

Mr. SHAYS. Thank you, Mr. Tobey.
Mr. Semmel.

STATEMENT OF ANDREW K. SEMMEL

Mr. SEMMEL. Let me say, Mr. Chairman, first of all that I regret that I neither live in Connecticut or Maryland, but I am looking for new housing.

Mr. SHAYS. It is a great place to live.

Mr. SEMMEL. I live in Virginia, unfortunately.

I am pleased to have the opportunity to come before this committee to discuss the Nuclear Non-Proliferation Treaty, the NPT, and steps needed to strengthen the NPT regime. I might say that I appreciate the very thoughtful set of questions that you have sent in your letter of invitation. My prepared statement, which is longer, will address these questions more directly.

It is clear, Mr. Chairman, that the nuclear nonproliferation regime and the NPT face serious and unprecedented challenges today, with unresolved cases of noncompliance and even withdrawal from the treaty. The regime is now at a critical crossroads. One road leads to a crisis stemming from noncompliance of states' parties and the weakening of a nonproliferation regime. The other leads to a strengthening of the treaty regime to keep it strong through the 21st century.

At this moment in history the first order of business must be to ensure that those states not in compliance with their NPT obligations come back into compliance, that no new states develop the capability to produce nuclear weapons, and that no terrorist entity has access to sensitive nuclear materials. Failure to achieve these goals will undermine the NPT and the critical role it plays in promoting nuclear nonproliferation.

The NPT is intended to stop the spread of nuclear weapons and materials related to the production of these weapons. That we could be here today, 36 years after the treaty entered into force, and not count 20 or more nuclear weapon states as some predicted in the 1960's is a sign of the treaty's success. That other states have stepped back from pursuing nuclear weapons capabilities also testifies to its success. But the historical record of success of the NPT should not induce complacency. There is much more work to be done.

One of the key concerns that other states have raised regarding the NPT is the claim that the nuclear weapons states, and particularly the U.S., are not doing enough to fulfill the disarmament provisions embedded in article six of the NPT. Some non-nuclear weapon states argue that, since the nuclear weapon states have not totally eliminated their nuclear weapons stockpiles, the NPT is failing, and that they, the non-nuclear weapon states, should not be required to comply with their obligations to abstain from pursuing nuclear weapons capabilities. They take this view, despite the significant reductions in nuclear arsenals by the United States, Russia, the U.K., France, particularly since the end of the cold war.

We have to explore a range of options and approaches to non-proliferation. The United States has taken a number of unilateral steps that serve to reduce our reliance on nuclear weapons and to reduce the U.S. nuclear stockpile. These are spelled out in detail

in my longer statement, but let me mention here briefly that we have done some of the following:

We have dismantled 13,000 nuclear weapons since 1988.

We have not produced any fissile material for weapons since the late 1980's.

The production of our weapons, HEU, halted in 1964.

We have dismantled more than 3,000 non-strategic nuclear weapons.

Our article six record is significant, and the trend lines in reliance on nuclear weapons have been steadily downward. The chief challenge to the security benefits of the NPT come not from the supposed failure of the nuclear weapon states to disarm, but from the proliferation activities of the treaty's non-nuclear weapon states. While we have been downsizing our nuclear stockpiles, others have started or advanced their nuclear weapons programs. North Korea withdrew from the NPT and then announced it has nuclear weapons. The Kahn network was illegally shipping nuclear materials and weapons designs to other states and Iran's secret nuclear sites at Natans and elsewhere were exposed.

Bilateral efforts between the United States and Russia have led to significant cuts in both nations' nuclear arsenals and stockpiles of fissile materials for use in nuclear weapons. The cooperative threat reduction programs that began in the mid to early 1990's have been instrumental in reducing stockpiles of strategic weapons. Our CTR programs have also been instrumental in redirecting former nuclear weapons scientists to peaceful, sustainable employment.

Multilaterally we are seeking to strengthen the nuclear non-proliferation regime in a number of ways. I will just mention a few: through the full implementation of United Nations Security Council 1540, through universal adherence to the IAEA's additional protocol, through efforts at the Nuclear Suppliers Group to make the additional protocol a condition of nuclear supply, through the creation of the IAEA Committee on Safeguards and Verification, through the expansion of the proliferation security initiative, and through closing the NPT loophole by restricting enrichment and re-processing technology, to site a few examples.

Increasing emphasis on nonproliferation and compliance in multilateral fora, such as the various export control regimes, border security programs, and the convention of the physical protection of nuclear materials are helping to engineer a much-needed paradigm, a shift in the global nuclear nonproliferation regime.

That said, if multilateral organization arrangements fail to impose consequences on those such as North Korea and Iran who violate their nonproliferation commitments, the credibility of such fora will be called into question. The continued failure of the Conference on Disarmament in Geneva, for example, to break the linkages on issues so that negotiation on a fissile material cutoff treaty can begin is emblematic of this problem.

Let me conclude by saying that to be successful we have to be able to adapt to changing circumstances and utilize a full range of nonproliferation tools, some of which I have cited today. We must have a global nonproliferation architecture that ranges from limiting access to dangerous materials and technology and securing

them at the source, to enacting export and border patrols, to impeding WMD-related shipments during transport, and to enforcing domestic, regulatory, and administrative practices to guard against illegal activity.

At the core of all this architecture is the NPT. Without a global consensus as embodied in the NPT, we and other like-minded countries could not marshal enough support to tackle the increasingly important and complex proliferation problems.

That concludes my statement, Mr. Chairman.

[The prepared statement of Mr. Semmel follows:]

Committee on Government Reform

**Subcommittee on National Security, Emerging Threats
and International Relations**

**"Weapons of Mass Destruction:
Current Nuclear Proliferation Challenges"**

**Prepared Statement of Andrew K Semmel
Deputy Assistant Secretary of State
International Security and Nonproliferation Bureau**

September 26, 2006

I am pleased to have an opportunity to come before this committee to discuss the Nuclear Non-Proliferation Treaty (NPT) and the appropriate steps needed to strengthen the NPT regime. I appreciate the thoughtful set of questions posed in your letter of invitation to testify. We ask ourselves these same questions. My presentation is, in large part, tailored to respond to your questions.

It is clear that the nuclear nonproliferation regime and the NPT face serious challenges today. These challenges are more complex and serious than those that the regime has faced in the past. The regime is now at a crossroads. One road leads to a crisis stemming from the noncompliance of States Parties; the other leads to strengthening the treaty regime to keep it strong for the 21st century. We can strengthen implementation of the NPT in many ways but the first order of business must be to ensure that those states not in compliance today come back into compliance and that no new states develop the capability to produce nuclear weapons and no terrorist entity has access to sensitive nuclear materials.

The Nuclear Non-Proliferation Treaty is intended to stop the spread of nuclear weapons and material related to the production of such weapons. That we can be here today, thirty-six years after the Treaty entered into force, and not count twenty or more nuclear weapon states – as some predicted in the 1960s -- is a sign of the Treaty's success. NPT parties can be justly proud of the NPT's contribution to global security.

In some cases, the existence of the NPT has been valuable in restraining the pursuit of nuclear weapons. Some states gave up their programs for developing nuclear weapons, while others, such as South Africa dismantled their existing stockpile and program and joined the NPT. Libya's recent termination of its clandestine program is another success of the non-proliferation regime.

