts are also skeptical that U.S. satellites ever detected the claimed movement. Nevertheless, the Pakistani bomb lobby has used the allegations to assert that nuclear weapons protect the country from Indian attack. In India, officials have never acknowledged Hersh's story; it would be an admission that Pakistan's nuclear capability had neutralized India's conventional military advantage.

"Now I Am Become Death"

Further buildup of nuclear capabilities in both countries took place against a background transformed by the end of the cold war. Superpower arsenals shrank, and the Comprehensive Test Ban Treaty, which prohibits explosive tests, was negotiated in 1996. But the five declared nuclear states--the U.S., Russia, Britain, France and China--made it clear that they intend to hold on to their arsenals. This ironic juxtaposition strengthened the bomb lobbies in India and Pakistan.

Domestic developments added to the pressure. India witnessed the rise of Hindu nationalism. For decades, parties subscribing to this ideology, such as the Bharatiya Janata Party (BJP), had espoused the acquisition of greater military capability--and nuclear weapons. It was therefore not surprising that the BJP ordered nuclear tests immediately after coming to power in March 1998.

The Indian tests, in turn, provided Pakistani nuclear advocates with the perfect excuse to test. Here again, religious extremists advocated the bomb. Qazi Hussain Ahmad of the Jamaat-e-Islami, one of the largest Islamist groups in Pakistan, had declared in 1993: "Let us wage jihad for Kashmir. A nuclear-armed Pakistan would deter India from a wider conflict." Meanwhile the military sought nuclear weapons to counter India's vastly larger armed forces.

This lobbying was partially offset by U.S. and Chinese diplomacy after India's tests. In addition, some analysts and activists enumerated the ill effects that would result from the economic sanctions that were sure to follow any test. They suggested that Pakistan not follow India's lead--leaving India to face international wrath alone--but to no avail. Three weeks after India's blasts, Pakistan went ahead with its own tests.

Bombast notwithstanding, the small size of seismic signals from the tests of both countries has cast doubt on the declared explosive yields [see illustration at top]. The data released by the Indian weapons establishment to support its claims are seriously deficient; for example, a graph said to be of yields of radioactive by-products

has no units on the axes. Independent scientists have not been able to verify that the countries set off as many devices as they profess.

Whatever the details, the tests have dramatically changed the military situation in South Asia. They have spurred the development of more advanced weapons, missiles, submarines, antiballistic missile systems, and command-and-control systems. In August 1999 the Indian Draft Nuclear Doctrine called for the deployment of a triad of "aircraft, mobile land-missiles and sea-based assets" to deliver nuclear weapons. Such a system would cost about \$8 billion. This past January the Indian government declared that it would deploy its new long-range missile. A month later the Pakistani deputy chief of naval staff announced that Pakistan was thinking about equipping at least one of its submarines with nuclear missiles.

Critical Mass



of light. They will therefore keep their fingers close to the button or authorize others, geographically dispersed, to do so. Broadly speaking, there are two scenarios.

The first postulates that India crosses some threshold during a war--its troops reach the outskirts of Lahore or its ships impose a naval blockade on Karachi--and Pakistan responds with tactical nuclear weapons as a warning shot. The other scenario supposes that under the same circumstances, Pakistan decides that a warning shot would not work and instead attacks an Indian city directly. In 1998 one of us (Ramana) conducted the first scientific study of how much damage a modest, 15-kiloton bomb dropped on Bombay would cause: over the first few months, between 150,000 and 850,000 people would die.

The Indian military is already preparing for these eventualities. This past May it carried out its biggest exercises in more than a decade, called Operation Complete Victory. Tens of thousands of troops, backed by tanks, aircraft and attack helicopters, undertook drills close to the border with Pakistan. The stated aim was to train the armed forces to operate in an "environment of chemical, biological and nuclear assault" and "to teach the enemy a lesson once and for all." In one significant exercise, the military had to "handle a warlike situation wherein an enemy aircraft is encountered carrying a nuclear warhead." Abdul Kalam, head of India's missile program, said that India's nuclear weapons "are being tested for military operations ... for training by our armed forces."

Even before September 11, South Asia had all the ingredients for a nuclear war: possession and continued development of bombs and

missiles, imminent deployment of nuclear weapons, inadequate precautions to avoid unauthorized use of these weapons, geographical proximity, ongoing conflict in Kashmir, militaristic religious extremist movements, and leaders who seem sanguine about the dangers of nuclear war.

The responses of India and Pakistan to the events of September 11 and the U.S.-led attack on targets in Afghanistan reflect the strategic competition that has shaped much of their history. India was quick to offer air bases and logistical support to the U.S. military so as to isolate Pakistan. Attempting to tie its own problems in Kashmir with the global concern about terrorism, Indian officials even threatened to launch attacks on Pakistani supply lines and alleged training camps for militants fighting in Kashmir. Pakistan, for its part, realizing both the geopolitical advantage it possessed and the dangers of civil instability, deliberated before agreeing to provide support to fight the Taliban. The diplomatic machinations, war in Afghanistan and violence in Kashmir may well have worsened the prospects for peace on the subcontinent. The lifting of American sanctions, which had been imposed in the 1990s, freed up resources to invest in weapons.

The limitations of Western nonproliferation policy are now painfully obvious. It has relied primarily on supply-side export controls to prevent access to nuclear technologies. But Pakistan's program reveals that these are inadequate. Any effective strategy for nonproliferation must also involve demand-side measures--policies to assure countries that the bomb is not a requisite for true security. The most important demand-side measure is progress toward global nuclear disarmament. Some people argue that global



AP PHOTO

DONNING THE MASK OF DEATH and bearing the Indian flag, protesters gather outside the Pakistani Embassy in New Delhi after Pakistan's nuclear tests in 1998. Some are holding up baby bottles to mock Pakistan as an infant nation. It is not known whether the same protesters had objected to India's own nuclear tests several weeks earlier.

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disarmament and nonproliferation are unrelated. But as George Perkovich of the W. Alton Jones Foundation in Charlottesville, Va., observed in his masterly study of the Indian nuclear program, that premise is "the grandest illusion of the nuclear age." It may also be the most dangerous.

Nuclear Terrorism: How It Can Be Prevented

By Lawrence S. Wittner

*Dr. Wittner is Professor of History at the State University of New York/Albany. His latest book is *Confronting the Bomb: A Short History of the World Nuclear Disarmament Movement* (Stanford University Press)*

The recent furor over an unsuccessful terrorist attempt to blow up an airliner is distracting us from considering the possibility of a vastly more destructive terrorist act: exploding a nuclear weapon in a heavily-populated area.

Such a disaster -- which would kill hundreds of thousands of people -- is not a remote possibility at all. Although terrorist groups do not have the fissile material (that is, material capable of sustaining a nuclear chain reaction) necessary to build nuclear weapons on their own, they have been trying to obtain such weapons, either by purchase or theft, for decades. According to the U.S. government, Osama bin Laden sought to acquire nuclear weapons at least since 1992. Not only have there been dozens of thefts and sales of fissile material to potential terrorists (all of whom were supposedly arrested), but a significant number of nuclear weapons have been "lost" by nuclear-armed nations. In addition, if either nuclear

weapons or fissile material were available to overseas terrorists, it would not be very difficult to smuggle them into the United States.

In 2004, when Dr. Graham Allison -- founding dean of Harvard's Kennedy School of Government and a former top Pentagon official -- published his classic study, *Nuclear Terrorism: The Ultimate Preventable Catastrophe*, he argued that if governments continued their past policies, a nuclear terrorist attack was inevitable. The problem, as he saw it, reflected a combination of terrorist activity, the ease of smuggling weapons across U.S. borders, and the accessibility of nuclear weapons and fissile materials.

Unfortunately, not much has changed since that time. Terrorism, of course, shows no sign of disappearing. Even if the "war on terror" produced a significant decline in terrorism (which it shows no sign of doing) and even if proper intelligence and police work reduced the number of terrorist activities, some terrorist acts almost certainly would continue, as they have for centuries. Furthermore, as we have seen in the case of immigration, securing U.S. borders is not an easy task, and perfect security seems unlikely to be obtained.

But what about the third leg of the problem: the accessibility of nuclear weapons and fissile materials? Not much has been done about this. But a lot could be done.

Allison focused particularly on securing fissile material. As he put it: "No fissile material, no nuclear explosion, no nuclear terrorism. It is that simple." He explained:

"There is a vast -- but not unlimited -- amount of it in the world, and it is within our power to keep it secure." Actually, in recent years there has been a tightening up of governmental controls over fissile material. Also, there has been significant interest by the U.S. government and others in negotiating a Fissile Material Cutoff Treaty, which would ban the production of fissile material for nuclear weapons. During the 2008 presidential campaign, both Barack Obama and John McCain endorsed such a treaty, and since then both have spoken out in favor of it.

Then, of course, there is the possibility of eliminating the vast stockpiles of nuclear weapons accumulated by nine nations. At the moment, there are some 23,000 nuclear weapons in existence (mostly in Russia and the United States) -- ripe pickings for any would-be mass murderer. Any significant reduction in their number would significantly reduce the opportunities for nuclear terrorism. And their elimination would wipe out these

opportunities entirely. To draw upon Allison's phrasing: no nuclear weapons, no nuclear explosion, no nuclear terrorism.

Of course, there are other good reasons to eliminate nuclear weapons, as well, including the danger of nuclear war. Doubtless this point will be on the minds of many government officials and citizens alike as the world prepares for the nuclear Non-Proliferation Treaty review conference this coming May, at the United Nations. The U.N. conference will consider the treaty pledges of non-nuclear nations to forgo nuclear weapons and the treaty pledges of nuclear nations to divest themselves of these implements of mass destruction.

Even so, the ongoing danger of nuclear terrorism provides yet another reason to rid the world of fissile material and its final, terrible product, nuclear weapons. Let's not forget that.



In The News

Despite Challenges In 2009, Progress On Proliferation

by Mike Shuster *January 1, 2010*

copywrite: NPR

The most recent issue of the journal *Foreign Affairs* raises the question of whether the nuclear order is on the verge of collapse.

The pessimists cite North Korea and Iran, and conclude that events of the past year have seriously undermined international efforts to stem the spread of nuclear weapons.

But seen through the prism of history, the state of nuclear proliferation may not be all that dire.

President Obama made it clear early in his presidency that containing the spread of nuclear weapons was one of his most important goals.

In April in Prague, he outlined a vision of a world without nuclear weapons, and committed his administration to pursuing that goal.

But at that very moment, North Korea tested a long-range missile and was threatening another underground nuclear test, prompting the president to strike a tough tone about nations that violate the nonproliferation norm.

"Rules must be binding. Violations must be punished. Words must mean something," Obama said.

Only a few weeks later, North Korea did conduct its second underground nuclear explosion.

A challenge has also come from Iran. In September, Obama revealed that Iran was building a secret

uranium-enrichment facility, sharpening suspicions that Tehran is indeed seeking a covert nuclear weapons capability.

Progress Despite North Korea, Iran So, the year 2009 has been a dismal one for the international regime of nuclear arms control. Or has it? asks Joshua Pollack, who writes for the Web site ArmsControlWonk.com.



This image made from North Korean KRT video footage shows the launch of a long-range missile April 5 in Musudan-ri, North Korea.

"One way to look at it a little differently is not that the regime is cracking or that the regime is failing, but that the regime has succeeded in retarding the pace of proliferation and continues to do so, but isn't going to catch everything," he says.

Since the first atomic bomb was detonated in 1945, the past decade has seen the fewest nuclear tests of any comparable period, notes Michael Krepon, president emeritus of the Stimson Center in Washington.

"Never before have there been so few nuclear tests as in this past decade. This is a norm. It can still be broken. But the country that breaks the norm does not gain points. It loses standing," he says.

Negotiations With Russia

The concerns of the Obama administration are wider than Iran and North Korea. The president also wants to see a dramatic reduction in the number of nuclear warheads deployed by the U.S. and Russia. Secretary of State Hillary Clinton made that clear in a speech she gave in Washington in October.

"Clinging to nuclear weapons in excess of our security needs does not make the United States safer. And the nuclear status quo is neither desirable nor sustainable. It gives other countries the motivation — or the excuse — to pursue their own nuclear options," she said.

The administration concluded that the way to pursue those goals is through new arms control negotiations with Moscow, a mechanism largely ignored by the administration of George W. Bush. But there is a big problem: The START treaty expired on Dec. 5, 2009.



Joe Cirincione, president of the Ploughshares Fund

"Our American partners are building missile defense systems, as is known, and we are not. If we do not develop [anti-ballistic missile] systems, then a threat appears. Because having created such an umbrella, our partners may feel completely protected and will do what they want. Aggressiveness will surge," Putin said.

To preserve balance, Putin added, Russia will need to develop additional offensive weapons. That could jeopardize the efforts to reduce deployed nuclear

The treaty, signed in 1991 by then-Soviet leader Mikhail Gorbachev and President

George H.W. Bush, was the first and most important treaty that began the process of nuclear reductions at the end of the Cold War.

Before the deadline, the U.S. and Russia tried but failed to negotiate a new treaty.

Nonetheless, there is much to be optimistic about, says Joe Cirincione, president of the Ploughshares Fund, a grant-making foundation that funds initiatives to prevent the spread and use of nuclear weapons.

"The overall climate is so much improved, and the overall effort to just dramatically reduce nuclear weapons and increase the transparency gives us lots of assurances," he says.

The U.S. and Russia are still negotiating, but there are some significant problems. For the Russians, the big issue is American missile defenses. Russian Prime Minister Vladimir Putin made it clear this week that he sees U.S. missile defenses as a threat to Russia's nuclear deterrent.

warheads. Right now, both the U.S. and Russia have set a target of about 1,600 if there is a new treaty.

Focus On Proliferation In 2010

For some arms control advocates and for other nations, that number is still too high and the process far too slow. Krepon says reductions in nuclear warheads must come carefully and incrementally.

"You don't get to deep cuts in nuclear forces, and you don't get to zero, without having a strong, credible nuclear deterrent. If the deterrent is not safe and secure and credible along this long journey, there will be great disruption," he says.

Next year will be a crucial one. The Obama administration plans to focus even more attention on nuclear proliferation in 2010, with a global conference on the subject scheduled for April.



Coalition for Peace Action NEWS



Adoption of the Draft Resolution on Nuclear Disarmament Submitted by Japan to the United Nations General Assembly

December 3, 2009

[Japanese](#)

1. On December 3 (Thu) (December 2 U.S. time) the 64th session of the United Nations General Assembly adopted the draft resolution on nuclear disarmament ("Renewed determination towards the total elimination of nuclear weapons") which the Government of Japan submitted along with a record number of 87 co-sponsor nations. The draft resolution was adopted by an overwhelming majority of 171 in favor to 2 againsts (the DPRK and India), with 8 abstentions (China, France, Iran, Israel, Myanmar, Pakistan, Cuba, Bhutan).
2. Considering the recent growing momentum for nuclear disarmament and non-proliferation, this year's draft resolution aims to share widely the determination for "a world without nuclear weapons" with an extensive number of UN member states. It also refers to the UN Security Council Summit on Nuclear Non-proliferation and Nuclear Disarmament that was held on September 24, as well as the importance of preventing nuclear terrorism. In addition, it incorporates a high evaluation of the constructive role of civil society in the field of nuclear disarmament and non-proliferation.
3. This resolution is one of the leading proactive measures toward nuclear disarmament and non-proliferation announced by Mr. Yukio Hatoyama, Prime Minister of Japan, at the UN Security Council Summit held in September 2009. As the only nation that has suffered from atomic bombings, Japan will strive through the concrete measures listed in this resolution in order to win even broader understanding of and support to its vision of realizing a peaceful and safe "world without nuclear weapons".