I would now like to address some of the key concerns that other states have raised regarding the NPT. Foremost among these is the erroneous claim that the nuclear weapons states, and particularly the U.S., are not doing enough to fulfill the exhortation in Article VI of the NPT 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, and on a Treaty on general and complete disarmament under strict and effective international control."

Some non nuclear-weapon States argue that, since NWS have not totally eliminated their nuclear weapon stockpiles the NPT is failing and/or that they – the non-nuclear-weapon states – should not be required to strictly comply with their NPT Article II obligations to not pursue nuclear weapons capabilities.. They take this view despite the demonstrable accomplishments in reducing nuclear arsenals by the United States, Russia, the UK, and France.

Among the U.S. accomplishments are the following.

On June 30 of this year the last W-56 warhead was dismantled

On September 19, 2005 the final MX "Peacekeeper" missile was retired.

Over 3000 non-strategic nuclear weapons have been dismantled.

The United States has dismantled more than 13,000 nuclear weapons since 1988.

The United States is now in the process of drawing down its operationally deployed strategic nuclear warheads to the level of 1700-2200, about one-third of the 2002 level.

Upon completion of the Moscow Treaty reductions in 2012, we will have reduced about 80 percent of the strategic nuclear warheads we deployed in 1991.

While ignoring such accomplishments, critics tend to give China, the one Nuclear Weapon State that is increasing its arsenal a free pass. They claim discrimination and resent having agreed to give up the right to develop nuclear weapons while others are allowed to have and keep them. While many of these countries point to the supposed “deal” of the NWS eliminating nuclear weapons in exchange for the Non-Nuclear Weapon States (NNWS) forgoing them, they fail to acknowledge another aspect of the NPT where, by forgoing nuclear weapon programs, they are able to receive assistance to pursue peaceful nuclear programs under comprehensive safeguards. They also fail to acknowledge the significant security benefits that *they* derive from the nonproliferation provisions of the NPT.

This brings us to the peaceful use of nuclear energy. The first paragraph of Article IV of the NPT provides that “nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with articles I and II of this Treaty.” In the second paragraph all Parties “undertake to facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy.” Through the first paragraph, all States Party to the NPT have accepted the condition that their nuclear activities must be carried out in conformity with Articles I and II of the Treaty. Claims by Iran that it is fully entitled under the NPT to receive nuclear cooperation in pursuing its allegedly peaceful nuclear program despite its failure to abide by Articles II or III are untenable. Clearly, confidence in the NPT, as well as states ability to engage in peaceful nuclear cooperation, will be eroded if countries can ignore and even flout their non-proliferation commitments under the Treaty.

The challenge before us is how to bring states such as Iran and North Korea into compliance with the NPT and how to avoid a situation whereby their actions beget a world with more proliferation. It should be clear that dealing with this challenge requires the firm collective action of NPT parties in dealing with violations and violators.

Mr. Chairman, a variety of unilateral, bilateral, and multilateral approaches to global security must be explored in addressing nuclear nonproliferation and disarmament.

The United States has taken many unilateral steps that serve to reduce reliance on nuclear weapons, and reduce the U.S. nuclear stockpile. Bilateral efforts between the United States and Russia have led, and continue to lead, to significant cuts in the two nations' nuclear arsenals and their respective stockpiles of fissile material for use in nuclear weapons.

I mentioned earlier many unilateral steps the U.S. has taken regarding its weapons stockpile. In addition the U.S. has unilaterally removed approximately 184 tons of highly enriched uranium and 52 tons of plutonium from nuclear weapons programs, and placed much of this material under IAEA safeguards. Approximately 90 tons of highly enriched uranium has been down-blended to low enriched uranium for use in civilian fuel.

The U.S. also works bilaterally on nuclear security issues where this is effective. The cooperative threat reduction programs that began in the early and mid-1990s have been instrumental in reducing proliferation of illicitly trafficked nuclear material. According to the International Atomic Energy Agency's (IAEA) recent report on illicit trafficking of nuclear material from 1993 to 2005, the frequency and quantity of illicitly trafficked nuclear material have dropped since the early 1990s. We believe this directly corresponds to the establishment of USG cooperative threat reduction programs such as those well known programs established by the Department of Defense, as well as the Department of Energy's Material Protection Control and Accounting and Second Line of Defense programs and demonstrates their success in stemming proliferation of nuclear material.

CTR programs have also been instrumental in redirecting nuclear weapons scientists to peaceful, sustainable employment.

Additionally, the Department of State utilizes two mechanisms that help to examine the effectiveness of USG cooperative threat reduction and USG nonproliferation assistance programs. The Nuclear Trafficking Response Group (NTRG) coordinates the USG response to reports of nuclear smuggling and the Nuclear Smuggling Outreach Initiative (NSOI) engages states at risk for nuclear smuggling to improve their anti-nuclear smuggling capabilities. These two processes allow us to review known

smuggling incidents and understand the efficacy of USG nonproliferation assistance.

In many cases, despite repeated highlighting of these accomplishments by the U.S. and Russia, the proponents of nuclear disarmament fail to give appropriate credit to those efforts.

On a multilateral basis we are seeking to strengthen nuclear non-proliferation by: full implementation of UNSCR 1540, universal adherence to the IAEA Additional Protocol, and the expansion of the Proliferation Security Initiative. The United States proposal for a Global Nuclear Energy Partnership (GNEP) to expand the use of nuclear energy as an environmentally friendly energy source, reduce waste, and discourage the spread of sensitive nuclear fuel cycle capabilities is another place where multilateralism can make a useful contribution. Increasing emphasis on non-proliferation and compliance in multilateral fora and arrangements can help engineer, over time, a much-needed paradigm shift in the global nuclear non-proliferation regime.

That said, if multilateral fora fail to impose consequences on those who violate their non-proliferation commitments under the NPT, such as North Korea and Iran, the capacity of such fora to deal with these larger and more complex issues will continue to be called into question. Similarly, the continued failure in the Conference on Disarmament in Geneva to break the linkages with unrelated issues in order to begin negotiation of a Fissile Material Cutoff Treaty (FMCT) is emblematic of this problem.

The United States sees no reason to pursue an expansion of its Negative Security Assurances (NSAs), and remains opposed to the negotiation of a binding global NSA treaty. The demand for NSAs from the P-5 originated during the Cold War, when NNWS were alarmed at the prospect of being "caught in the middle" of nuclear confrontation between the superpowers. There is no longer a "middle" along these lines. In the NPT context, today's divide is between those seeking to acquire nuclear weapons in violation of their NPT obligations and those determined to prevent that from happening. The best assurance against nuclear aggression today to directly address the nuclear threat that the DPRK and the Iranian regimes pose to regional and global security, and to deal with illegal proliferation networks such as that formerly run by A.Q. Khan.

Nonproliferation sanctions have weighed heavily on rogue regimes' pursuit of WMD programs. Nonproliferation sanctions, specifically the Iran and Libya Sanctions Act, affected Libya's past policies regarding WMD and support for international terrorism by raising the cost of continuing those policies. The political and economic costs played a role in prompting Colonel Gaddafi's 2003 determination that the pursuit of WMD ran counter to Libya's national security.