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UN chief presents next steps to rid world of nuclear weapons

Editor: Han Jingjing

UNITED NATIONS, Dec. 8 (Xinhua) -- Highlighting recent progress in efforts to achieve nuclear disarmament and non-proliferation, UN Secretary-General Ban Ki-moon Tuesday urged nations to build on the momentum, laying out a number of steps to move the process forward.

Speaking at a meeting in New York focusing on his five-point action plan to rid the world of nuclear weapons, the secretary-general cited "encouraging" developments over recent months, including the renewed commitment by the leaders of the United States and Russia, a breakthrough in the Conference on Disarmament, and the "historic" Security Council summit in September.

"We need to sustain this momentum, and build on it," he stated, noting that the review conference for the Nuclear Non-Proliferation Treaty (NPT), to be held in May 2010, is just a few months away. "Now is the time."

The secretary-general's action plan, presented in October 2008, begins with a call for the parties to the NPT to pursue negotiations on nuclear disarmament, either through a new convention or through a series of mutually reinforcing instruments backed by a credible system of verification.

In addition, it is based on the following key principles: that disarmament must enhance security; be reliably verified; be rooted in legal obligations; be visible to the public; and must anticipate emerging dangers from other weapons.

"My Action Plan on Nuclear Disarmament and Nuclear Non-proliferation is founded on a fundamental principle: nuclear disarmament and nuclear non-proliferation are mutually reinforcing and inseparable," Ban said. "They should be pursued in tandem."

To build on recent momentum and "move the ball forward," Ban urged States to facilitate the adoption of agreed measures on nuclear disarmament and non-proliferation, and encouraged them to consider the proposal by Costa Rica and Malaysia for a nuclear weapon convention.

Second, noting that the Security Council Summit should not be a one-time event, he encouraged the 15-member body to meet annually, at the Foreign Minister level, to discuss nuclear non-proliferation and nuclear disarmament.

"The Council's nuclear-weapon States might also wish to consider the adoption of a joint declaration for the 2010 NPT Review Conference addressing nuclear disarmament issues," he said.

He also called for greater efforts to advance the rule of law in the field of disarmament, and to enhance transparency and accountability. Lastly, he called for complementary measures while pursuing nuclear disarmament.

"The world should pursue several related measures, including eliminating others weapons of mass destruction; combating WMD (weapons of mass destruction) terrorism; and bans on missiles, space weapons," he said. "We also must not lose sight of conventional weapons disarmament."

In addition, he encouraged member states to consider convening a session of the General Assembly to examine the impact of armed violence on development at next September's summit meeting on the set of anti-poverty targets known as the Millennium Development Goals (MDGs).

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Obama presses review of nuclear strategy

Pentagon is rethinking the unthinkable: Making major changes to Cold War arsenal

By Bryan Bender, Boston Globe Staff | January 3, 2010

CHARLIE MISSILE ALERT FACILITY, Mont. - After an hourlong ride down a nearly deserted highway covered in ice and snow, the two young officers arrive for their shift at this highly secure outpost deep in the northern Rockies.

Air Force Captain Chris Ferrer and Lieutenant Moses George, carrying a bulky orange briefcase of secret codes, descend some 75 feet underground to a capsule protected by a 4-foot-thick door of steel and concrete. They will spend the next 24 hours ready to receive a presidential command to launch dozens of nuclear missiles from silos buried across north-central Montana.

It is a routine that is virtually unchanged from the 1960s. The targets, most of them in Russia, also remain largely unchanged from the Cold War. And there are few signs that will change anytime soon. "We're not going anywhere for decades to come," predicted the two officers' boss, Lieutenant Colonel Pete Bonetti, 41, of Providence.

But top US officials are now questioning why the United States still pursues a strategy based on the ability to annihilate its former foe. In a thorough review expected to be completed early this year, the size, structure, and even the very mission of America's nuclear arsenal are being reconsidered as part of President Obama's pledge to reduce the role of the world's most deadly weapons.

Obama has already reached a tentative agreement with Russia to reduce the number of warheads on both sides from about 2,200 to between 1,500 and 1,675 in the next several years, while also slashing the missiles and submarines designed to carry them to between 500 and 1,000. The so-called Nuclear Posture Review, led by the Pentagon, could recommend going even further, to 1,000 warheads or fewer, top administration officials have told Congress.

The review is shaping up to be a major showdown for Obama this year. It is taking on some of the most sacred cows of the nuclear program. For the first time, influential voices, including a former top nuclear commander and senior Obama advisers, are proposing that one leg of the nuclear arms "triad" - a \$30 billion-a-year enterprise made up of land-, air-, and sea-based weapons - be eliminated.

Another historic change under consideration is adopting a "no-first-use" policy, a public declaration stating the United States would not use nuclear weapons first, a step long advocated by arms control advocates who believe it would reduce the incentive for other nations to develop nuclear weapons.

Also on the table, the officials say, is explicitly limiting the nuclear arsenal's mission to deterring other nuclear weapons - not chemical or biological attacks or halting a massive conventional military assault, as current policy stipulates.

"The US-Soviet standoff that gave rise to tens of thousands of nuclear weapons is over, but the policies developed to justify their possession and potential use remain largely the same," said Daryl Kimball, executive director of the Arms Control Association, a Washington think tank and leading advocate of disarmament. "Unless the United States reduces its reliance and emphasis on nuclear weapons, other states will have a cynical excuse to pursue or to improve the capabilities and size of their nuclear forces."

Potential threats studied The review is assessing the potential threats over the next decade that would require nuclear weapons, seeking to match the arsenal and strategy to emerging dangers like North Korea, a rising China, and nuclear terrorism - and away from the far less likely massive nuclear exchange with Russia, according to several administration officials who are familiar with the review. Unlike the last nuclear weapons review, conducted in 2001 by the Bush administration, it is intended "to provide a basis" for future arms reductions, according to the Pentagon.

Yet as a recent visit to several nuclear bases demonstrated, the nuclear weapons enterprise is one of the most entrenched in the national security bureaucracy. Strong opposition to major changes is building in the Pentagon and Congress as military officers and defense contractors with a major stake prepare to fight deep cuts to land-based nuclear weapons or the fleet of nuclear bombers, the mostly likely targets of reduction, according to interviews with current and former commanders, top officials, and leading specialists.

Many also express fear that reducing the arsenal too much will be destabilizing at a time when Russia, China, and other nations are modernizing their inventories of nuclear weapons and the United States is not. "There is no broad-based consensus in the policy community on how important US nuclear weapons are to US security in the post-9/11 era," said Clark Murdock, a former strategic planner at the Pentagon who is now a senior adviser at the nonpartisan Center for Strategic and International Studies in Washington. "During the Cold War few disputed that nuclear weapons were a core component of US national security."

Submarines favored The ability of a behemoth submarine like the USS Maryland to disappear beneath the waves makes it and 13

other Navy “boomers,” capable of carrying 24 Trident nuclear missiles each, the least likely to be recommended for cuts, military officials and private analysts said.

Nearly 600 feet long and four stories high, the “Fighting Mary” was impossible to miss when it was docked at the mouth of the St. Mary’s River in southeastern Georgia in late November. But enemies have almost no way of knowing its location after it leaves port, making the sub nearly invulnerable to attack. And it can remain at sea for extended periods: Last year, over several deployments, the Maryland was underway a total of nearly nine months out of the year.

“They get underway and disappear for all intents and purposes,” Rear Admiral Barry Brunner, commander of Submarine Group 10, said in a recent interview at his headquarters in Kings Bay, Ga.

At any given time, four of the subs are on patrol, two of them ready in under an hour to launch their missiles at targets as far as 4,000 miles away. Six are stationed in Georgia, eight in Washington State.

Some arms control groups believe US security interests could be met with fewer submarines and various studies have recommended as few as eight or nine, which would save billions of dollars. Already the Navy has plans to reduce the fleet to 12 by 2030 as it replaces the submarines with a new model.

But for war planners, they also bring more bang for the buck. Under the terms of the proposed treaty with Russia, each submarine and its 24 Trident missiles would count as only one “delivery system,” unlike the land-based missiles, which each count toward the total allowed.

A recent study by the Air Force Association, the main advocacy group for the Air Force and not traditionally the biggest Navy booster, concluded that if the United States were to choose to deploy its nuclear weapons on only one platform, it should keep the submarines. It was a remarkable statement given the traditional of interservice rivalries in among the branches of the military.

Bombers could go The Air Force’s 114 long-range nuclear bombers - including the B-52 and B-2 stealth bombers and more than 1,000 nuclear missiles - are believed to be the most vulnerable of the three legs of the triad.

Some former commanders and a growing number of specialists contend they have far less military value now that an all-out nuclear war with Russia is unlikely. Among them is retired General Eugene Habiger, former commander of the US Strategic Command, which oversees all US nuclear weapons, and the man who until 1998 was responsible for America’s nuclear war plan. “I would recommend giving up the bomber leg,” he said in an interview.

The bomber force emerged with the dawn of the nuclear age, when a pair of B-29 bombers dropped the atomic bombs on Japan in the closing days of World War II, destroying Hiroshima and Nagasaki and killing hundreds of thousands of people. After 1945, bombers were the sole element of America’s nuclear deterrent, until intercontinental ballistic missiles and nuclear-armed submarines were introduced in 1959.

Their crews are still ready to be in the air within hours, officials said, though the exact time needed to launch them is classified.

“We still maintain the same capacity we had during the Cold War,” said Colonel Steven Basham, commander of the Second Bomb Wing at Barksdale Air Force Base in Louisiana.

But sustaining the bomber leg will require billions of dollars in new investments, according to the Air Force. The B-52s, which make up the majority of the bomber fleet, are more than four decades old. The bombers used by Basham’s Second Bomb Wing were built in 1960 and 1961. The cruise missiles carried by the B-52s first came into service in 1962 and there is no plan for a replacement.

There are other drawbacks. The recent study published by the Air Force Association concluded that land-based missiles and nuclear submarines are more likely to survive a devastating first strike than bombers. The study, to the surprise of many longtime observers, recommended gradually retiring the nuclear bomber force.

Nonetheless, there remains fierce resistance to scrapping the nuclear bombers both inside and outside the Air Force. Supporters assert that, unlike land-based missiles already on alert in fixed locations or nuclear subs that must remain undetected, bombers, by being sent aloft, can signal US intent to use nuclear weapons to help defuse a possible crisis, such as with North Korea or Iran.

In other words, it is the only nuclear saber that can be rattled.

“Rolling the bomber fleet onto the flight line could be the first step in escalation,” said Adam B. Lowther, a faculty researcher at the Air Force Research Institute at Maxwell Air Force Base in Alabama.

There are other military arguments to support maintaining the bomber leg. For example, only bombers are currently outfitted to carry the special version of B61 nuclear bomb designed to strike deeply buried targets, which some assert might be needed to take out the nuclear program of a threatening nation or terrorist group.

“Bombers are and will remain critical components of the strategic nuclear triad because they possess great flexibility and versatility,” said General Frank Klotz, commander of the Air Force Global Strike Command at Barksdale Air Force Base.

There is also likely to be significant political opposition. Like the land-based missile and submarine forces, the bombers have strong political backers in the states where they are located, including Louisiana, Missouri, and North Dakota.

Missiles under review Even if it moves to eliminate the bomber leg of the triad, the Obama administration, is almost certainly going to have cut some of 450 intercontinental ballistic missiles, or ICBMs, now spread across Montana, North Dakota, and Wyoming if it wants to bring the US arsenal down to 1,000 warheads or less. But even members of his own party - including senators he will need to pass his proposed arms control treaty with Russia - could stand in his way.

“While we may not oppose modifications or some reductions to our nuclear force, we are certain that the ICBM force as currently constituted provides an extraordinary benefit to our national security while delivering high value to the taxpayer,” six Democratic and five Republican senators told Secretary of Defense Robert M. Gates in a letter last fall.

The Minuteman III missiles, which can travel more than 6,000 miles and hit their targets in 30 minutes, are considered the most reliable of all three legs of the triad. The missile crews have the most reliable communications with the president - the only person who can order a nuclear launch - and 99 percent of the missiles are traditionally on alert ready to launch within minutes.

The silos and launch centers, meanwhile, are disbursed and hardened against attack, requiring a large-scale first strike by Russia to take them out. An adversary “would have to expend everything they have,” said Colonel Michael Fortney, commander of the 341st Missile Wing at Malmstrom Air Force Base in Montana. The missile wing, which maintains and operates 150 missile silos spread across 14,000 square miles of rolling hills and steep plateaus, is responsible for 15 missile alert centers, each ready to launch at least 10 missiles.

Fortney, like many senior military officers interviewed for this story, said he is prepared to work under a new nuclear policy regime, but warned that as the United States goes to lower numbers of warheads it means that every weapon left becomes more important to ensure that the nuclear arsenal maintains its capability and credibility to deter potential enemies. That is likely to require new investments in missiles and warheads, he suggested.

“There is somewhat of a greater sense of urgency,” he said, “to make sure that the systems stay on alert.”

Threats variable The nuclear review is taking place as threats against the United States, from former enemies, rogue nations, and potential terrorists, remain in flux. Even the vestiges of the old

Soviet Army seemed to stir recently, giving ammunition to those who want to keep the nuclear force closer to its current levels.

In a November exercise code-named “West,” 13,000 Russian and Belorussian troops practiced putting down a popular uprising and storming a beachhead. Then, according to local media reports, the Russian Air Force simulated a nuclear attack on Poland.

Word of the exercise immediately set off alarm bells in Warsaw, which had been under Soviet domination for 40 years but is now a member of the US-led NATO military alliance. It also underscored that Obama’s plans to deemphasize nuclear weapons are not necessarily held by other nuclear powers.

“The Russian leadership is absolutely committed to their nuclear weapons,” said C. Franklin Miller, a former National Security Council official who is now an unpaid adviser to the US Strategic Command, the military headquarters based in Nebraska that oversees all US nuclear weapons. “The Chinese certainly believe in their arsenal.”

Miller and others also point out that Russia also has a 10-to-1 advantage over the United States in so-called “tactical” nuclear weapons, smaller bombs that could be used on the battlefield to take out large formations of troops. Those weapons are not covered in the proposed arms reduction treaty with Russia, although senior administration officials have said they intend to include them in future negotiations.

Indeed, the actions of other nuclear weapons states have some concerned that the United States could set off a new nuclear arms race if it cuts its arsenal to 1,000 weapons or fewer.

Henry Sokolski, director of the Nonproliferation Policy Education Center and a member of a high-level commission that advises the government on weapons of mass destruction, has argued that reducing the US arsenal dramatically could lead China or other powers that now have hundreds of nuclear weapons to try to reach parity by building up their arsenals - what he calls the destabilizing prospect of a “packed nuclear crowd.”

But others, like Kimball, note that Russia and the United States have 95 percent of the world’s nuclear arms and that there would be plenty of warning if a country like China, which is estimated to have 350 weapons, tried to catch up. “The United States and Russia each deploy more than 2,000 strategic warheads, most of which exist only to deter a massive nuclear attack by the other,” he said. “No other country possesses more than 300 nuclear warheads, and China currently has fewer than 30 nuclear-armed missiles capable of striking the continental United States.”

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Nearing New Arms Pact, U.S. and Russia Look Beyond It

By [PETER BAKER](#)

Published: December 17, 2009

The New York Times

OP-ED CONTRIBUTOR

WASHINGTON — Eight months, three presidential meetings, countless Geneva negotiating sessions and one missed deadline later, the United States and [Russia](#) appear close to agreement on a new arms control treaty that will reduce their strategic nuclear arsenals by at least one quarter.

But even if the two sides manage to bring home a deal in coming days as they hope, that will be the easy part. After [President Obama](#) and President [Dmitri A. Medvedev](#) of Russia sign the new pact, they plan to send negotiators back to the table next year to pursue a far more ambitious agreement tackling whole categories of [nuclear weapons](#) never before subject to international limits.

The talks envisioned for 2010 would continue to advance Mr. Obama's disarmament agenda and attempt what no president has managed since the dark days of the cold war. In addition to further reducing deployed strategic warheads, the negotiations would try to empty at least some vaults now storing warheads in reserve. And the two sides would take aim at thousands of tactical nuclear bombs most vulnerable to theft or proliferation, some still located in Europe 20 years after the fall of the [Berlin Wall](#).

The effort is part of a broader initiative by Mr. Obama to start down the road toward eventual elimination of all nuclear weapons and to transform the American military for a new era. A nuclear posture review due next month will propose an overhaul of the nation's strategic doctrine and force consideration of the question of how many weapons the United States really needs without a superpower rival, including whether to eliminate one leg of the traditional "triad" of submarines, missiles and bombers.

The first step is the completion of the treaty now on the table. Mr. Obama left Washington on Thursday night to fly to Copenhagen, where he will meet with Mr. Medvedev on the sidelines of a global [climate change conference](#). There, they hope to cut through the remaining obstacles to the agreement to replace the [Strategic Arms Reduction Treaty](#) of 1991, known as Start, which expired on Dec. 5.

The new version of Start would require each side to reduce deployed strategic nuclear warheads to roughly 1,600, down from 2,200, according to a senior American official. It would also force each side to reduce its strategic bombers and land- and sea-based missiles to below 800, down from the old limit of 1,600. Foreign Minister Sergey V. Lavrov of Russia said on Thursday that there had been "some slowing down" in negotiations by the other side, but American officials denied it and said there were just three remaining issues to resolve, mainly on verification.

Estimated U.S. and Russia Nuclear Weapons 2009-2016				
	2009		2016	
	US	Russia	US	Russia
Operational	2,700	4,830	2,175	3,675
Strategic	2,200	2,780	1,675 ^a	1,675 ^a
Non-Strategic	500 ^b	2,050 ^c	500	2,000
Reserve	2,500	3,500 ^d	2,500	3,500
Total Stockpile	5,200	8,330^e	4,675	7,175
Awaiting Dismantlement	4,200	4,670 ^e	2,600 ^f	few ^f
Total Inventory	9,400	13,000	7,275	7,175

^a Based on upper limit of START follow-on treaty.
^b Approximately 200 of these warheads are deployed in Europe.
^c Deployed on bases with operational units.
^d The majority of these are thought to be non-strategic warheads.
^e Very little is known about the total size of the Russian stockpile and how many warheads are awaiting dismantlement.
^f Assumes warheads cut by START follow-on treaty will be retired and dismantlement continued at current rate.

Hans M. Kristensen/Federation of American Scientists, 2009

If lingering differences can be addressed, the Obama administration hopes to build on the trust established over the past eight months and plunge right back into talks for a broader agreement. That broader treaty would reduce the number of deployed strategic warheads even further, perhaps to about 1,000 for each country, a level considered the lowest the two would go without bringing in China, Britain, France and other nuclear powers.

Beyond that, negotiators would tackle stored strategic weapons and tactical weapons, neither of which has been limited by treaty. The United States has about 3,000 strategic warheads in storage while Russia has about 1,000, according to the Center for Defense Information, a private advocacy group in Washington.

The lopsided balance is the opposite for tactical warheads, generally defined as those with ranges below 300 to 400 miles. Russia has 3,000 to 8,000 of them, according to the Center for

Defense Information. The Federation of American Scientists estimates that about 2,000 of them are actually deployed, while the Arms Control Association says that perhaps just a few hundred are truly operational.

Estimates of American tactical nuclear weapons range from 500 to 1,200, with about 150 to 240 still deployed in Belgium, Germany, Italy, the Netherlands and Turkey, half as many as about five years ago. The United States in recent years has withdrawn tactical nuclear weapons from bases in Britain, Germany and Greece.

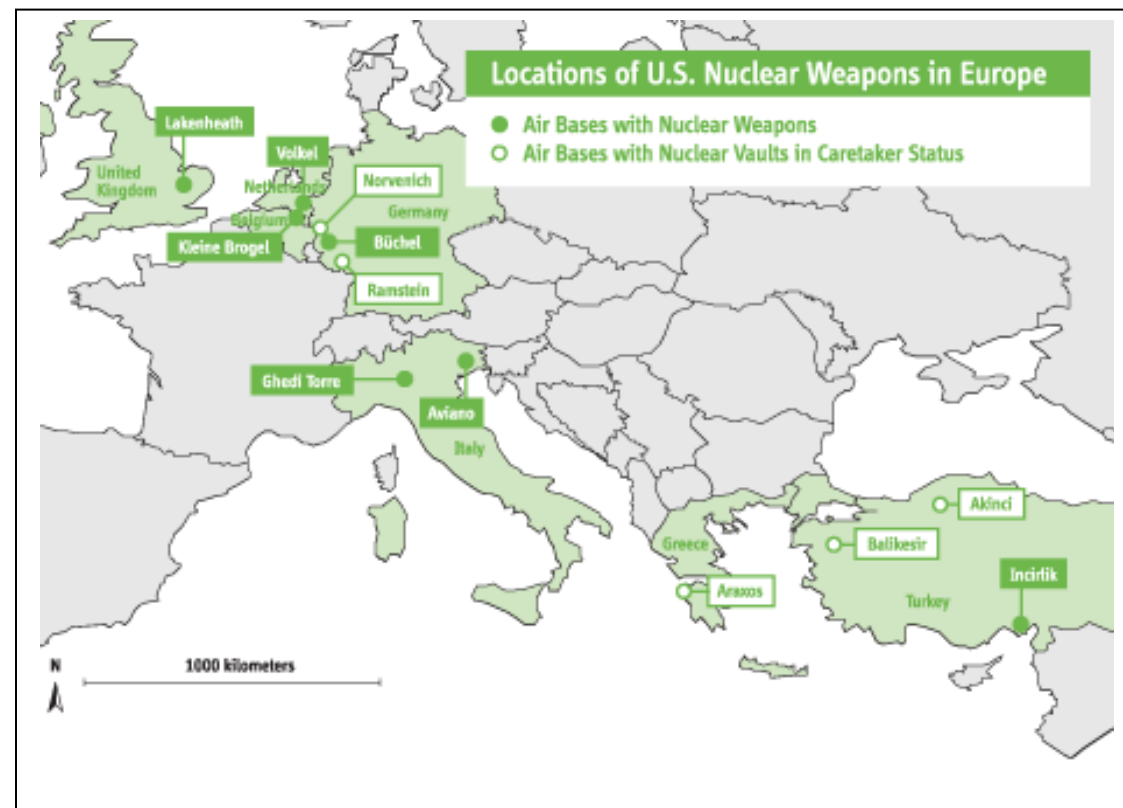
weapons,” meaning it was time for the United States to remove the remaining tactical weapons. But other [NATO](#) allies are leery of a complete pullback, seeing the presence of the weapons as a sign of America’s continued commitment to European security.

Similar debates have played out within both the American and Russian military establishments. “This is what both presidents say they want, but they’re both going to have to overcome the resistance of the conservative nuclear bureaucracies in their countries,” said Joseph Cirincione, president of the Ploughshares

Fund, a group that advocates disarmament. “These are small but still powerful forces.”

Tactical nuclear weapons were developed during the cold war as generally lower-yield, shorter-range explosives that could be used on the battlefield. The United States and its NATO allies relied on them as a deterrent to any invasion of Western Europe by what were presumed to be superior Soviet and Warsaw Pact land forces. But since the demise of the Soviet Union, the thinking has flipped, and Russia today views tactical nuclear weapons as a bulwark against American conventional supremacy.

“The idea that they would give these things up lightly is a fool’s errand,” said Henry D. Sokolski, executive director of the Nonproliferation Policy Education Center in Washington. “They’re putting more emphasis, not less, on these systems. They’re relying on them more because they can’t catch up with us on conventional forces.”



“Today these weapons are militarily unnecessary, and they are a much bigger liability than asset because Russia and the United States have to maintain security over these warheads whether they are deployed or not deployed, and they’re harder to track because they’re smaller,” said Daryl G. Kimball, executive director of the Arms Control Association.

But the challenge of reaching an accord would eclipse the difficulties in drafting the current treaty, which was supposed to be completed by the time Start expired two weeks ago. “It would make this look like a walk in the park,” Mr. Kimball said.

The idea of withdrawing all tactical nuclear arms has generated debate in Europe. In October, Germany’s new foreign minister, [Guido Westerwelle](#), called for “a country free of nuclear

Washington and Moscow emerged from the cold war determined to reduce tactical nuclear arms, and both sides announced unilateral cuts in 1991. As a result, 17,000 tactical nuclear weapons were withdrawn from service, but no treaty ever imposed legally binding limits. Nikolai N. Sokov, a former Soviet arms control negotiator now with the James Martin Center for Nonproliferation Studies at the Monterey Institute of International Studies in California, called it “the longest deadlock on the entire arms control agenda.”

A Nonstarter on Arms Control

The New York Times

By ARIEL COHEN
Published: January 8, 2010

WASHINGTON — The Obama administration has failed to complete the negotiation of a treaty to replace the Strategic Arms Reduction Treaty (Start), which expired on Dec. 5. The two superpowers are now in uncharted waters.

Moscow and Washington have stated that Start still applies voluntarily. This is false. First, without the consent of the U.S. Senate, expired treaties are null and void. Second, the Russians already kicked out U.S. inspectors, thus scrapping a key provision of the now-dead treaty. Third, on Tuesday, Dec. 29, Prime Minister Vladimir Putin upped the ante, linking U.S. missile defenses with the treaty signature. Speaking in Vladivostok later that week, Mr. Putin warned against U.S. “aggressiveness” and disruption of the nuclear balance in case the Obama administration deploys missile defenses.

As competition between Mr. Putin and President Dmitri Medvedev for the 2012 presidential nomination is rising, Mr. Putin may be denying his former protégé a prestigious feather in his statesman’s cap.

The official talks will restart in Geneva, possibly as early as next week. And the American side also appears circumspect. The U.S. Senate is concerned with the future of the Start follow-on treaty. Senators worry that the Obama administration may be making concessions to Russia that are detrimental to U.S. national security. On Dec. 16, 41 senators signed a letter to President Obama,

saying that they will oppose the new treaty if the United States gives up nuclear modernization. Thus, the 67 vote supermajority necessary for ratification is far from secure.

Supporters of missile defense, nuclear modernization and prompt global strike intercontinental ballistic missiles with conventional warheads would oppose the treaty if it undermines their priorities.

The Kremlin feels it has a winning hand in the nuclear bargaining as the follow-on treaty is considered more important to the United States than Russia. The White House already ceded deployment of a stationary missile defense in Poland and the Czech Republic and has agreed to pull U.S. inspectors from a missile factory in Votkinsk, Russia. The removal will make it impossible to monitor production of Russia’s new RS-24 mobile multi-warhead ICBMs. This missile will be the mainstay of Russian strategic forces by 2016. Thus, the stronger party starts looking like a loser.

Preoccupation with the Start follow-on treaty is a major part of Mr. Obama’s effort to “reset” relations with Russia. The completion of the Start follow-on, as well as the ratification of the Comprehensive Nuclear Test Ban Treaty by Congress, are seen as a key stepping stone of “getting to zero” — achieving a world without nuclear weapons.

The Russians, however, quietly scoff at Mr. Obama's goal. While the Russian government publicly champions the U.S. nuclear disarmament effort, Russia's military and security elite deride it. "Russia will develop offensive weapons — because without them there is no other way to defend our country," Mr. Medvedev said in the recent TV interview.

Moreover, Russian nuclear policy and statements clearly reveal an abiding commitment to nuclear weapons. The U.S. national leadership and arms control negotiators should examine the Russian nuclear doctrine and policy as they are, not as they want them to be.

Russia is boosting the role of nuclear weapons in its national security strategy and doctrine. Russia's nuclear doctrine considers the United States its "principal adversary." With deficiencies in its conventional forces and difficulties procuring and deploying high tech weapons, Russia will increasingly rely on nuclear weapons, including first-use use in local conflicts, such as with Georgia last year. This is what Russia's National Security Council Secretary, General Nikolay Patrushev recently announced.

Moreover, Russia has 3,800 tactical nukes, which were not included in the follow-on treaty. And in the recent military maneuvers in Belarus, the Russian Army simulated an invasion of Poland — with 900 tanks and fired three nuclear missiles at the "enemy."

Mr. Putin has repeatedly announced that despite the economic crisis, the Russian government will continue

major funding for advanced military equipment, including nuclear weapons modernization. Russia's military-industrial complex is busy developing high-precision and low-yield deep-penetration nuclear weapons. But the Russians are also demanding the halt to U.S. nuclear modernization, which the bipartisan Perry-Schlesinger Commission recommended to the U.S. Congress and is necessary to maintain an effective deterrent.

Lastly, the U.S. intelligence community advised Congress that Russia is currently in violation of Start, as well as other arms control and nonproliferation agreements. The Obama administration's broader agenda to "get to zero" appears to have compromised the treaty negotiations. This has caused Senator Jon Kyl, Republican of Arizona, to accuse the administration of arms control malpractice.

To put it simply, the new treaty must not compromise U.S. or allied national security. It should not limit U.S. missile defenses or nuclear modernization. The U.S. should oppose a Russian offensive nuclear posture, and counter the further lowering of the nuclear threshold. The United States should pursue a "protect and defend" strategy, which includes a defensive nuclear posture, missile defenses and nuclear modernization.