Because nonproliferation sanctions cast a spotlight on the activities of a particular state, they help induce other countries and non-state entities to take notice. One of the more noticeable effects of the U.S. Executive Order 13382 has been calling attention to the proliferation activities of particular North Korean and Iranian entities. Banks and other institutions have terminated their business relationships with their North Korean and Iranian counterparts, further impeding North Korea's and Iran's pace of technical advancement.

Recognizing that the proliferation of WMD and related materials, including nuclear weapons and materials, is clearly a threat to international peace and security, the UN Security Council unanimously adopted Resolution 1540 to address certain gaps in the non-proliferation regime. This Resolution requires states to enact and enforce effective legal and regulatory measures to prevent proliferation, with a particular focus on preventing WMD proliferation activities of non-state actors. .

At its core, Resolution 1540 is consistent with UN member states' good faith implementation of their other non-proliferation commitments because it requires states to take concrete steps to combat proliferation. The resolution requires member states to adopt and enforce effective measures to maintain appropriate physical protection and to establish controls against export, transshipment brokering and financing.

The United States has actively pushed for many additional tools to strengthen nuclear material and technology export controls, which will help to keep the material out of the hands of terrorists.

For example, the U.S. encourages all UN Member States to take steps to implement UNSCR 1695, including adopting additional national regulations where appropriate authorities are not in place. Unanimously adopted on July 15, 2006, the Resolution requires Member States to prevent

the transfer of missile and missile-related items, materials, goods, or technology to or from the DPRK's WMD or missile programs. It also requires states to prevent the transfer of financial resources in relation to North Korea's missile or WMD programs.

The Proliferation Security Initiative (PSI) is one of these new tools. First proposed by President Bush in Krakow, Poland on May 31, 2003, nearly 80 nations have now endorsed the statement of principles guiding this effort against the international outlaws that traffic in deadly materials. We are pleased that the PSI was supported by Secretary General Annan and the UN High Level Panel on Threats, Challenges and Change. We reaffirm our determination to strengthen this important new tool.

In his February 2004 speech at the National Defense University, the President proposed that the members of the Nuclear Suppliers Group (NSG) should refuse to sell uranium enrichment or plutonium reprocessing equipment or technology (ENR) to any state that does not already possess full-scale functioning enrichment or reprocessing plants. We introduced the President's February 2004 proposal for blocking the further spread of ENR technology in the NSG in March 2004, and since then the proposal has been extensively discussed in both the NSG and the G-8. Notwithstanding strong opposition in both the NSG and G-8, we have continued to press for agreement on the President's original proposal to ban the transfer of ENR equipment and technology to states that do not possess full-scale functioning plants. We oppose the indigenous development of new enrichment facilities in states not already possessing such facilities because we believe such projects would make it easier for other states to justify ENR programs.

In its July 2006 statement following the St. Petersburg Summit, the G-8 agreed that it would be prudent not to inaugurate any new ENR supply initiatives in the next year. We are prepared to consider as an interim measure a criteria-based approach to ENR transfers so long as the criteria proposed would clearly exclude Iran and other states seeking nuclear weapons from the receipt of ENR technology and equipment, and not provide a checklist that would permit such transfers to problem states. To date, however, we have not seen a criteria-based proposal that meets our requirements.

The President, in partnership with President Putin, also announced in July the Global Initiative to Combat Nuclear Terrorism, an effort to bring

together a growing network of nations that are determined to take effective steps to prevent, protect against, and respond to terrorists seeking to acquire and use nuclear weapons. We are placing a high priority on our efforts to accelerate the development of partnership capacity to combat the threat of nuclear terrorism by working with other departments and agencies and with partner nations to take practical steps to increase our cooperation, including by developing a robust set of multinational exercises and holding expert-level meetings to share best practices. Through these efforts we believe we can help to strengthen nuclear nonproliferation by leveraging and bolstering our existing capabilities.

The United States has continually pressed to strengthen IAEA safeguards since the signing of the NPT. The Additional Protocol, which provides for significant new methods of acquiring information about a states nuclear activities, and for enhanced access by IAEA inspectors, was successfully negotiated in 1997. Since then we have been pressing countries to adhere to the Additional Protocol; almost all non-nuclear weapons states with significant nuclear activities have now signed an additional protocol. In 2004, during our Presidency of the G8, we led an effort to press countries that had not yet done so to conclude safeguards agreements and Additional Protocols with the IAEA. This included a joint letter from G8 all Foreign Ministers. These efforts have continued under the British and Russian G8 Presidencies in 2005 and 2006. We also persuaded Foreign Ministers at the Asia Pacific Economic Cooperation (APEC) forum to adopt the goal of concluding an Additional Protocol by the end of 2005. It was particularly significant that Malaysia concluded an Additional Protocol in 2005.

The President proposed in his February 11, 2004 NDU speech that the NSG agree to require signature of an Additional Protocol (AP) as a condition of supply for transfers of nuclear trigger list items and related technologies by the end of 2005. When the United States tabled this proposal at the March 2004 meeting of the NSG Consultative Group (CG), there was broad support, but the majority of NSG members preferred a British/Austrian proposal requiring implementation of an AP as a condition of supply for nuclear trigger list transfers.

The NSG has continued to discuss the AP proposal; however, several members are not prepared to join a consensus. Two states, Brazil and Argentina, oppose making the AP a condition of supply, at least at this time. France and Russia propose a more limited approach of making the AP a

condition of supply only for transfer of "sensitive" technologies, including enrichment and reprocessing. G-8 leaders have called for support of the AP as an essential new standard in the field of nuclear supply arrangements and said that G-8 members should work to amend the NSG Guidelines accordingly. The NSG has agreed that the AP proposal should remain on the agenda until consensus is reached.

Last year, the IAEA Board of Governors adopted unanimously our proposal to establish a Committee on Safeguards and Verification (CSV) to strengthen the Agency's ability to ensure that countries comply with their nonproliferation obligations. This is a work in progress and the Committee is holding its fourth meeting today in Vienna.

In addition, the United States believes firmly that a ban on the future production of fissile material for use in nuclear weapons or other nuclear explosive devices would strengthen international peace and security and the nuclear non-proliferation regime, in part by placing limits on fissile material that could fall into terrorist hands. On May 18th of this year, the United States introduced a draft text for a Fissile Material Cutoff Treaty, or FMCT, at the Conference on Disarmament in Geneva. The United States urges the Conference on Disarmament to begin negotiations on an FMCT, and calls on every nation publicly to declare a national moratorium on the production of fissile material for use in nuclear weapons, as has been done by the United States, until a treaty is negotiated.

Mr. Chairman, to be successful, we must be able to adapt to changing circumstances and utilize a full range of nonproliferation tools, some of which I have cited today. We must have a global nonproliferation architecture that ranges from limiting access to dangerous materials and technology and securing them at their source, to enacting export and border controls, to impeding WMD-related shipments during transport, and to enforcing domestic regulatory and administrative practices to guard against illegal proliferation activity. At the core of this architecture is the NPT. Without a global consensus as embodied in the NPT, we and other like-minded countries could not marshal enough support to tackle the increasingly important and complex proliferation problems.

As President Bush said in March: "The United States remains firmly committed to its obligations under the NPT. Our record demonstrates this

commitment... The United States will continue to play a leading role in strengthening the nonproliferation regime.”

That concludes my statement Mr. Chairman. I would be glad to respond to your questions.

Thank you very much.

Mr. SHAYS. Thank you, Mr. Semmel.
Mr. David.

STATEMENT OF JACK DAVID

Mr. DAVID. Chairman Shays, Congressman Van Hollen, I will try to abbreviate very substantially the formal written statement I submitted, and also to reduce in size my oral statement, as well, in view of what my colleagues have said, which I fully endorse with the Defense Department.

I thank you for the opportunity to testify on weapon of mass destruction, current nuclear proliferation challenges, on this my last week as Deputy Assistant Secretary of Defense for Combating WMD and Negotiations Policy. President Bush is committed to countering the threat of nuclear proliferation, and the Department of Defense's role in supporting the President is based on his 2002 National Strategy to Combat Weapons of Mass Destruction and his 2006 National Security Strategy.

Our goal is summarized by these words from the President's 2004 State of the Union Address: America is committed to keeping the world's most dangerous weapons out of the hands of the most dangerous regimes.

Multilateral arms control and nonproliferation treaties and regimes are key components of our strategy, with the Nuclear Non-Proliferation Treaty, the NPT, at the forefront. President Bush has called the NPT "a critical contribution to international security." The NPT is a principal element of an expanding legal framework devised to curb the development of nuclear weapons programs. We have sought to strengthen it.

In February, 2004, President Bush, addressing an audience of the National Defense University on curbing WMD, offered proposals to strengthen the NPT. He urged the creation of a new committee specifically mandated to concentrate on safeguards and additional protocol issues. He asked that all members of the NPT complete and adhere to safeguards and additional protocol agreements. He asked that the additional protocol be a condition for a state to receive support for its civil nuclear program.

U.S. efforts to address nuclear proliferation go beyond supporting and trying to strengthen the NPT. In May, 2003, President Bush launched the proliferation security initiative, which now boasts more than 75 participating states. The United States also played a leading role in the April, 2004, U.N. Security Council passage of resolution 1540, which requires states to control who may possess and export WMD-related material and technology.

The cooperative threat reduction program administered by the Department of Defense is another major effort to thwart nuclear proliferation. DOD's CTR efforts successfully assist Russia, Belarus, Kazakhstan, and Ukraine in dealing with the disposition of nuclear warheads and materials.

Since 2002, DOD's CTR efforts have included portal programs to detect illicit movement of nuclear materials, as well as programs to move WMD to central locations where they can be secured. These programs are part of the proliferation prevention initiative.

The nuclear nonproliferation measures we and other countries have supported have not been successful in all respects. World re-

gimes, unscrupulous profiteers, and non-state actors such as the A.Q. Kahn network have traded in nuclear materials and technology. This illicit trade has provided important assistance to the nuclear weapons programs of other countries, including Libya and Iran.

We live in an era where economic pressures and competition for fossil fuels make nuclear energy an important alternative to guaranteeing the world prosperity. With the use of nuclear energy comes the immense challenge of safeguarding nuclear technology and materials from uses that can bring about horrible consequences.

State and non-state actors with bad motives are ever ready to create a nightmare out of the dream of energy sufficiency. It is to prevent such an outcome that we must do all we can to prevent proliferation of nuclear materials.

Thank you very much.

[The prepared statement of Mr. David follows:]

Committee on Government Reform
Subcommittee on National Security, Emerging Threats
and International Relations

**"Weapons of Mass Destruction:
Current Nuclear Proliferation Challenges"**

**Prepared Statement of Jack David
Deputy Assistant Secretary of Defense for
Combating WMD and Negotiations Policy**

September 26, 2006

Chairman Shays, Ranking Member Kucinich, members of the subcommittee, it is an honor to appear before you today. I thank you for the opportunity to testify on **"Weapons of Mass Destruction: Current Nuclear Proliferation Challenges."**

President Bush is committed to countering the threat that nuclear proliferation poses to international peace and security. The Department of Defense takes its guidance for performing its role in this effort from the President's 2002 National Strategy to Combat Weapons of Mass Destruction and 2006 National Security Strategy. DoD's goal is adopted in its entirety from those words by President Bush in his January 20, 2004, State of the Union address, which said: "America is committed to keeping the world's most dangerous weapons out of the hands of the most dangerous regimes."

The National Strategy to Combat Weapons of Mass Destruction encompasses three pillars of which nonproliferation is one. Through active nonproliferation diplomacy the strategy embraces multilateral arms control and nonproliferation treaties and regimes as key components. The Nuclear Nonproliferation Treaty (NPT) is at the forefront of those. The NPT is intended to make the world a safer and more secure place for all of us erecting a number of barriers against the proliferation of nuclear weapons. Last year, in recognition of the treaty's 35th anniversary, President Bush called the NPT "a critical contribution to international security."

The NPT entered into force in 1970. This was an historic event. The nations of the world agreed to a treaty to prevent the spread of nuclear weapons and weapons technology, to promote cooperation in the peaceful uses of nuclear energy, and to further the goal of peace through the steady reduction of nuclear weapons stockpiles. At the time, many experts predicted that there would be a multiple of the then existing five Nuclear Weapons States by the end of the twentieth century. The fact that nothing like this happened is a testament to the substantial success of the treaty. The NPT is the

principal element of an expanding legal framework devised to curb the development of nuclear weapons programs through its nonproliferation obligations. NPT member states, of which there are 189—are promised the availability of assistance to use nuclear energy and materials in peaceful pursuits as long as they adhere to these nonproliferation obligations. Member states can take advantage of nuclear fuel sharing that will facilitate the development and use of nuclear power even if they do not have the resources to develop their own nuclear fuel cycles. They can also avail themselves of opportunities to share in the benefits of nuclear research in areas like medicine, nuclear safety, agriculture and many other applications of nuclear technology. The benefits of adhering to the NPT's nonproliferation objectives and abiding by its rules can expand in the future, by participation in efforts like President Bush's Global Nuclear Energy Partnership.

The United States has sought to strengthen the NPT, especially in recent years. In February 2004 President Bush, addressing an audience at the National Defense University on curbing WMD, offered proposals to enhance the NPT regime's ability to deal with nuclear proliferation issues. Among these proposals, the President urged the creation of a new committee specifically mandated to concentrate on Safeguards and Additional Protocol issues, thereby increasing the IAEA's ability to police compliance with safeguards required under the Treaty. The Departments represented on this panel worked hard to make this proposal a reality by fostering the creation of a new IAEA Committee on Safeguards and Verification (CSV).

The CSV had its first meeting in December 2005. We are working hard to energize the CSV to work to strengthen the IAEA's ability to oversee members' compliance with their safeguards agreements by developing new technologies to detect activities in violation of their agreements, increasing the use of special inspections, and maintaining an adequately sized technical staff. We continue to press for increased accountability for those NPT States that violate their agreements, and expect the work of the CSV increasingly will help that effort.

In the same February 2004 National Defense University speech in which the President proposed the CSV, the President urged that all members of the NPT not only complete and adhere to Safeguards agreements, but that they also join the IAEA's Additional Protocol. Moreover, in the same speech, President Bush proposed that a condition of a state receiving support for its civil nuclear program be its signing the Additional Protocol.

The Additional Protocol is a very important nuclear nonproliferation tool. The Additional Protocol improves the IAEA's ability to detect cheating by increasing reporting requirements about nuclear fuel cycle activities, and by adding significantly to the IAEA's authority to conduct inspections where it suspects irregularities on the part of member States. In response to member States' concerns that such intrusive monitoring would jeopardize proprietary information, the Additional Protocol sets forth an obligation

on the part of the IAEA to maintain a stringent regime to ensure effective protection against disclosure of commercial, technological and industrial secrets. This regime is to be approved periodically by the Agency's Board of Governors, on which the U.S. sits.