Ariel Cohen is senior research fellow at the Davis Institute for International Studies at The Heritage Foundation.

Russia Cool to U.S. Plan for Missiles in Romania

By ELLEN BARRY
Published: February 5, 2010

The New York Times

MOSCOW — Russian officials reacted coolly on Friday to the news that [Romania had agreed to host American missile interceptors](#) starting in 2015, with a top envoy saying that the announcement could directly affect Moscow's position as negotiations to replace the Strategic Arms Reduction Treaty, or Start, reach their conclusion.

Dmitri O. Rogozin, [Russia's](#) permanent representative to [NATO](#), said the United States had not fulfilled its promise to consult Russia on developments in the missile defense system. He suggested that the interceptors could pose a threat to Russia's security, while noting that both Romanian and American officials went out of their way to assure Moscow otherwise.

"It seems to be in line with Freud's theory — it means they have some thoughts that the system could be targeted against Russia, otherwise why would they dissuade us about something we never asked about?" he said.

Though the general outlines of the new missile defense plan — including the staging of land-based interceptors in Europe — were made

public months ago, Russian officials made it clear that they were taken aback by the announcement of [Romania's](#) role. Foreign Minister Sergey V. Lavrov said the Russian and American presidents had agreed that the "threats and risks of missile proliferation will be assessed jointly as a first step."

"We expect our American partners to provide exhaustive explanations on those issues in the context of this dialogue," the Interfax news service quoted Mr. Lavrov as saying at a news conference in Germany, where he traveled to attend the [Munich Security Conference](#).

The announcement came at a sensitive moment. At the Munich conference, Mr. Lavrov has meetings planned with Iran's foreign minister, and he has suggested that Russia may be ready to consider sanctions against Iran if he is not satisfied with the response in their discussion about Tehran's nuclear program.

And with the Start renegotiation, a central project in the "[reset](#)" between the countries, in

its final stages, Russian leaders have repeatedly said missile defense remains a stumbling block.

Russian analysts said the SM-3 interceptors planned for Romania posed no threat to Russia's nuclear deterrent, since they target medium- and short-range missiles. But that might change when a second generation of interceptors is put in place in 2018, a possibility that makes Moscow wary, because the United States is under no obligation to share data about the system, said Sergei M. Rogov, director of the [Institute for the U.S. and Canada Studies](#) in Moscow.

"Here comes the question of transparency," he said. "Why is the U.S. making a decision again without consulting with Russia?"

The announcement is not likely to derail Start negotiations, Mr. Rogov said, but could jeopardize talks that negotiators hoped would follow, including deeper cuts to strategic [nuclear weapons](#). The news from Romania came, he said, amid various signs of "reverse

movement" in the "reset": Start negotiations have dragged on, Secretary of State [Hillary Rodham Clinton](#) rejected Russian calls for a new European security structure, and Poland and Sweden called for Russia to withdraw its nuclear missiles from Kaliningrad.

"Additional issues are overloading the 'reset,' which is not moving very far or very fast," Mr. Rogov said. "So I am concerned about it."

Those concerns were underlined when Russia released its [new military doctrine](#), approved on Friday by President [Dmitri A. Medvedev](#). The document, which guides military policy for a decade, identified the American missile defense system as a major threat to Russian security, saying it "undermines global stability and violates the current balance of nuclear forces." Another central concern of the document was the continued expansion of NATO and the organization's attempt "to globalize its functions in violation of international law."

Michael Schwirtz contributed reporting.

New missile defense plan

President Barack Obama announced a missile defense system that would protect against Iran's short- and medium-range missile capabilities.

The plan

Phase one Missile-equipped Aegis warships to defend European allies and U.S. forces

- New, more mobile radar to detect, track missiles

Phase two Land-based missile system starting about 2015



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Source: GlobalSecurity.org, Reuters, Raytheon, naval-technology.com, U.S. Missile Defense Agency, Chicago Tribune
Graphic: Melina Yingling, Judy Treble

written by: Junichi Abe, 28-Sep-09



China's attitude toward nuclear weapons has been complex. While pretending to make slight of American atomic bombs by calling them "paper tigers," Mao Zedong was aware that China would need to arm itself with nuclear weapons in order to counter the American nuclear threat. Due to its rivalry with the Soviet Union, China had to develop nuclear weapons on its own, but managed to declare itself a nuclear state after successfully conducting its first nuclear test in October 1964. By that time, however, the nuclear capabilities of the US and the Soviet Union had reached a significant level, with the two countries possessing intercontinental

ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and ballistic missile submarines (SSBNs) capable of launching SLBMs. China was despairingly lagging behind the US and the Soviet Union in terms of nuclear capability. China managed to acquire nuclear weapons amid economic hardship with the kind of determination shown by then Chinese Foreign Minister Chen Yi, who insisted that China should develop nuclear weapons at any cost, "even if the Chinese people have to pawn their trousers for this." Thus from the beginning, China has had no intention of becoming a nuclear power like the US and the Soviet Union and has modernized its nuclear capability at its own pace.

Sun Tzu said in *The Art of War*, "if you know both yourself and your enemy, you can win a hundred battles without a single loss." As if to take the reverse, China has the tendency to keep quantitative military data secret, including the total size of its conventional forces. This lack of transparency concerning the Chinese military is nothing new. The Chinese leadership may consider hiding information an effective way of presenting its small nuclear capability to the world. Among the five nuclear powers under the Nuclear Non-Proliferation Treaty (NPT), only China's nuclear capability is veiled in secrecy. China has, of course, showcased some of its strategic nuclear missiles during its military parades, but has never revealed data concerning its nuclear weapons, such as the numbers of nuclear warheads and deployed missiles. This has contributed to errors in data collected by foreign countries concerning China's nuclear capability. Given the small degree of these errors, however, we may be able to take the international data as broadly correct.

If we take this information as given and look at China's nuclear capability, the number of China's nuclear warheads stands at around 200 -- the smallest arsenal among the five nuclear powers and essentially on the same level as that of Britain. China places overwhelming emphasis on ground-launched ballistic missiles in its nuclear force structure. It is assumed that SLBMs, to which the other nuclear nations attach growing importance, are not functioning as war potential, for no Xia-class nuclear-powered submarines capable of launching JL-1 SLBMs have been found on patrol duty. Two Jin-class nuclear submarines have been confirmed through photographs, but the JL-2 SLBMs to be launched by these new nuclear

submarines are still under development and there has been no report confirming their launch tests. China does not possess air war potential categorized as strategic bombers, such as B52s, B1s and B2s.

Technologically, China's current nuclear capability remains at the level of the US in the first half of the 1960s. China's nuclear capability can be summarized as about 130 ballistic missiles deployed on the ground with each missile able to carry only one warhead, meaning that no multiple independently targetable reentry vehicles (MIRVs) have been introduced. Furthermore, middle- and long-range ballistic missiles, such as DF-5 intercontinental ballistic missiles (ICBM), are liquid fuel rockets not suited to rapid reaction. In other words, China lags more than 40 years behind the US in modernizing its nuclear capability.

China has argued that it is the responsibility of the US and Russia to first reduce their nuclear arsenals, stating that China's nuclear force level is no match to those of the two largest nuclear powers. In July, US President Barack Obama and his Russian counterpart Dmitry Medvedev agreed to reduce their strategic nuclear stockpiles to between 1500 and 1675 warheads each as part of a new treaty to succeed START I. Even if the proposed reduction is realized, however, the nuclear capabilities of the US and Russia will remain far stronger than those of China.

Nevertheless, China would go along with the ideas and philosophy of Obama's proposal for a nuclear-free world, which were outlined in his April 5 speech in Prague, for China has continued to advocate for nuclear abolition. However, if nuclear abolition means all the nuclear states abolishing their arsenals at the same rate, China would strongly oppose the idea. This is because, in a world without nuclear weapons, the US would maintain absolute supremacy with its overwhelming conventional forces. What is most important for China is to secure deterrent capability against the US.

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<http://www.delcowagepeacejustice.org/>

<http://www.peacecoalition.org/>

Saurabh Kumar: Striving for a Nuclear Weapons-Free World

Seven months after President Obama affirmed the US commitment to work towards a nuclear weapon-free world, there has been no move to take it forward

Saurabh Kumar / New Delhi December 20, 2009, 0:30 IST



©Carnegie Endowment for International Peace, *Deadly Arsenals* (2005), www.ProliferationNews.org

US President Obama and PM Manmohan Singh “pledged to work together, as leaders of responsible states with advanced nuclear technology”.

The significance of this articulation by India and the USA can be appreciated better in the background of the international discourse on nuclear disarmament and strategic security issues. A nuclear weapon-free world has long been a cherished goal of the international community but it has remained an ideal that has never entered the realm of the feasible.

The main reason for this is that the US, the country with the largest nuclear arsenal by far was not ready to move in that direction, or even to contemplate committing itself to ever doing so. Obama is the first US President to have broken the “taboo”, as it were, and affirm “America’s commitment to seek the peace and security of a world without nuclear weapons” in his speech at Prague in April last. (More specifically, that “the US will take concrete steps toward a world without nuclear weapons” and “reduce the role of nuclear weapons in our national security strategy”.)

Yet, more than seven months after Obama’s bold break with the past, there has been no move, internationally, to build upon it and take it forward to have the goal of abolition of nuclear weapons adopted globally, i.e. as a legally binding obligation undertaken by all nations.

No nation has thought it fit, for example, to ask the other nuclear weapon states to follow suit so that the goal of a “global zero” (of nuclear weapons) could be (re)endorsed by the UN General Assembly — the obvious thing to do in the wake of the gargantuan US shift — in order to seal agreement at the conceptual level. And, accordingly, to then task the Conference on Disarmament in Geneva to finally commence negotiations on a Nuclear Weapons

Convention — the designated UN body for negotiating disarmament agreements has so far not been able to even bring nuclear disarmament on its agenda primarily because of US-led opposition. This is the way a Chemical Weapons Convention providing for elimination of chemical weapons

Tucked away in one of the many paragraphs of the Joint Statement issued during the recent US visit of the Prime Minister, unnoticed almost in spite of a voluble media, is an idea that deserves a little more attention than it has got — their “shared vision of a world free of nuclear weapons”, for which

globally in a specified time frame, with mechanisms to verify compliance to the satisfaction of all signatories, was concluded.

Even the NAM does not appear to have viewed Obama's Prague promise (at its Sharm El Sheikh Summit in July) as an opportunity for pursuing what has been one of its foremost objectives with renewed vigour.

On the other hand, sceptics questioning the practicability of a world without nuclear weapons, on one ground or another, abound. More than the voices discrediting the "vision thing", it is the lukewarm reception accorded to Obama's public declaration of this conceptual breakthrough in the US position by the strategic establishments of NATO countries, including the US itself, that is disconcerting. India has its own share of hawks who tend to be dismissive about Obama's Prague speech in a somewhat self-serving fashion.

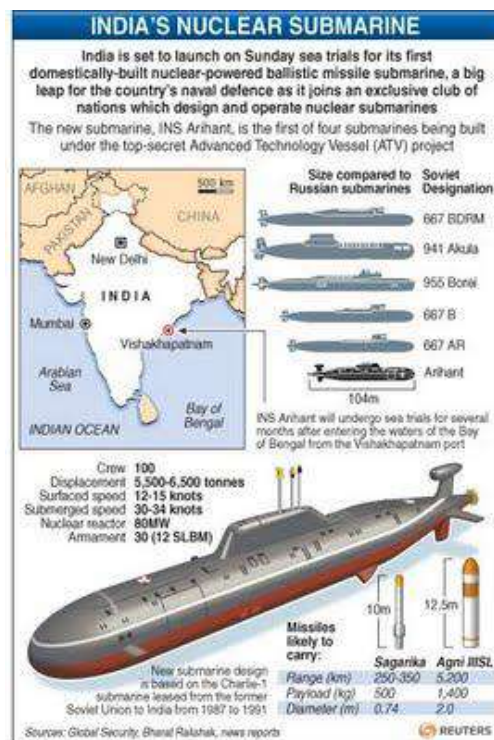
The importance of the allusion to the "shared vision" in the India-US Joint Statement, therefore, lies in India's grasp of the historic opportunity offered by Obama's clearing of the cobwebs. It is the first country to tap this new congruence, potentially a weighty one, and lend its voice for (re)generating momentum behind the vision of a "nuclear weapon-free world".

At the same time, attention must be turned to examining what India can do, by itself, to further the objective. The reason for this is that, in the long run, nuclear weapons are not an asset but a liability. Whatever the justification in 1998 for going in for them — and I am amongst those who believe there was a very good case — it does not follow that their retention in perpetuity, or even voluntary integration into the nation's defence arsenal, is desirable. A view needs to be taken, internally within the country naturally, whether nuclear weapons are essential for safeguarding the nation's strategic security interests for all time to come and under all circumstances. Possibly not, it is submitted.

The utility of nuclear weapons for India was, and is, political, not military — as a lever, and leveller, of sorts. But it has to be acknowledged that such is the calculus of these "weapons", that the political advantage accrues only if they are maintained in fighting fit, full military, condition. This, in turn, means that the benefits cannot be had without incurring the risks; also that some degree of an arms race is built into the (il)logic of nuclear weapons, subjective disinclination for indulging in it notwithstanding. Hence the overall negative assessment in a "cost-benefit-risk" analysis.

If a domestic consensus can be built around the above premises, it would follow, logically, that the political leverage acquired by the nation as a result of its 1998 decision to invite itself into the "nuclear club" can, and should, be exercised (i.e. traded off) for

the purpose of securing a world free of nuclear weapons (which, in the final analysis, is in India's supreme interest), now that it is no longer an unthinkable proposition. The opening created by Obama's fresh approach affords a golden opportunity of doing just that — namely, putting the national nuclear prowess to larger political use, in the service of the long, and widely, cherished goal of nuclear disarmament and therefore of lasting national and international security.



Thus India could unilaterally declare its readiness to reconsider the non-civilian part of its nuclear programme, provided a multilaterally negotiated (and legally binding) programme for time-bound elimination of all nuclear weapons of all countries could be agreed upon internationally — but, of course, not until then, i.e. not under any partial measures such as the UN Security Council Resolution 1887, CTBT, FMCT etc. (which should all be fitted into a nuclear weapons-free world paradigm now).