The United States has joined the other nuclear weapons states in signing an Additional Protocol and the Congress is considering implementing legislation currently.

US efforts to address the threat of nuclear proliferation go beyond supporting and trying to improve compliance with the NPT. In May 2003 President Bush launched the Proliferation Security Initiative (PSI), which now boasts more than 75 participating States. Additionally, the United States played a leading role in the April 2004 UN Security Council passage of Resolution 1540, which acts against proliferation and proliferators of weapons of mass destruction, including nuclear weapons, by requiring all States to adopt domestic legislation to govern exports of WMD, their means of delivery and related material, including by establishing criminal or civil penalties for export violations and to prohibit the manufacture possession or proliferation of the same.

On May 18, 2006 the United States tabled a draft Fissile Material Cutoff Treaty at the Conference on Disarmament in Geneva. This draft treaty is complementary to the NPT. It provides for definitions for fissile material and the processes used to make it. It proscribes the production of new fissile material for the purpose of use in nuclear weapons and explosive devices. The draft treaty provides a mechanism for addressing cheating that includes referral to the UN Security Council. The draft will be discussed in negotiations with other nations in the Conference on Disarmament, with a view toward arriving at a final text at the earliest possible time.

The Cooperative Threat Reduction Program (CTR), administered by the Department of Defense, is yet another major US effort to protect against nuclear proliferation. At the outset of the program, it focused on preventing proliferation of WMD including nuclear materials, warheads and their delivery systems by helping to eliminate their delivery systems and account for and improve security at the places where these materials are located to ensure that WMD would not fall into the hands of terrorists. Since 2003 the CTR has been expanded to address WMD "on the move" by including border portal programs to detect illicit movement of nuclear materials as well as programs to move WMD to central locations where they can be secured. These programs work closely and in concert with DOE and State programs.

Over the years, CTR programs have included the following successful efforts:

- DoD helped former Soviet States such as Belarus, Kazakhstan, and Ukraine, return nuclear weapons located in their territories to Russia.

- Starting in February 2000 DoD helped Russia provide security for the transshipment of trainloads of nuclear weapons to dismantlement and storage facilities. So far, CTR has provided assistance for the security of at least 315 trainloads.
- DoD and the Department of Energy together helped upgrade security at nine permanent and three temporary nuclear weapons storage sites in Russia, fulfilling commitments made by President Bush in Bratislava on February 24, 2005. DoD and DoE have concluded agreements with Russia to complete security upgrades of an additional ten permanent and three temporary sites by the end of 2008.
- In 2002, the DoD initiated the CTR-supported Proliferation Prevention Initiative (PPI). This program, complementary to similar DOE programs, helps partner countries to build nuclear detection capabilities at portals through which such materials may pass.
- The PPI enhances prospects for interdicting nuclear materials in the Black and Caspian Sea basins. Currently, PPI is working in Ukraine, Uzbekistan, Kazakhstan, Moldova and Azerbaijan.

The nuclear nonproliferation measures we and other countries have supported could be strengthened. Rogue regimes, unscrupulous profiteers, and non-state actors have traded in nuclear materials and technology, sometimes successfully. The A. Q. Khan Network, which provided important assistance to Libya's nuclear program is a notorious example. And, as we all know, the Iranian regime is working assiduously to gain nuclear weapons with which to advance its hegemonic ambitions in defiance of its NPT and IAEA obligations. The nonproliferation initiatives, policies, and programs I have described, such as PSI and the Additional Protocol, can help to curb these unwelcome aspects of the global marketplace.

We live in an era where economic pressures combined with the competition for fossil fuels make nuclear energy an important alternative to guaranteeing world prosperity. Along with the use of nuclear energy comes the immense responsibility of safeguarding nuclear technology and materials from uses that can bring about terrible consequences. State and non-state actors with bad motives are ever ready to create a nightmare out of what should be the ingredients fulfilling the good dream of energy sufficiency. It is to prevent such an outcome that we must do all we can to prevent proliferation of nuclear weapons through transfers of nuclear equipment, technology and materials.

Mr. SHAYS. Thank you.
Mr. Aloise.

STATEMENT OF GENE ALOISE

Mr. ALOISE. Mr. Chairman and members of the subcommittee, I am pleased to be here today to discuss IAEA's safeguard program and other measures to halt the spread of nuclear weapons and materials.

Reports about the clandestine nuclear weapons programs in North Korea, Iran, and Libya, as well as covert nuclear trafficking networks have increased international concerns about the spread of weapon of mass destruction. Since the NPT came into force in 1970, IAEA safeguards have been a cornerstone of U.S. and international efforts to prevent nuclear proliferation. In addition to safeguards, other U.S. and international efforts to prevent the spread of nuclear weapons, materials, and technologies have included the Nuclear Suppliers Group and U.S. assistance to Russia and other countries to secure nuclear materials and warheads.

My remarks today will focus on our most recent report on IAEA safeguards system because safeguards is the most important mechanism used to ensure compliance with the NPT.

Despite successes in uncovering some countries' undeclared nuclear activities, safeguards experts acknowledge that a determined country can still conceal a nuclear weapons program. IAEA continues to strengthen safeguards by more aggressively seeking assurances that a country is not pursuing a clandestine nuclear program. To help do this, IAEA uses measures such as conducting short-notice and unannounced inspections, collecting and analyzing environmental samples, and using unattended measurement and surveillance systems.

State Department and IAEA officials told us that safeguards have successfully revealed undisclosed nuclear activities in countries such as Iran. Despite successes, IAEA safeguards have limitations. If a country decides to divert nuclear material or conduct undeclared activities, it will deliberately work to prevent the Agency from discovering this. Furthermore, any assurances by IAEA that a country is not engaged in undeclared activities cannot be regarded as absolute, and, importantly, there are a number of weaknesses that hamper the Agency's ability to effectively implement safeguards, including:

IAEA has only limited information about the nuclear activities of Pakistan, India, Israel, and North Korea. Since these countries are not members of the NPT, they do not have comprehensive safeguards agreements and are not required to declare all their nuclear material.

Another weakness is that more than half of the NPT signatories have not yet adopted the additional protocol, a separate agreement designed to give IAEA nuclear authority to search for covert nuclear activities. Further, safeguards are significantly limited or not applied in about 60 percent of the NPT signatories, because either these countries have not signed comprehensive safeguard agreements or they claim they possess only small quantities of nuclear material and are exempt from most safeguards measures.

Last, IAEA is facing a human capital crisis that threatens the safeguards missions. In 2005 we reported that over 50 percent of senior safeguards inspectors and high-level safeguards officials are retiring in the next 5 years. In our 2005 report we recommended a number of actions designed to address the weaknesses in IAEA's safeguards program.

IAEA has been called upon by its member states to assume a greater role in reducing the risks of nuclear proliferation; however, as its responsibilities continue to expand, the Agency faces a broad array of challenges that hamper its ability to fully implement its safeguards system.

Mr. Chairman and members of the subcommittee, that concludes my statement. I would be happy to address any questions you may have.

[The prepared statement of Mr. Aloise follows:]

United States Government Accountability Office

GAO

Testimony

Before the Subcommittee on National Security,
Emerging Threats, and International Relations,
Committee on Government Reform, House of
Representatives

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**NUCLEAR
NONPROLIFERATION**

**IAEA Safeguards and Other
Measures to Halt the Spread
of Nuclear Weapons and
Material**

Statement of Gene Aloise, Director
Natural Resources and Environment



September 26, 2006

NUCLEAR NONPROLIFERATION

IAEA Safeguards and Other Measures to Halt the Spread of Nuclear Weapons and Material



Highlights of GAO-06-1128T, testimony before the Subcommittee on National Security, Emerging Threats, and International Relations, Committee on Government Reform, House of Representatives

Why GAO Did This Study

The International Atomic Energy Agency's (IAEA) safeguards system has been a cornerstone of U.S. efforts to prevent nuclear weapons proliferation since the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) was adopted in 1970. Safeguards allow IAEA to verify countries' compliance with the NPT. Since the discovery in 1991 of a clandestine nuclear weapons program in Iraq, IAEA has strengthened its safeguards systems. In addition to IAEA's strengthened safeguards program, there are other U.S. and international efforts that have helped stem the spread of nuclear materials and technology that could be used for nuclear weapons programs. This testimony is based on GAO's report on IAEA safeguards issued in October 2006 (*Nuclear Nonproliferation: IAEA Has Strengthened Its Safeguards and Nuclear Security Programs, but Weaknesses Need to Be Addressed*, GAO-06-93 [Washington, D.C.: Oct. 7, 2006]). This testimony is also based on previous GAO work related to the Nuclear Suppliers Group—a group of more than 40 countries that have pledged to limit trade in nuclear materials, equipment, and technology to only countries that are engaged in peaceful nuclear activities—and U.S. assistance to Russia and other countries of the former Soviet Union for the destruction, protection, and detection of nuclear material and weapons.

www.gao.gov/cgi-bin/getrpt?GAO-06-1128T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Gene Aloise at (202) 512-3841 or aloisee@gao.gov.

What GAO Found

IAEA has taken steps to strengthen safeguards, including conducting more intrusive inspections, to seek assurances that countries are not developing clandestine weapons programs. IAEA has begun to develop the capability to independently evaluate all aspects of a country's nuclear activities. This is a radical departure from the past practice of only verifying the peaceful use of a country's declared nuclear material. However, despite successes in uncovering some countries' undeclared nuclear activities, safeguards experts cautioned that a determined country can still conceal a nuclear weapons program. In addition, there are a number of weaknesses that limit IAEA's ability to implement strengthened safeguards. First, IAEA has a limited ability to assess the nuclear activities of 4 key countries that are not NPT members—India, Israel, North Korea, and Pakistan. Second, more than half of the NPT signatories have not yet brought the Additional Protocol, which is designed to give IAEA new authority to search for clandestine nuclear activities, into force. Third, safeguards are significantly limited or not applied to about 60 percent of NPT signatories because they possess small quantities of nuclear material, and are exempt from inspections, or they have not concluded a comprehensive safeguards agreement. Finally, IAEA faces a looming human capital crisis caused by the large number of inspectors and safeguards management personnel expected to retire in the next 5 years.

In addition to IAEA's strengthened safeguards program, there are other U.S. and international efforts that have helped stem the spread of nuclear materials and technology. The Nuclear Suppliers Group has helped to constrain trade in nuclear material and technology that could be used to develop nuclear weapons. However, there are a number of weaknesses that could limit the Nuclear Suppliers Group's ability to curb proliferation. For example, members of the Suppliers Group do not always share information about licenses they have approved or denied for the sale of controversial items to nonmember states. Without this shared information, a member country could inadvertently license a controversial item to a country that has already been denied a license from another member state.

Since the early 1990s, U.S. nonproliferation programs have helped Russia and other former Soviet countries to, among other things, secure nuclear material and warheads, detect illicitly trafficked nuclear material, and eliminate excess stockpiles of weapons-usable nuclear material. However, these programs face a number of challenges which could compromise their ongoing effectiveness. For example, a lack of access to many sites in Russia's nuclear weapons complex has significantly impeded the Department of Energy's progress in helping Russia secure its nuclear material. U.S. radiation detection assistance efforts also face challenges, including corruption of some foreign border security officials, technical limitations of some radiation detection equipment, and inadequate maintenance of some equipment.

United States Government Accountability Office

Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss the International Atomic Energy Agency's (IAEA) safeguards program and other measures to halt the spread of nuclear weapons and material. Revelations about the clandestine nuclear programs of North Korea, Iran, and Libya, as well as clandestine nuclear trafficking networks, have significantly increased international concerns about the spread of weapons of mass destruction. Since the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) came into force in 1970, IAEA's safeguards system has been a cornerstone of U.S. and international efforts to prevent nuclear weapons proliferation. The NPT expanded IAEA's original inspection responsibilities by requiring signatory non-nuclear weapons states—countries that had not manufactured and detonated a nuclear device before January 1, 1967—to agree not to acquire nuclear weapons and to accept IAEA safeguards on all nuclear material used in peaceful activities.¹ Most countries have negotiated an agreement with IAEA, known as a comprehensive safeguards agreement.

Safeguards allow the agency to independently verify that non-nuclear weapons states that signed the NPT are complying with its requirements. Under the safeguards system, IAEA, among other things, inspects all facilities and locations containing nuclear material, as declared by each country, to verify its peaceful use. However, the discovery in 1991 of a clandestine nuclear weapons program in Iraq confirmed the need for a broader and more effective approach to safeguards. As a result, IAEA began to strengthen its safeguards system in the mid-1990s to provide assurance that non-nuclear weapons states were not engaged in undeclared nuclear activities.

In addition to IAEA's strengthened safeguards program, other U.S. and international efforts to prevent nuclear weapons proliferation have included the Nuclear Supplier's Group—a group of more than 40 countries that have pledged to limit trade in nuclear materials, equipment, and technology to only countries that are engaged in peaceful nuclear activities—and U.S. assistance to Russia and other states of the former

¹Under the NPT, nuclear weapons states pledged to facilitate the transfer of peaceful nuclear technology to non-nuclear weapons states, but not to assist them in acquiring nuclear weapons.

Soviet Union to, among other things, secure nuclear material and warheads.

My remarks will focus on our report on IAEA safeguards issued in October 2005.² I will also address issues related to previous GAO work on the Nuclear Suppliers Group's restrictions on nuclear trade³ and U.S. assistance to Russia and other countries of the former Soviet Union for the destruction, protection, and detection of nuclear weapons and material.

Summary

IAEA has taken steps to strengthen safeguards by more aggressively seeking assurances that countries have not engaged in clandestine nuclear activities, but the agency still cannot be certain that countries are not developing secret weapons programs. In a radical departure from the past practice of only verifying the peaceful use of a country's declared nuclear material at declared facilities, IAEA has begun to develop the capability to independently evaluate all aspects of a country's nuclear activities by, among other things, conducting more intrusive inspections and collecting and analyzing environmental samples to detect traces of nuclear material at facilities and other locations. Department of State and IAEA officials told us that IAEA's strengthened safeguards measures have successfully revealed previously undisclosed nuclear activities in Iran, South Korea, and Egypt. In the case of Iran, IAEA and Department of State officials noted that strengthened safeguards measures, such as collecting and analyzing environmental samples, helped the agency verify some of Iran's nuclear activities. The measures also allowed IAEA to conclude in September 2005 that Iran was not complying with its safeguards obligations because it failed to report all of its nuclear activities to IAEA. As a result, in July 2006, Iran was referred to the U.N. Security Council, which in turn demanded that Iran suspend its uranium enrichment activities or face possible diplomatic and economic sanctions. Despite these successes, a group of safeguards experts recently cautioned that a determined country can still conceal a nuclear weapons program. For example, IAEA does not have unfettered inspection rights and cannot make visits to suspected sites anywhere at any time.