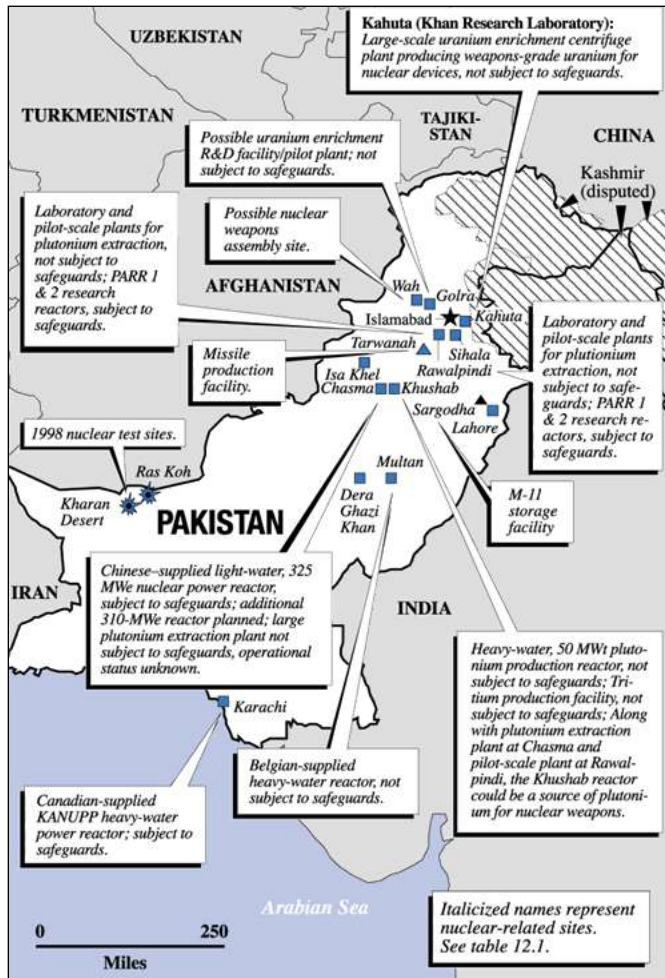
The role and function of the nuclear arsenal in the nation's possession needs to be debated in the above perspective in order that a reasoned and pro-active approach to the changing external scenario can be evolved without becoming prisoners of the past, or of habit, by default.

The author retired recently as India's Ambassador to the IAEA, UNIDO and the UN Offices in Vienna (on drugs, crime and outer space affairs), and to Austria. He served in various capacities in the Ministry of External Affairs and also as a strategic analyst in the Cabinet Secretariat during his term in the Foreign Service

If India phases out Nukes, we're ready to follow suit: Pak



Posted: May 23, 2009 at 1126 hrs IST



refugees of Swat Valley, Pakistan Ambassador to the US Hussein Haqqani insisted that the nuclear weapons of his country are safe and there should be no concern about their security.

"Everybody in the US Government who knows anything about nuclear weapons knows that Pakistan has a very secure nuclear programme. It's a very limited nuclear programme to maintain deterrence vis-a-vis our neighbor," Haqqani told the CNN in an interview.

"At the same time, Pakistan is willing to engage with our neighbour for a comprehensive settlement in which the nuclear weapons can be phased out by both countries," he said.

"Pakistan's nuclear weapons are safe and Pakistan is not going to expand nuclear weapons capability to a point when it becomes a threat to any country in the world, including our neighbours," he said urging the US media not to divert attention from the real issue by raising the question of safety of nuclear weapons of Pakistan.

Haqqani said the [United States](#) should not be concerned about the nuclear weapons of Pakistan as this is not a threat to the US. "I don't think Pakistan's nuclear weapons are a threat to the United States. I think the threat to the United States right now comes from terrorists that might be in Afghanistan or in parts of Pakistan. And Pakistan is doing a great job fighting those terrorists right now," he said.

The Pak Ambassador said his country is unlikely to give specific details of its nuclear weapons to the US; despite the fact that it has assured top US leaders that its atomic weapons are secure and there is no need to be concerned about it. "I don't think any country knows or tells the location of all its nuclear weapons to any country in the world," he said.

Haqqani went ahead to link this sharing of information with that of India. "The Soviet Union never did it with the United States until an -- after comprehensive negotiations between the US and Soviet Union started. So whenever that starts between Pakistan and its eastern neighbour, we will move in that direction," Haqqani said.

Washington Stating that [Pakistan's](#) nuclear weapon is a "deterrent" against India, the country's top diplomat to the US expressed willingness to enter into an agreement with New Delhi to phase out all atomic arms possessed by the two countries.

Appearing on the CNN to make a public appeal to the Americans to donate USD five each through cell phone for the

India, Pak exchange lists of nuclear installations

MIL/ANS/HT, Jan 1, 2010

Islamabad/New Delhi, January 1, 2010 (Friday) – IR Summary/ IANS/HT. India and Pakistan have exchanged the list of their Nuclear arsenal and facilities simultaneously in Islamabad and New Delhi, both being nuclear nations, though they don't enjoy the status of nuclear powers and both of them are non signatory of Comprehensive Test Ban Treaty.

To preserve further security, wisdom prevailed on both countries and on 31 December 1988 they decided to put an agreement on the Prohibition of Attack Nuclear Installations and Facilities with a view to preventing any accidental attack against either of the two, both the countries exchanged the lists of their nuclear arsenal and their first exchange took place on January 1, 1992, and the same is re-confirmed today by both the countries by exchanging their latest lists of arsenal in Islamabad and New Delhi, more or less simultaneously.

In order to secure its sovereignty, India had experimented atom bomb in 1974 followed by 5 more bombs in 1998, whereas Pakistan had experimented six Atom Bombs in retaliation in 1998 and thereafter, both the countries were supposed to have amassed sufficient numbers of Atom Bombs to secure themselves.

The Ministry of External Affairs, Indian Govt. in their Press Release said that the exchange is made "through diplomatic channels simultaneously at New Delhi and Islamabad" and this is the nineteenth consecutive list exchange between the two countries.

In Islamabad, Pakistan's list was handed over to a diplomat of the Indian High Commission at the foreign Office at 11 am, whereas India handed over its list to a Pakistani diplomat at its headquarters in South Block, New Delhi at 11.30 am.

WHO CONTROLS N-ARSENAL?

Pakistan's nukes are controlled by **National Command Authority (NCA)**, which comprises

- 1 Employment Control Committee
- 2 Development Control Committee
- 3 Strategic Plans Division, which acts as NCA's secretariat

Employment Control Committee is chaired by head of govt (president; **though with a civilian president, the army chief is in control**) and includes:

- Ministers of foreign affairs, defence, interior
- Chairman of Joint Chiefs of Staff Committee
- Three services chiefs
- Director-general of Strategic Plans Division
- Technical advisers

While India's nuclear command is in civilian hands, Pakistan's nukes remain in control of the army chief, with the president just a figurehead

PAKISTAN	INDIA
STOCKPILE: 50-120 warheads	STOCKPILE: 100-200 warheads
MAX MISSILE RANGE: 5,000 km	MAX MISSILE RANGE: 5,000 km



- India's nukes are controlled by Nuclear Command Authority (NCA), which was created by Cabinet Committee on Security (CCS)
- NCA commands, controls and operationalises decisions regarding India's nukes. NCA is divided into Political Council chaired by PM and Executive Council chaired by NSA
- NCA directs Strategic Forces Command under the control of a three-star general. It's in charge of management & administration of tactical & strategic nukes
- India is in the process of developing the nuclear triad to equip each one of the three wings, Army, Navy and IAF, with nukes. While the Army and IAF have nuclear-tipped warheads, Navy is at an advanced stage of ability to launch nukes from the sea

Pakistan blocks agenda at U.N. disarmament conference

By Jonathan Lynn

Reuters

Tuesday, January 19, 2010; 7:46 AM

GENEVA (Reuters) - Arms negotiators failed to start talks on Tuesday on cutting nuclear weapons when [Pakistan](#) blocked the adoption of the 2010 agenda for the U.N.-sponsored Conference on Disarmament.

The conference, the world's sole multinational negotiating forum for disarmament, spent much of 2009 stuck on procedural wrangles raised by Pakistan after breaking a 12-year deadlock to agree a programme of work.

The impasse on Tuesday suggested 2010 would be another year of halting progress.

Pakistan, which tested a nuclear weapon in 1998, is wary of the proposed focus in the programme on limiting the production of fissile material, which would put it at a disadvantage against longer-standing nuclear powers such as [India](#). It therefore has an interest in delaying the start of substantive talks, diplomats say.

"Even in the darkest days the agenda was adopted, because everything can be discussed under the agenda," said one veteran official, unable to recall a similar delay in the past.

FROZEN IN TIME

Adoption of the agenda at the start of the annual session is normally a formality, but Pakistan Ambassador Zamir Akram took the floor to call for the agenda to be broadened to cover two other issues.

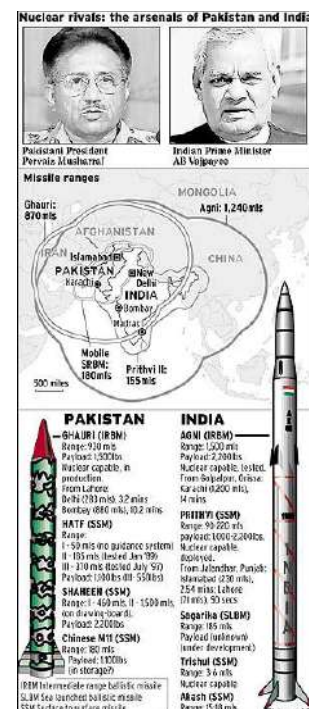
Akram said the 65-member forum should consider conventional arms control at the regional and sub-regional level, in line with a United Nations General Assembly resolution sponsored by Pakistan and passed last year.

The conference should also negotiate a global regime on all aspects of missiles, he said.

"It is not our intention to create an obstacle but it's also not our intention to create a situation which is oblivious to what is happening around us," Akram said. The move forced the conference president, Bangladesh ambassador Abdul Hannan, to adjourn the meeting for consultations to find a consensus. He

said he hoped to resume on January 21 with a renewed discussion of the agenda.

Sergei Ordzhonikidze, the former Russian diplomat who heads the U.N. in Geneva and is secretary of the conference, said failure to adopt the agenda would be a move backwards, arguing that it was flexible enough to include all topics of concern. But Akram said Pakistan did not want to work with a programme that was "frozen in time."



Reaching a consensus is likely to prove difficult, as India rejected a discussion of regional conventional arms control, arguing that the conference should focus on global issues.

Diplomats said Pakistan's attempt to include regional arms control appeared directed at its bigger and better-armed neighbor.

The U.N. General Assembly also called on the conference last December to agree a 2010 work programme including immediate negotiations to ban the production of fissile material, in a resolution sponsored by Canada.

(Editing by Stephanie Nebehay and Noah Barkin)

The Knesset Debates Israel's Nuclear Program

Arms Control Today » March 2000

For the first time in its history, the Knesset, the Israeli parliament, held a discussion of Israel's nuclear program February 2. Issam Mukhul, an Arab member of the communist Hadash Party, spurred debate on the controversial and previously off-limits subject by petitioning the Israeli Supreme Court to allow a hearing in the face of stiff opposition from the Knesset leadership. But before the Supreme Court could rule, the leadership agreed to a very limited public airing of the issue.

While neither Israel nor the United States has ever officially acknowledged the existence of an Israeli nuclear weapons program, Israel is widely considered a *de facto* nuclear weapons state. Estimates of the size and composition of the Israeli arsenal vary from 50 to hundreds of warheads. Israel is not a signatory to the nuclear Non-Proliferation Treaty. It has signed but not ratified the Comprehensive Test Ban Treaty.

\$2.775 billion in US aid supports Israeli nuclear weapons program

Grant F. Smith June 29, 2009

President Barak Obama's fiscal year 2010 budget request for \$2.775 billion in military aid to Israel is proceeding smoothly through the Congress.

On June 17, the House Appropriations Subcommittee on State, Foreign Operations, and Related Programs held a "mark-up" session on the budget. The subcommittee came under pressure from an antiwar *group that sought to suspend or condition foreign aid over Israel's use of US weapons which left 3000 Palestinians dead during the Bush administration*. The subcommittee held its session in [a tiny Capitol room](#) denying activists and members of the press access. The budget quickly passed and is now before the full House Appropriations Committee.

Israel enjoys "unusually wide latitude in spending the [military assistance] funds," according to the *Wall Street Journal*.

Unlike other recipients that must go through the Pentagon, Israel deals directly with US military



Carnegie Endowment for International Peace, *Deadly Arsenals* (2002), www.ceip.org

The abbreviated debate, which lasted just under one hour, featured loud exchanges between angry parliamentarians who objected to public discussion of the nuclear issue, and Mukhul and other Arab members who strongly criticized the program on environmental and security grounds. Chaim Ramon, the government's minister for Jerusalem affairs, reiterated Israel's long-standing policy that it would not be the first nation to introduce nuclear weapons into the Middle East.

contractors for almost all of its purchases. This gives the US based Israel lobby, particularly the American Israel Public Affairs Committee (AIPAC), an influence multiplier on Capitol Hill. Large contractors proactively segment military contracts across key congressional districts to make them harder to oppose. As contractors and local business interests fight for Israel's favor, AIPAC can turn away from shepherding the massive aid package to dedicate considerable resources toward Iran sanctions.

Representative Mark Steven Kirk (R-Illinois) [sponsored an amendment](#) to the foreign operations bill that would prevent the Export-Import Bank of the United States from providing loan guarantees to companies selling refined petroleum to Iran. According to the *Washington Report on Middle East Affairs*, Kirk is the top 2008 recipient of [Israel political action committee \(PAC\) contributions](#) (PDF). Kirk received \$91,200 in the 2008 election cycle and more than \$221,000 over his career.

Kirk's AIPAC sponsored sanctions legislation passed the House Appropriations Committee on June 23. While tactically positioned as a rebuke to the crackdown on Iranian election protesters, the measure is only the most recent of strategic long-term [AIPAC sponsored sanctions](#) against Iran's nuclear program.

Israel contends Iran is secretly developing nuclear weapons under the auspices of a civilian program, though no hard evidence has emerged. However, an illicit nuclear arsenal in the region has been positively identified.

The [US Army](#) (PDF), former President [Jimmy Carter](#), and Assistant Secretary of State [Rose](#)

[Gottemoeller](#) have all recently confirmed that the only country in the Middle East that has deployed nuclear weapons is Israel. The Symington and Glenn [amendments](#) to foreign aid law [specifically prohibit US aid](#) to nuclear states outside the Nuclear Nonproliferation Treaty (NPT). Iran has signed. Israel hasn't.

Congress can't have it both ways on taxpayer funded sanctions and rewards. If gasoline imports indirectly support Iran's nuclear ambitions, then \$2.775 billion in cash for conventional US weapons and military technology clearly allows Israel to spend other resources on the development and deployment of its illicit nuclear arsenal.

Recently released [CIA files](#) long ago forecast that such an arsenal would not only make Israel more "assertive" but also reluctant to engage in bona fide peace initiatives. Cutting the massive and indirect US subsidization of nukes and forcing Israel to sign the NPT would go further in averting a nuclear arms race and conflicts in the region than targeting Iranian consumers at the gas pump. It would also demonstrate to the American public that the president and Congress, even under the pressure of AIPAC, won't blatantly violate US foreign aid laws by publicly [pretending](#) Iran -- rather than Israel -- is the region's nuclear hegemon. Copyright © 2009 [IRmep](#)

Grant F. Smith is director of the Washington, DC-based Institute for Research: Middle Eastern Policy and author of the book "Foreign Agents: The American Israel Foreign Affairs Committee from the 1963 Fulbright Hearings to the 2005 Espionage Scandal."

Iran demands West accept counter plan on nuclear program

(CNN) -- January 2, 2010 7:33 p.m. EST Iran's foreign minister on Saturday issued an ultimatum to the West: Either renegotiate the United Nations-backed deal on Iran's nuclear program, or the Islamic republic will enrich nuclear fuel on its own.

Foreign Minister Manouchehr Mottaki said the West has until the end of January to accept a counter deal proposed by Iran, though he didn't give details on Iran's offer, according to state media. Otherwise, Iran will "officially declare" that it will produce enriched fuel at 20 percent, Mottaki said.

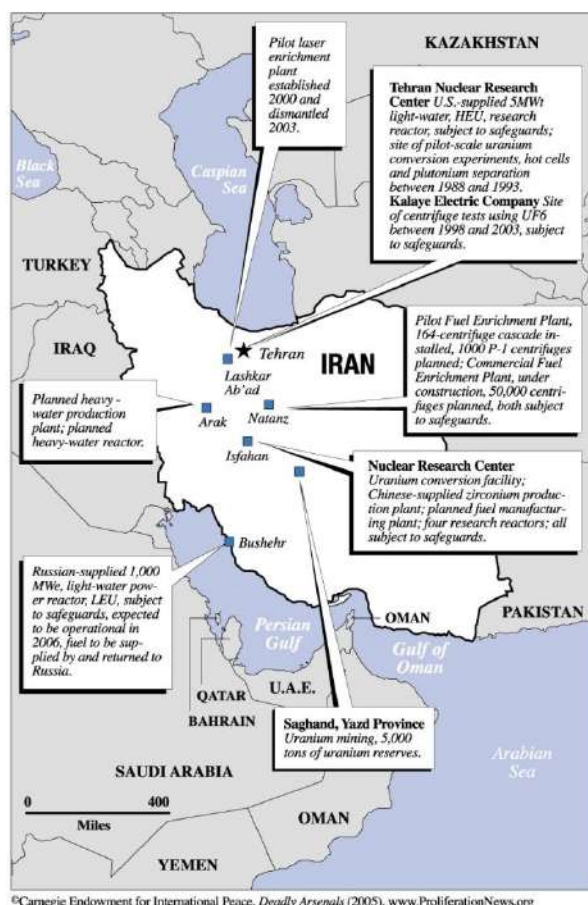


Iranian Foreign Minister Manouchehr Mottaki gave no details of the Iran's new counteroffer to the West.

Mottaki's comments came two days after Iran failed to meet a year-end deadline to accept a deal offered in October by the "P5 plus one" -- permanent United Nations Security Council members Britain, China, France, Russia and the United States, plus Germany. The six nations offered Iran a deal to send most of its low-enriched uranium abroad for conversion into fuel for a medical reactor in Tehran. The International Atomic Energy Agency (IAEA), the U.N. nuclear watchdog, has proposed that Iran send low-enriched uranium to Russia and then France for processing. Last month, Mottaki said the country was ready to give up some 400 kilograms of 3.5 percent enriched uranium in exchange for 20 percent enriched fuel that would power the reactor used in cancer research, according to state-run Islamic Republic of Iran Broadcasting. But Iran's counter deal appears inconsistent with the IAEA draft agreement,

which asks for 1,200 kilograms of low-enriched uranium, a senior State Department official told CNN.

According to Iran's state-run Press TV, the reactor will soon run out of fuel. And Iran has not accepted the IAEA proposal because it says it wants "concrete guarantees" that its fuel will be returned, said Foreign Ministry spokesman Ramin Mehman-Parast, that network reported. The controversial deal could reduce the amount of material Iran has to make a nuclear bomb, and the United States and some of its allies fear Iran's goal is to do just that. Tehran, however, has insisted its nuclear program is only for peaceful purposes



Tehran Plans a Major Military Exercise

Drill to Boost 'Defensive Capabilities' Coincides With Deadline Set by Iran on Nuclear Offer

By **CHIP CUMMINS**, Wall Street Journal JANUARY 4, 2010

Iranian media on Sunday reported Tehran will conduct a large-scale defensive military exercise next month, coinciding with what government officials now say is a deadline for the West to respond to its counteroffer to a nuclear-fuel deal.

The commander of Iran's ground forces, Brig. Gen. Ahmad-Reza Pourdastan, said the drill will be conducted by Iran's army, in conjunction with some units of the Islamic Revolutionary Guard Corps, to improve "defensive capabilities," Press TV, the English-language, state-run media outlet reported. The report follows

US Assets surround Iran



comments by Iran's foreign minister Manouchehr Mottaki on Saturday, challenging Western nations to decide by the end of the month on counterproposals Tehran has floated to an internationally brokered nuclear-fuel deal. In the counterproposals, Iran has said it

would agree to swap the bulk of its low-enriched uranium for higher enriched uranium, but in small batches and on Iranian soil. Iranian officials also have named Turkey as a possible venue to swap the fuel. Iran has separately suggested it would be willing to buy enriched uranium from a third party.

The U.S. and Western allies have dismissed the counterproposals outright. In autumn, negotiators from Iran, the U.S., France, Russia and the International Atomic Energy Agency hammered out a proposed deal in which Iran would agree to ship out the bulk of its uranium to Russia, where it would be enriched and shipped back for use in a medical-research reactor. But Iranian officials refused to endorse the deal, despite a U.S.-imposed year-end deadline for Tehran to show progress in talks. An IAEA spokesman declined to comment on the latest Iranian statements. A European diplomat said that on Monday, the diplomatic year begins with a "review of measures the international community can use to increase its pressure on Iran" to begin serious negotiations.

The administration of U.S. President Barack Obama has said it would push for new sanctions against Iran early this year if Tehran

didn't respond positively to the nuclear-fuel deal. Israeli officials, meanwhile, have suggested they would strike militarily if they thought Iran was nearing nuclear-weapons capability. Mr. Obama has "begun talking to our friends and allies to consider the next step in this process," National Security Council Chief of Staff Denis McDonough said last week in Honolulu.

The U.S. is expected to push for United Nations-backed sanctions, despite uncertain support from Security Council members Russia and China. Washington is also consulting allies who might be willing to back sanctions outside the U.N., including Saudi Arabia and the United Arab Emirates.

Arab support would further isolate Iran from some of its closest trading partners. While Iran and its Arab neighbors along the Persian Gulf have long had testy relations, Tehran depends on Arab Gulf states for significant trade -- in particular on the U.A.E.'s Dubai, a regional re-export hub.

Not all Arab neighbors are onboard with Washington's sanction plans. In a heavily attended security conference in Manama early last month, Bahrain's foreign minister said further Iranian sanctions wouldn't be fair. "I think the people of Iran have had enough," Sheikh Khalid bin Ahmed Al Khalifa said to delegates, including Mr. Mottaki and top U.S. diplomats and military officials. Bahrain is a staunch American ally, hosting the U.S. Fifth Fleet.

Recent Iranian domestic unrest raises fresh challenges for the Obama administration in crafting any new sanctions. Officials must weigh measures that are tough enough to pressure the regime, but not too tough to enflame popular anger and shore up domestic support for President Mahmoud Ahmadinejad.

The original, IAEA-backed fuel proposal was embraced by Washington because it was seen as a first step in a longer negotiating process over Iran's nuclear ambitions.

Iran says it is pursuing peaceful energy, but many officials in the West suspect it's building weapons. The deal would have removed enough fissile material to delay the manufacture of any weapon for at least a short while.

Mr. Mottaki on Saturday said Iran would go ahead and produce and enrich its own fuel for the medical reactor if Western powers didn't agree either to swap the fuel or to sell it enriched uranium.

The U.S. has rejected any proposal other than the one hammered out with the IAEA. "The IAEA has a balanced proposal on the table that would fulfill Iran's own request for fuel and has the backing of the international community," Mike Hammer, a spokesman for the National Security Council, said in an emailed statement.

—Elizabeth Williamson in Honolulu and David Crawford in Berlin contributed to this article.

Iran Not Committed to Building Nuclear Bomb, Pentagon Intel Chief Says

Friday, Jan. 15, 2010

The U.S. Defense Department's intelligence chief said that although Iran has been developing the means to build nuclear weapons, the Middle Eastern nation has not yet made a final decision to do so, Voice of America reported this week (see [GSN](#), Jan. 14).



(Jan. 15) - U.S. Defense Intelligence Agency Chief Lt. Gen. Ronald Burgess, shown in 2004, reaffirmed a 2007 intelligence conclusion that Iran has not yet committed to developing a nuclear weapon (Alex Wong/Getty Images).

The conclusion -- originally reached in a comprehensive 2007 intelligence assessment of Iran's nuclear program -- remains valid despite uncertainties about the goals and stability of the nation's government, U.S. Defense Intelligence Agency Chief Lt. Gen. Ronald Burgess said.

"The bottom line assessments of the [National Intelligence Estimate] still hold true," Burgess said. "We have not seen indication that the government has made the decision to move ahead with the program. But the fact still remains that we don't know what we don't know."

The report has proven controversial in the United States and has been dismissed by other nations. Advisers to President Barack Obama have also been said to question the assessment, according to Voice of America.

Iran has insisted its atomic ambitions are strictly peaceful, but that assertion has been received skeptically by the United States and other Western powers. Washington and its allies have expressed particular concern about Iran's uranium enrichment program, which can produce nuclear power plant fuel as well as material suitable for use in weapons.

"The fact is, Iran is not dealing straight up. So they can say whatever they would like. I'm an intelligence professional. My

Global Security Newswire

by National Journal Group

Daily news on nuclear, biological and chemical weapons, terrorism and related issues.

job is to verify. And so we continually work on trying to verify what it is the Iranians say. But they are engaged in use of words that is not moving this in a positive direction," Burgess said.

Iranian leaders might have backed away from a U.N. proposal for enrichment of their country's uranium in an effort to win concessions from other negotiating powers, he suggested. The plan sought to defer the Middle Eastern state's ability to produce enough material for a nuclear weapon by refining a large portion of its low-enriched uranium in other countries for use at a Iranian medical research reactor. Tehran has only offered to give up small quantities of its low-enriched uranium at a time in simultaneous exchanges for pre-enriched medical reactor fuel.

"There is always an idea in their head that they can either ultimately get what they've put on the table or move the ball further in their direction. And I think that's clearly one of their aims," he said ([Voice of America](#), Jan. 12).

Russia today indicated that the deal's intended participants were considering counterproposals put forward by Iran, ITAR-Tass reported (see [GSN](#), Jan. 11).

"In early January Tehran presented in the International Atomic Energy Agency (IAEA) additional proposals to this effect. We are considering them and are hoping to come to agreement," said Russian Foreign Ministry spokesman Andrei Nesterenko ([ITAR-Tass](#), Jan. 15).

Meanwhile, Washington is seeking Moscow's assistance in pressuring Iran to halt its disputed nuclear activities, RIA Novosti today quoted a high-level U.S. diplomat as saying.

"The United States believes we should keep the door open to negotiations and involve Iran in cooperation," U.S. Undersecretary of State William Burns told Gazeta.ru. "But we should also make it clear (to Iran) that a nonconstructive response to creative proposals put forward by the international community will not have but consequences" ([RIA Novosti](#), Jan. 15).

Elsewhere, China indicated it would dispatch a less-ranking delegate to a six-nation meeting tomorrow on Iran's nuclear work, Reuters reported.

The five permanent U.N. Security Council members and Germany are expected to consider new international sanctions on Iran at the meeting. China, which wields veto authority over all

Security Council decisions like the body's other permanent members, has repeatedly voiced opposition to additional economic penalties targeting Tehran.

"Chinese Vice Foreign Minister He Yafei will not be able to attend because of scheduling issues. In the current circumstances, we hope that the relevant parties can continue seeking a diplomatic resolution, and demonstrate flexibility," Chinese Foreign Ministry spokeswoman Jiang Yu said.

"Currently, the parties concerned are coordinating on arrangements for the meeting," she said (Arshad Mohammed, Reuters/[Washington Post](#), Jan. 14).

Chinese Foreign Minister Yang Jiechi today noted that all Nuclear Nonproliferation Treaty signatories are entitled to civilian nuclear energy programs, and he called for stepped-up negotiations aimed at resolving the nuclear dispute, the Xinhua News Agency reported ([Xinhua News Agency](#), Jan. 15).

"We are aware that the representation will be below the level of political director," Agence France-Presse quoted U.S. State Department spokesman P.J. Crowley as saying. "It will be a useful meeting to have regardless of the Chinese representation."

"We're gonna work on this issue with our partners," Crowley said. "We continue to engage China and other countries to convince them that the urgency of the situation requires not only additional engagement, but additional support for additional pressure, which obviously China is still working through" (Agence France-Presse/[Spacewar.com](#), Jan. 14).

A member of China's U.N. delegation could attend the talks, several New York-based diplomats told Reuters.

"It's unlikely that the Chinese delegation will have decision-making ability at the meeting, which will make it difficult to accomplish much," said a diplomat representing one of the countries expected to participate in the session.

While some officials suggested the Chinese move might be a gesture of opposition to new proposed sanctions on Iran or U.S. military exports to Taiwan (see [GSN](#), Jan. 14), one European diplomat said "it's not atypical to have a lower level of Chinese representation there."

Beijing might be wary of taking action on Iran during its term heading the Security Council this month, the official suggested.

"There is a slight sense that the Chinese are very cautious about doing anything in New York this month ... (and) for their own bilateral reasons don't want to initiate anything on their watch," the diplomat said (Mohammed, Reuters).

One diplomatic official at the United Nations said tomorrow's meeting had been scuttled altogether, Interfax reported (Interfax, Jan. 14).

In Tehran, the Iranian Foreign Ministry this week unveiled a Persian-language [Web site](#) on the country's nuclear program, Iran's Press TV reported.

"The Web site will gather and update information about different political, legal, historic and geographical developments in the nuclear sphere," Iranian Foreign Minister Manouchehr Mottaki said ([Press TV](#), Jan. 13).



To Obama's Pile of Woes, Add a Failing Iran Policy

By MASSIMO CALABRESI / WASHINGTON Time.com Monday, Jan. 25, 2010

As if President Barack Obama didn't have his hands full at home with his party's loss of Ted Kennedy's seat in Massachusetts, the collapse of health care reform and a disorganized war against the banks, he now faces a major foreign policy setback. Since the 2008 presidential campaign, Obama has promised to curtail Iran's nuclear program by simultaneously offering talks and threatening sanctions. After a year of trying, both approaches appear on the verge of failure.

The President has given Iran two deadlines to demonstrate good faith. Last spring, his Administration told reporters that if Iran didn't show willingness to engage in talks by September, sanctions would follow. Then, in September, when Iran hinted that it might possibly talk, Obama delivered another deadline, this time the end of 2009.

Iran's response to these deadlines has been repeated delays and obfuscation. First, in the spring it delivered a lengthy manifesto about global peace irrelevant to the issues at hand. The summer months were taken up with Iran's election turmoil, but following talks with the U.S. and its international partners in the fall, Iran hinted that it might be willing to accept a deal under which it would export most of its enriched-uranium stockpile to be converted into reactor fuel — and then quickly backpedaled as the proposed deal came under a hail of criticism from across Iran's political spectrum. In recent weeks, Iran has made a counteroffer to export its uranium in small parcels over a longer time period that State Department spokesman P.J. Crowley described as "clearly an inadequate response."