²GAO, *Nuclear Nonproliferation: IAEA Has Strengthened Its Safeguards and Nuclear Security Programs, but Weaknesses Need to Be Addressed*, GAO-06-83 (Washington, D.C.: Oct. 7, 2005).

³GAO, *Nonproliferation: Strategy Needed to Strengthen Multilateral Export Control Regimes*, GAO-03-43 (Washington, D.C.: Oct. 25, 2002).

There are a number of weaknesses that hamper IAEA's ability to effectively implement strengthened safeguards. First, IAEA has a limited ability to assess the nuclear activities of 4 key countries that are not NPT members—India, Israel, North Korea, and Pakistan. Second, more than half, or 111 out of 189, of the NPT signatories have not yet brought the Additional Protocol into force, including the United States. A third weakness in implementing strengthened safeguards is that safeguards are significantly limited or not applied in about 60 percent, or 112 out of 189, of the NPT signatory countries—either because they have an agreement (known as a small quantities protocol) with IAEA, and are not subject to most safeguards measures, or because they have not concluded a comprehensive safeguards agreement with IAEA. IAEA cannot verify that these countries are not diverting nuclear material for nonpeaceful purposes or engaging in secret nuclear activities. Fourth, while IAEA is increasingly relying on the analytical skills of its staff to detect countries' undeclared nuclear activities, the agency is facing a looming human capital crisis. In the next 5 years, IAEA will experience a large turnover of senior safeguards inspectors and high-level management officials. Delays in filling critical safeguards positions limit IAEA's ability to implement strengthened safeguards.

In addition to IAEA's strengthened safeguards program, there are other U.S. and international efforts that have helped stem the spread of nuclear materials and technology. The Nuclear Suppliers Group has helped to constrain the trade in nuclear material and technology that could be used to develop nuclear weapons. There are currently 45 countries that participate in this voluntary, nonbinding regime and they have pledged to limit trade in nuclear materials, equipment, and technology to only countries that are engaged in peaceful nuclear activities. The Nuclear Suppliers Group has also helped IAEA verify compliance with the NPT. For example, it helped convince Argentina and Brazil to place their nuclear programs under IAEA safeguards in exchange for international cooperation to enhance their nuclear programs for peaceful purposes. Since 1992, the Nuclear Suppliers Group has required that other countries have comprehensive safeguards agreements with IAEA as a condition of supply for nuclear-related items. Despite these benefits, there are a number of weaknesses that could limit the Nuclear Suppliers Group's ability to curb proliferation. We found that members of the Nuclear Suppliers Group do not always share information about licenses they have approved or denied for the sale of controversial items to nonmember states. Without this shared information, a member country could inadvertently license a controversial item to a country that has already been denied a license from another Nuclear Suppliers Group member

state. We also found that Nuclear Suppliers Group members did not promptly review and agree upon common lists of items to control and approaches to controlling them. Without this agreement, sensitive items may still be traded to countries of concern.

Since the early 1990s, U.S. nonproliferation programs have helped Russia and other former Soviet countries secure nuclear material and warheads, detect illicitly trafficked nuclear material, eliminate excess stockpiles of weapons-usable nuclear material,⁴ and halt the continued production of weapons-grade plutonium.⁵ While these programs have had some successes, they also face a number of challenges which could compromise their ongoing effectiveness. For example, a lack of access to many sites in Russia's nuclear weapons complex has significantly impeded the Department of Energy's (DOE) progress in helping Russia secure its nuclear material. We reported in 2003 that DOE had completed work at only a limited number of buildings in Russia's nuclear weapons complex, a network of sites involved in the construction of nuclear weapons where most of the nuclear material in Russia is stored. While DOE has reported progress on gaining access to many of these sites, we are currently re-examining DOE's efforts in this area and the challenges the agency faces in completing its program. Furthermore, to combat nuclear smuggling, since 1994, the Departments of Energy, Defense, and State have provided radiation detection equipment to 36 countries, including many countries of the former Soviet Union. However, as we reported in March 2006, U.S. radiation detection assistance efforts also face challenges, including corruption of some foreign border security officials, technical limitations of some radiation detection equipment, and inadequate maintenance of some equipment.

Background

IAEA is an independent organization affiliated with the United Nations. Its governing bodies include the General Conference, composed of representatives of the 138 IAEA member states, and the 35-member Board of Governors, which provides overall policy direction and oversight. The Secretariat, headed by the Director General, is responsible for

⁴Weapons-usable nuclear material is uranium enriched to 20 percent or greater in uranium-235 or uranium-233 and any plutonium containing less than 80 percent of the isotope plutonium-238 and less than 10 percent of the isotopes plutonium-241 and plutonium-242. These types of material are of the quality used to make nuclear weapons.

⁵A listing of relevant U.S. nuclear nonproliferation programs can be found in appendix III.

implementing the policies and programs of the General Conference and Board of Governors. The United States is a permanent member of the Board of Governors.

IAEA derives its authority to establish and administer safeguards from its statute, the Treaty on the Non-proliferation of Nuclear Weapons and regional nonproliferation treaties, bilateral commitments between states, and project agreements with states.⁶ Since the NPT came into force in 1970, it has been subject to review by signatory states every 5 years. The 1995 NPT Review and Extension conference extended the life of the treaty indefinitely, and the latest review conference occurred in May 2005. Article III of the NPT binds each of the treaty's 184 signatory states that had not manufactured and exploded a nuclear device prior to January 1, 1967 (referred to in the treaty as non-nuclear weapon states) to conclude an agreement with IAEA that applies safeguards to all source and special nuclear material in all peaceful nuclear activities within the state's territory, under its jurisdiction, or carried out anywhere under its control.⁷

The five nuclear weapons states that are parties to the NPT—China, France, the Russian Federation, the United Kingdom, and the United States—are not obligated by the NPT to accept IAEA safeguards. However, each nuclear weapons state has voluntarily entered into legally binding safeguards agreements with IAEA, and has submitted designated nuclear materials and facilities to IAEA safeguards to demonstrate to the non-nuclear weapon states their willingness to share in the administrative and commercial costs of safeguards. (App. I lists states that are subject to safeguards, as of August 2006.)

India, Israel, and Pakistan are not parties to the NPT or other regional nonproliferation treaties. India and Pakistan are known to have nuclear weapons programs and to have detonated several nuclear devices during

⁶Regional treaties, including the Treaty for the Prohibition of Nuclear Weapons in Latin America (the 1967 Treaty of Tlatelolco), the South Pacific Nuclear Free Zone Treaty (the 1985 Treaty of Rarotonga), the African Nuclear-Weapon-Free Zone Treaty (the 1995 Treaty of Pelindaba), and the Southeast Asia Nuclear-Weapon-Free Treaty (the 1995 Bangkok Treaty) require each participating country to conclude a comprehensive safeguards agreement with IAEA. Additionally, in February 2005, five Central Asian states announced that they had reached agreement on the text of a treaty to establish a nuclear-weapon-free zone.