The idea behind Obama's engagement effort, though, was that if Iran kept stalling, countries previously opposed to sanctions, such as Russia, China and Germany, could be persuaded to support new punitive measures aimed at forcing Iran to cooperate. "We actually believe that by following the diplomatic path we are on, we gain credibility and influence with a number of nations who would have to participate in order to make the sanctions regime as tight and as crippling as we would want it to be," Secretary of State Hillary Clinton told the House Foreign Affairs Committee in last April. So, how's that working? Not very well, by all indications.

True, with Iran stalling, the Germans seem to be playing along, although earlier in the year they said they'd only support sanctions if approved by the U.N. And while senior American officials and European diplomats say Russia has come around to supporting sanctions, nothing that has happened publicly has confirmed that claim — and the signals from Moscow remain mixed.

But where Russia had previously taken the lead in blocking sanctions efforts, that role has now fallen to China, which has a rapidly growing stake in Iran's energy sector. Beijing believes that while Iran must be brought into compliance with the international nonproliferation regime, its nuclear program does not represent an imminent danger of producing nuclear weapons and diplomacy should therefore be given a lot more time.

Beijing has bluntly opposed any effort to introduce new punitive measures against Iran, and last weekend China's Deputy Foreign Minister snubbed his counterparts from the U.S., Britain, France, Russia and Germany and sent only a low-level official to a meeting called to discuss new efforts to pressure Tehran. "The meeting we had last weekend was not great," says a European diplomat. "The Chinese sent someone along who said, 'I can't make any decisions.' " Worse, the Chinese have become allergic to the very mention of sanctions. After last weekend's meeting, a senior European diplomat speaking on background with reporters declined even to utter the word *sanctions* for fear of upsetting Beijing.

Without China, which holds a Security Council veto, there is no prospect of meaningful sanctions at the U.N. That in turn means difficulty getting tough sanctions from all the European countries, some of whom can't act without U.N. approval.

Now Obama faces the unpleasant reality that neither the engagement track nor the sanctions track appear to be going anywhere. His defenders at home and abroad say it was the right way to proceed, but skeptics of Obama's policy are emerging, even in his own party. "What exactly did your year of engagement get you?" asks a Hill Democrat.

So what options does Obama have left? Some European and American diplomats hold out hope that they will be able to bring China around. But privately they say the U.S. and its allies may need to move ahead on their own, without China. "No one wants to go there," says the European diplomat, but "what we're saying to the Chinese now explicitly is there's no point in going forward together" if the current approach isn't changing Iran's behavior.

Splitting the international community has been Iran's goal from the start, and unilateral sanctions could be fatally undermined if a bloc of countries that trade with Iran, such as China, Russia, Turkey and India, don't comply. The very fact that the U.S. and its allies are even thinking of going it alone is a sign of just how much trouble Obama's policy is in.

Iran Nukes Deal: What if Ahmadinejad Is Serious?

By Tony Karon Friday, Feb. 05, 2010 **TIME**

Conventional wisdom on Iran's latest response to a deal over shipping out enriched uranium is that Tehran is simply maneuvering to dodge sanctions. After all, President Mahmoud Ahmadinejad's comment Tuesday that Iran would have "no problem" shipping out some of its stockpile in exchange for reactor fuel comes months after he first welcomed the deal, and then demanded that it be renegotiated. And it coincides with the Obama Administration going to the mat to press for new sanctions against Iran. Still, even though Iran has long been adept at dividing international opinion and rolling back the red lines of its adversaries, there may be more to the latest indications out of Tehran than simply posturing.

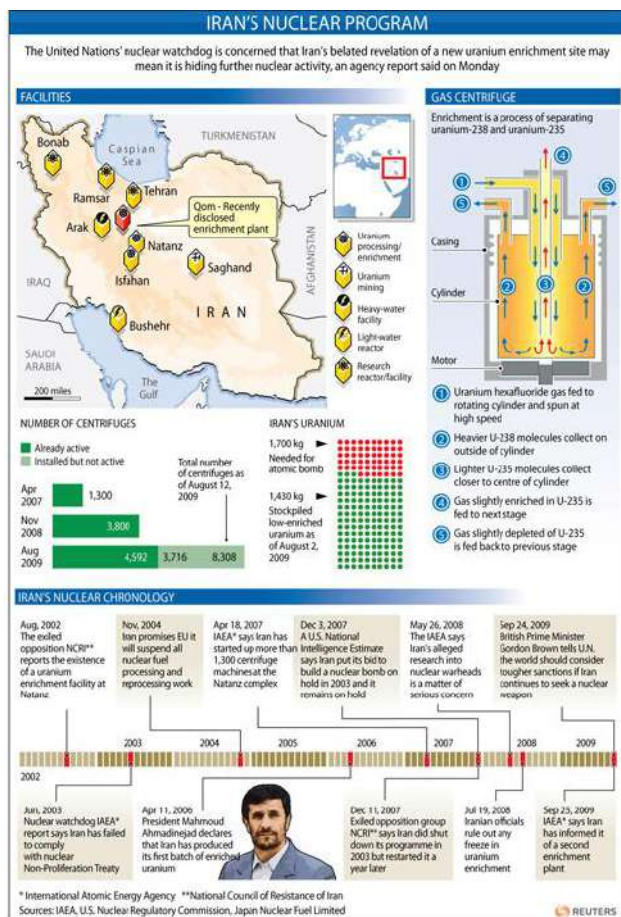
firestorm of criticism of the agreement from Iran's entire, fractious political spectrum. Tehran's demand for changes was rejected by the U.S. and its allies, who insisted that the package could not be renegotiated — and with Iran declining to accept its terms, Western powers began to press for new sanctions. Some of Iran's key trade partners, however, demurred, and other players began discreetly negotiating in search of a compromise to break the deadlock.

Reports have suggested that Ahmadinejad's latest statements may reflect progress in efforts to broker a plan for Japan to act as the guarantor that Iran would receive the processed reactor fuel — on a four- to five-month time frame, according to

Ahmadinejad's statement — in exchange for the uranium it ships out into Japanese custody. (Ahmadinejad's new time frame appears to be a compromise between the original proposal, which envisaged a one-year lag between Iran exporting its uranium and receiving fuel rods, and Iran's demand for a simultaneous exchange on its territory. But until Iran formally delivers a new proposal to the IAEA, the details of any new proposals will remain a matter of speculation.)

The Iranian President could, of course, be simply trying to throw a wedge into Washington's sanctions effort, playing for time by raising false hopes of a deal. The Administration is struggling to win U.N. endorsement for meaningful new measures, with China in particular pushing back hard (and the escalating diplomatic spat between Washington and Beijing over Taiwan, the Dalai Lama and currency issues is unlikely to help persuade the Chinese to support new sanctions on Iran). Ahmadinejad could also be playing domestic politics, demonstrating his power to make deals with the West.

But there could be a simpler explanation for Ahmadinejad's apparent desire to revive the reactor-fuel deal: the Tehran Research Reactor, which produces medical isotopes, will run out of fuel this year, and it was Iran's attempts to buy new fuel that created the opening for the deal involving Iran sending its uranium



Ahmadinejad had initially crowed over the deal brokered last October, but was forced to backpedal by a

abroad for reprocessing. Although Ahmadinejad likes to boast that if Iran can't acquire such fuel abroad, it will create it at home, that would take months or years of work, and the reconfiguring of Iran's centrifuges to produce a higher grade of enrichment would raise fears of the possibility of weaponization, and possibly calls for military action.



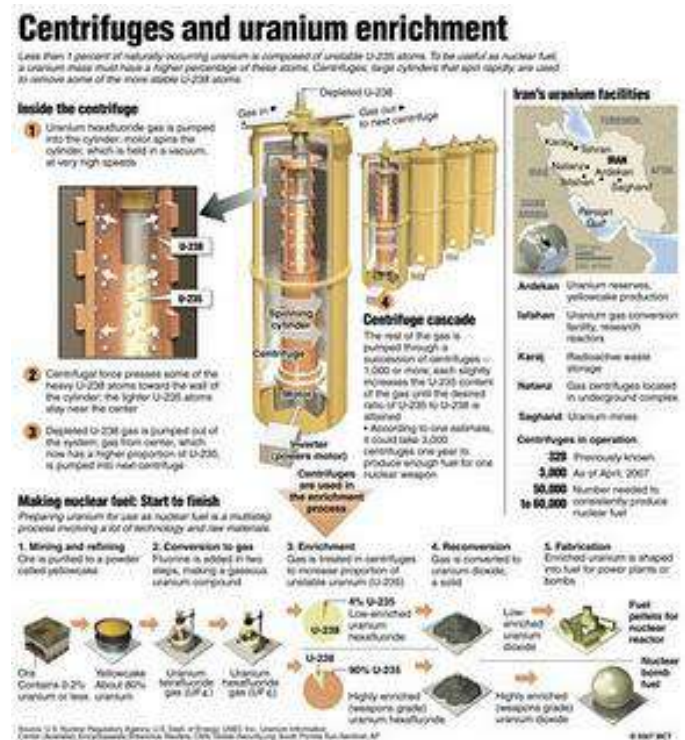
Still, as much as Iran needs the reactor fuel — and also needs to avoid any sanctions that would raise domestic economic hardship — Ahmadinejad also has to deal with suspicions among Iran's leaders that the deal was a trick that would deprive Iran of most of its hard-won uranium stockpile. That, of course, is a stated goal of the Western powers in pursuing the deal, because it would remove from Iran three-quarters of a stockpile that could, hypothetically, be reprocessed to create material for a single nuclear bomb. Replenishing that amount, at current rates of output, would take Iran the best part of a year, during which time Western powers hope to persuade Iran to end uranium enrichment altogether. But Iran has no intention of ending enrichment: the nuclear program is strongly backed by all major political factions in Tehran, and most of the international community accepts Iran's right to enrich uranium for peaceful purposes.

Regardless of which version of the reactor-fuel deal, if any, is agreed on, the episode highlights the fact that it's unlikely to open the way to Iran accepting the broader Western demand that it cede its right to enrich uranium in exchange for various economic and political incentives. But if Iran makes a new offer on the reactor deal deemed reasonable by the likes of China and Russia, that could kill off prospects for further effective sanctions. And the dilemma would be deepened for Washington by the fact that Ahmadinejad clearly intends to profit politically from

any deal at a moment when Obama is being urged by a growing chorus in Washington to throw in his lot with the embattled yet resilient opposition.

Still, the Western powers have more time to find a diplomatic solution than some of the more alarmist scenarios suggest. Testifying on Capitol Hill Tuesday, Director of National Intelligence Admiral Dennis Blair emphasized that the U.S. intelligence community's assessment is that Iran has not yet decided whether to build nuclear weapons, but that it is developing capabilities that would give it the option to produce such weapons "should it choose to do so." He added: "We do not know, however, if Iran will eventually decide to build nuclear weapons, although it would be technically capable of doing so in the next few years."

Nobody's sure what exactly Iran will propose, and the U.S. and its allies remain skeptical. But the fact that they're unable to dismiss Ahmadinejad's latest statements out of hand is a reminder that the diplomatic game remains in play, and Iran still holds some cards.

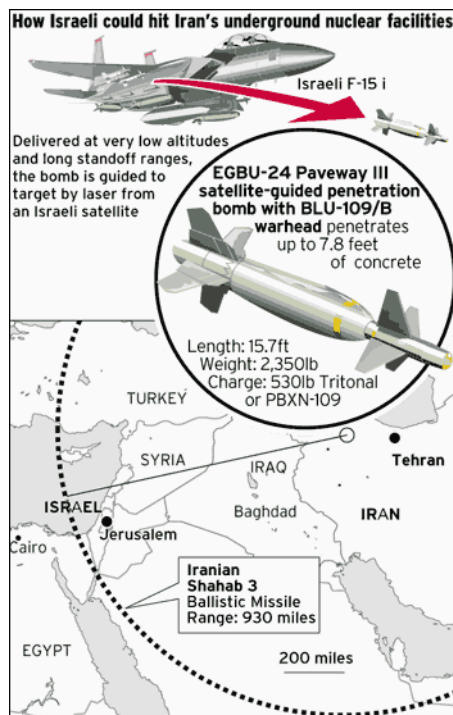


Iran government survival hinges on nuclear issue: Israel

HERZILYA, Israel (Reuters) - World powers trying to persuade Iran to curb its nuclear program must make clear to the leadership in Tehran that its survival is at stake, a senior Israeli official said Wednesday.

Israel, alarmed at the prospect of Iran having atomic weapons, has endorsed diplomatic pressure on Tehran but fears new sanctions may be too weak to dissuade it from producing enriched uranium.

Israeli Vice Prime Minister Moshe Yaalon said unrest inside Iran since a disputed presidential election in June had made the government vulnerable.



"In essence, the Iranian regime must be given the choice: either a bomb or survival," Yaalon, a retired chief of Israel's armed forces, told a national security conference in Herzliya.

He said the Tehran government should be persuaded "that giving up the idea of crossing the (nuclear) threshold is the preferable path, or else it risks its basic interest, to survive in power."

Yaalon did not offer specific suggestions, although he noted Iran slowed down its nuclear program in 2003, the year a U.S.-

led coalition invaded Iraq in response to allegations its leader Saddam Hussein was developing weapons of mass destruction.

Israeli officials have privately voiced hope that the United States and European powers will overcome resistance by Russia and China to new U.N. Security Council sanctions capable of hitting Iran's energy sector.

Some in Israel want the administration of U.S. President Barack Obama to do more to bolster Iranian dissidents who oppose President Mahmoud Ahmadinejad.

Israel, assumed to have the Middle East's only atomic arsenal, has hinted at the possibility of pre-emptive strikes against Iranian nuclear facilities if it believes diplomacy has failed.

Many political analysts believe Israel would be loath to act against the wishes of the United States, which has spoken out against the idea of igniting a new regional conflict.

"It is important to continue to make clear to the extremist Iranian regime that all options are still on the table and that ignoring the international demands can end in the worst way," Yaalon said.



"Despite the time that has been wasted on diplomatic efforts and the like ... Iran may still be stopped," he said. "The coming period will be decisive for the chances to achieve it."

Iran says its plans to enrich uranium, a process that can be used to make bomb fuel, are for peaceful purposes only.

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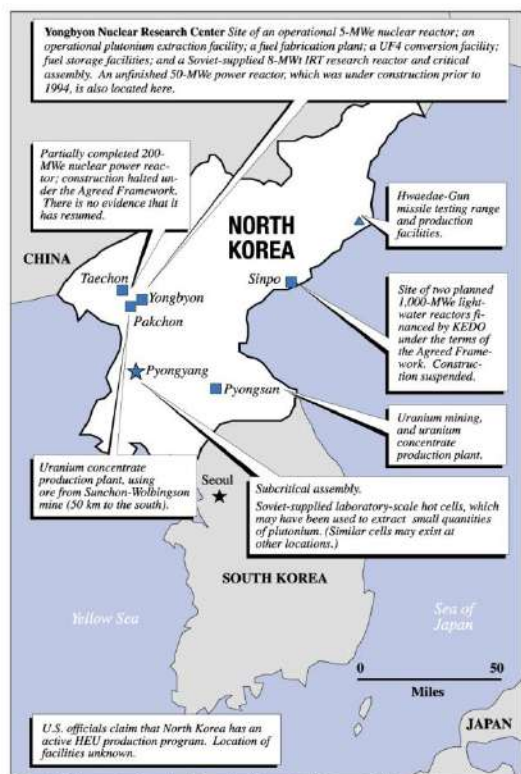
N Korea call for peaceful relations with US

Friday, 01, Jan 2010 12:00

By Elizabeth Davies.

A New Year's message from North Korea has pledged to "put an end to the hostile relationship" with the United States.

The joint editorial from the state's three major newspapers has raised hopes that the country could rejoin disarmament talks in 2010.



Last year witnessed a setback in attempts to curb North Korea's nuclear programme. In April and May it carried out two missile tests, bringing condemnation from the international community and the tightening of sanctions. In response, North Korea walked out of the six-party talks which have been trying to resolve the situation since 2003.

Analysts are hopeful that 2010 will be more successful in encouraging the regime to give up its nuclear plans. The annual New Year's message is pored over for indications of the state's likely policy in the coming year, and experts agree that 2010's message is unusually conciliatory.

Cheong Seong-chang, a senior analyst at the Sejong Institute security thinktank, told the Associated Press that the country had "extended an olive branch to the US". The editorial affirmed North Korea's commitment to "establish a lasting peace system on the Korean peninsula and make it nuclear-free through dialogue and negotiations".

However, such "dialogue and negotiations" have made slow progress in recent years. In December bilateral talks between the regime and the US envoy, Stephen Bosworth, accomplished little in the way of verifiable results, although North Korea claimed the two sides had "narrowed differences in their respective views".

Despite the less aggressive tone, North Korea is unlikely to commit to disarmament until its own requirements are met. Its negotiating position in six-party talks and in later bilateral meetings has been that normalization of diplomatic relations with the United States and peace talks with South Korea must precede any nuclear agreement.

Although the Korean War is generally recognised to have ended in 1953, this was accomplished through a truce, rather than a peace treaty. North Korea consistently uses this as justification for its fears of invasion from the United States and South Korea, where American troops remain stationed. Many in these two countries fear that the call for peace talks by the North is merely designed to distract the international community from its expanding cache of nuclear weapons.

The editorial was also warm towards the North's southern neighbour, claiming that its commitment to "improve the north-south relations" was "unshakable". Lee Myung-bak, South Korea's president since February 2008, has been more conservative towards the North than his predecessors. He won on an election pledge to strengthen relations with the United States, and has scaled back his country's aid flows to the North. Nevertheless, in December there were signs of increasing cooperation, as

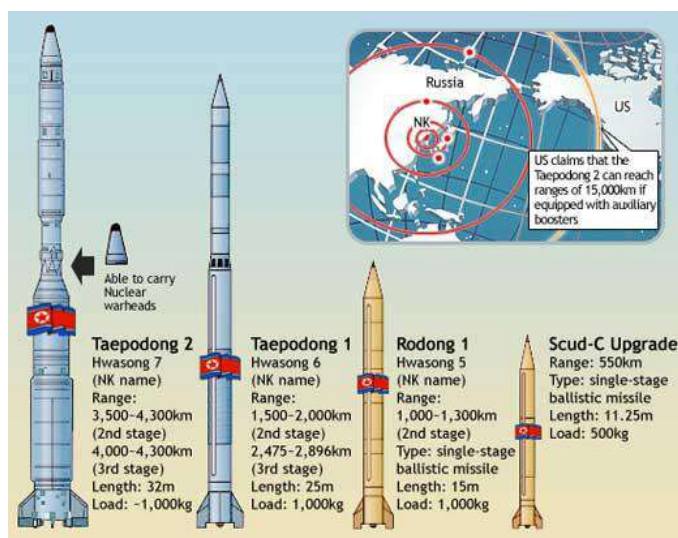
North Korea accepted an offer from the South of much-needed swine flu medication.

A New Year's message from North Korea has pledged to "put an end to the hostile relationship" with the United States.

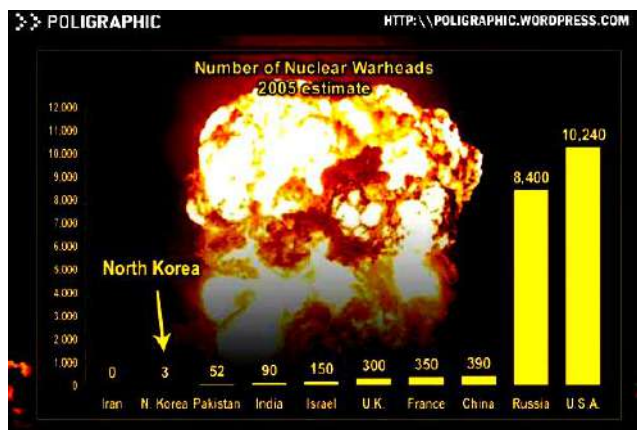
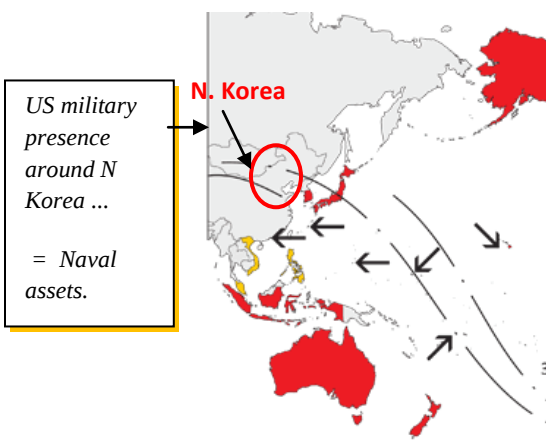
In August North Korea's relations with the United States took a surprising turn, as former President Bill Clinton met the country's leader to negotiate the release of two American journalists. Kim Jong-il's agreement led to a thawing of relations, and the first bilateral high-level negotiation between the two countries.

Whether 2010 will see any concessions made by North Korea over its nuclear programme is unclear. A US State Department official, speaking anonymously, told the AFP news agency that while the New Year's message was welcome: "Actions speak louder than words". The action the United States would no doubt view as the strongest commitment to lasting peace is a resumption of the stalled six-party talks.

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Below is the US military advantage in bases and nuclear weapons



Advisory Panel Says Warhead Life-Extension Could Suffice for Decades

Friday, Nov. 20, 2009

By Elaine M. Grossman

Global Security Newswire

WASHINGTON -- A top-level independent advisory panel has told the Obama administration that the aging U.S. nuclear arsenal could remain viable for years to come using standard warhead life-extension approaches (see [GSN](#), Nov. 9).



Nov. 20) - *Thomas D'Agostino, head of the U.S. National Nuclear Security Administration. The agency last month received an expert report that found that existing warhead life-extension approaches could keep the nation's nuclear arsenal viable for decades (U.S. National Nuclear Security Administration photo).*

If embraced by Washington, the finding would suggest that the United States could avoid building an expensive new generation of nuclear warheads to replace those currently fielded.

"Lifetimes of today's nuclear warheads could be extended for decades, with no anticipated loss of confidence, by using approaches similar to those employed" in maintaining the stockpile to date, according to JASON, a panel of senior scientific and technical experts frequently consulted by the U.S. government.

The findings are already proving controversial, though more than a year has passed since Congress twice denied Bush administration funding requests for developing a new series of weapons -- called the Reliable Replacement Warhead -- aimed at modernizing U.S. nuclear arms (see [GSN](#), Nov. 7, 2008).

President Barack Obama's national security team remains split over how best to keep the stockpile functioning, even as the White House embarks on an ambitious agenda aimed at eventually eliminating nuclear weapons (see [GSN](#), Aug. 18).

Defense Secretary Robert Gates and some of his top generals have insisted that at least one or two vintage warheads would have to be replaced with more modern designs if the nuclear arsenal is to remain functional (see [GSN](#), Sept. 24).

Arguing last year that replacement approaches should be developed, Gen. Kevin Chilton described warheads as "actually little chemistry experiments that are cooking away." In the absence of explosive nuclear testing to gauge their gradual degradation, "I sense there's a cliff out there someplace, and I don't know how close I am to the edge of that cliff," said the general, the military's top combatant commander for nuclear weapons (see [GSN](#), Sept. 12, 2008).

Since the early 1990s, the United States has maintained a moratorium on underground nuclear tests. Whether the Senate will formalize that policy by ratifying the Comprehensive Nuclear Test Ban Treaty -- a top Obama administration objective -- has yet to be seen.

Vice President Joseph Biden has led a contingent arguing behind closed doors that new U.S. warheads are unwarranted and could undercut international support for Washington's nonproliferation and disarmament goals. It might be difficult to convince other nations to condemn suspected nuclear-weapon development programs in places like Iran or North Korea if the United States is seen as expanding its own arsenal of atomic warhead designs, according to this line of thinking.

Global Security Newswire last week broke the story that the JASONs' secret report had found that the existing stockpile could remain safe, secure and reliable without the introduction of more modern warhead designs.

A House committee last year commissioned the assessment of warhead life-extension programs. The panel's final document was submitted in October to the National Nuclear Security Administration, a semiautonomous arm of the Energy Department.

An unclassified "executive summary" of the JASON report -- now widely circulating after it was obtained by the New America Foundation's Jeffrey Lewis and posted yesterday to his [blog](#) -- appears to offer Biden's camp a boost.

"JASON finds no evidence that accumulation of changes incurred from aging and [life-extension programs] have increased risk to certification of today's deployed nuclear warheads," the document states.

Current U.S. Nuclear Warhead-Types and Associated Delivery Systems					
Bombs					
Type	Description	Delivery System	Laboratories	Mission	Military Service
B61 3/4/10	Tactical Bomb	F-15, F-16, & Tornado	LANL/SNL	Air to Surface	Air Force
B61 7/11	Strategic Bomb	B-52 & B-2	LANL/SNL	Air to Surface	Air Force
B83 0/1	Strategic Bomb	B-52 & B-2	LLNL/SNL	Air to Surface	Air Force
Warheads					
Type	Description	Delivery System	Laboratories	Mission	Military Service
W62	ICBM Warhead	Minuteman III ICBM	LLNL/SNL	Surface to Surface	Air Force
W76	SLEB Warhead	D5 Missile, Trident Submarines	LANL/SNL	Underwater to Surface	Navy
W78	ICBM Warhead	Minuteman III ICBM	LANL/SNL	Surface to Surface	Air Force
W80-0	TLAM-N	Attack Submarine	LANL/SNL	Underwater to Surface	Navy
W80-1	ALCM/ACM	B-52	LLNL/SNL	Air to Surface	Air Force
W87	ICBM Warhead	Minuteman III ICBM (future delivery system)	LLNL/SNL	Surface to Surface	Air Force
W88	SLEB Warhead	D5 Missile, Trident Submarines	LANL/SNL	Underwater to Surface	Navy



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Vatican Letter: For Pope Benedict, a different shade of green

January 20th, 2010 By John Thavis

VATICAN CITY (CNS) — Over the last few months, Pope Benedict XVI has opened a wider dialogue on the subject of environmental protection, and in the process put a sharper focus on an issue that's become central to his pontificate. It's increasingly clear that the "green" label slapped onto Pope Benedict after he installed solar panels at the Vatican and joined a reforestation project in Europe was not the whole story. Now the pope is defining which shade of green — in moral arguments that are not always popular.

The pope began weighing in on environmental themes in 2006. His strong defense of the Amazon's fragile ecology, his appeals for safe water and his warnings on pollution's burden on the poor all received general acclamation. When he approved the installation of solar panels on several Vatican buildings and funded tree-planting in Hungary, the Vatican drew praise for trying to become the world's first carbon-neutral state. But lately, the pope's words on ecology have raised eyebrows and even some objections.

In a speech Jan. 11 to the diplomatic corps accredited to the Vatican, the pope extended the discussion of "human ecology" to same-sex marriage. "Creatures differ from one another and can be protected, or endangered, in different ways, as we know from daily experience. One such attack comes from laws or proposals which, in the name of fighting discrimination, strike at the biological basis of the difference between the sexes," he said. That prompted protests from homosexual activists, including the head of an Italian gay organization, who said the pope's linkage of gay marriage and ecological irresponsibility was "almost comical." Pope Benedict, however, was not trying to score a cheap political point. His argument touched on what might be called the leitmotif of his pontificate: that man is not God, and that man's actions should correspond to God's plan — or, as he phrased it to the diplomats, to "the structure willed by the Creator."

This is a long-held opinion of the German pontiff. In 2004, in a major Vatican doctrinal document on the relationship of men and women, then-Cardinal Joseph Ratzinger said the "obscuring of the difference or duality of the sexes" was part of a misguided effort to free the human being from biological conditioning.

Addressing the diplomats, the pope said he was thinking of legislative initiatives in countries in Europe, North America and South America. Three days earlier, the Parliament in heavily Catholic Portugal was the latest to pass a law that would legalize same-sex marriage. In the same speech, the pope underlined that protecting the environment makes no sense unless it begins with protecting human life, including the life of the

unborn. Here, too, the pope was emphasizing that the church's "green" philosophy always puts the human being at the center, precisely because humans are made in God's image.

Critics might argue that the pope was hijacking environmental issues to push the Church's agenda on the usual topics of abortion and homosexuality. But in fact, the pope's analysis of morality and ecology went in several other directions, too, challenging conventional policies.

One of his strongest points to the audience of diplomats — and one that received relatively little coverage in mainstream media — was that the protection of creation demands a re-allocation of resources away from military spending and the development of nuclear weapons. It echoed an appeal he made for disarmament in his World Peace Day message Jan. 1, which was dedicated to the environment. In that text, the pope said the continued existence of nuclear weapons "threatens the life of the planet and the ongoing integral development of the present generation and of generations yet to come." Likewise, the pope probed the link between war and ecological damage. He noted that many current conflicts around the world arose from a struggle for natural resources, and in turn inflict immense harm on the environment.

He looked at the connection between environmental destruction and migration, and pointed to the drug trade in places like Afghanistan, where agriculture is largely dedicated to the production of narcotics. "If we want peace, we need to preserve creation by rechanneling these activities," In short, the pope's analysis is not a simple one, nor is it easily categorized. His environmental "position" touches on climate change (he urged an international agreement, warning that the future of some island nations is at stake) and the global economic crisis (which he blames in part on the selfish activities of the investment industry).

He sees the ecological crisis as part of a wider moral crisis, and the common denominator is what he calls a "self-centered and materialistic way of thinking which fails to acknowledge the limitations inherent in every creature." With that as a starting point, the pope's continuing catechesis of ecology is likely to keep grabbing attention and ruffling feathers in coming months.

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