⁷Nuclear materials include source materials, such as natural uranium, depleted uranium, and thorium, and special fissionable materials, such as enriched uranium and plutonium.

May 1998. Israel is also believed to have produced nuclear weapons. Additionally, North Korea joined the NPT in 1985 and briefly accepted safeguards in 1992 and 1993, but expelled inspectors and threatened to withdraw from the NPT when IAEA inspections uncovered evidence of undeclared plutonium production. North Korea announced its withdrawal from the NPT in early 2003, which under the terms of the treaty, terminated its comprehensive safeguards agreement.

IAEA's safeguards objectives, as traditionally applied under comprehensive safeguards agreements, are to account for the amount of a specific type of material necessary to produce a nuclear weapon, and the time it would take a state to divert this material from peaceful use and produce a nuclear weapon. IAEA attempts to meet these objectives by using a set of activities by which it seeks to verify that nuclear material subject to safeguards is not diverted to nuclear weapons or other proscribed purposes. For example, IAEA inspectors visit a facility at certain intervals to ensure that any diversion of nuclear material is detected before a state has had time to produce a nuclear weapon. IAEA also uses material-accounting measures to verify quantities of nuclear material declared to the agency and any changes in the quantities over time. Additionally, containment measures are used to control access to and the movement of nuclear material. Finally, IAEA deploys surveillance devices, such as video cameras, to detect the movements of nuclear material and discourage tampering with IAEA's containment measures.

The Nuclear Suppliers Group was established in 1975 after India tested a nuclear explosive device. In 1978, the Suppliers Group published its first set of guidelines governing the exports of nuclear materials and equipment. These guidelines established several requirements for Suppliers Group members, including the acceptance of IAEA safeguards at facilities using controlled nuclear-related items. In 1992, the Suppliers Group broadened its guidelines by requiring countries receiving nuclear exports to agree to IAEA's safeguards as a condition of supply. As of August 2006, the Nuclear Suppliers Group had 45 members, including the United States. (See app. II for a list of signatory countries.)

IAEA Has Strengthened Its Safeguards Program, but Weaknesses Need to Be Addressed

IAEA has taken steps to strengthen safeguards by more aggressively seeking assurances that a country is not pursuing a clandestine nuclear program. In a radical departure from past practices of only verifying the peaceful use of a country's declared nuclear material at declared facilities, IAEA has begun to develop the capability to independently evaluate all aspects of a country's nuclear activities. The first strengthened safeguards steps, which began in the early 1990s, increased the agency's ability to monitor declared and undeclared activities at nuclear facilities. These measures were implemented under the agency's existing legal authority under comprehensive safeguards agreements and include (1) conducting short notice and unannounced inspections, (2) collecting and analyzing environmental samples to detect traces of nuclear material, and (3) using measurement and surveillance systems that operate unattended and can be used to transmit data about the status of nuclear materials directly to IAEA headquarters.

The second series of steps began in 1997 when IAEA's Board of Governors approved the Additional Protocol.³ Under the Additional Protocol, IAEA has the right, among other things, to (1) receive more comprehensive information about a country's nuclear activities, such as research and development activities, and (2) conduct "complementary access," which enables IAEA to expand its inspection rights for the purpose of ensuring the absence of undeclared nuclear material and activities. Because the Additional Protocol broadens IAEA's authority and the requirements on countries under existing safeguards agreements, each country must take certain actions to bring it into force.

For each country with a safeguards agreement, IAEA independently evaluates all information available about the country's nuclear activities and draws conclusions regarding a country's compliance with its safeguards commitments. A major source of information available to the agency is data submitted by countries to IAEA under their safeguards agreements, referred to as state declarations. Countries are required to provide an expanded declaration of their nuclear activities within 180 days of bringing the Additional Protocol into force. Examples of information provided in an Additional Protocol declaration include the manufacturing of key nuclear-related equipment; research and development activities related to the nuclear fuel cycle; the use and contents of buildings on a

³Model Protocol Additional to the Agreement(s) Between State(s) and the International Atomic Energy Agency for the Application of Safeguards.

nuclear site; and the location and operational status of uranium mines. The agency uses the state declarations as a starting point to determine if the information provided by the country is consistent and accurate with all other information available based on its own review.

IAEA uses various types of information to verify the state declaration. Inspections of nuclear facilities and other locations with nuclear material are the cornerstone of the agency's data collection efforts. Under the Additional Protocol, IAEA has the authority to conduct complementary access at any place on a site or other location with nuclear material in order to ensure the absence of undeclared nuclear material and activities, confirm the decommissioned status of facilities where nuclear material was used or stored, and resolve questions or inconsistencies related to the correctness and completeness of the information provided by a country on activities at other declared or undeclared locations. During complementary access, IAEA inspectors may carry out a number of activities, including (1) making visual observations, (2) collecting environmental samples, (3) using radiation detection equipment and measurement devices, and (4) applying seals. In 2004, IAEA conducted 124 complementary access in 27 countries.

In addition to its verification activities, IAEA uses other sources of information to evaluate countries' declarations. These sources include information from the agency's internal databases, open sources, satellite imagery, and outside groups. The agency established two new offices within the Department of Safeguards to focus primarily on open source and satellite imagery data collection. Analysts use Internet searches to acquire information generally available to the public from open sources, such as scientific literature, trade and export publications, commercial companies, and the news media. In addition, the agency uses commercially available satellite imagery to supplement the information it receives through its open source information. Satellite imagery is used to monitor the status and condition of declared nuclear facilities and verify state declarations of certain sites. The agency also uses its own databases, such as those for nuclear safety, nuclear waste, and technical cooperation, to expand its general knowledge about countries' nuclear and nuclear-related activities. In some cases, IAEA receives information from third parties, including other countries.

IAEA Has Taken Steps to Strengthen Safeguards, but Detection of Clandestine Nuclear Weapons Programs is Not Assured

Department of State and IAEA officials told us that strengthened safeguards measures have successfully revealed previously undisclosed nuclear activities in Iran, South Korea, and Egypt. Specifically,

- IAEA and Department of State officials noted that strengthened safeguards measures, such as collecting and analyzing environmental samples, helped the agency verify some of Iran's nuclear activities. The measures also allowed IAEA to conclude in September 2005 that Iran was not complying with its safeguards obligations because it failed to report all of its nuclear activities to IAEA. As a result, in July 2006, Iran was referred to the U.N. Security Council, which in turn demanded that Iran suspend its uranium enrichment activities or face possible diplomatic and economic sanctions.
- In August 2004, as a result of preparations to submit its initial declaration under the Additional Protocol, South Korea notified IAEA that it had not previously disclosed nuclear experiments involving the enrichment of uranium and plutonium separation. IAEA sent a team of inspectors to South Korea to investigate this case. In November 2004, IAEA's Director General reported to the Board of Governors that although the quantities of nuclear material involved were not significant, the nature of the activities and South Korea's failure to report these activities in a timely manner posed a serious concern. IAEA is continuing to verify the correctness and completeness of South Korea's declarations.
- IAEA inspectors have investigated evidence of past undeclared nuclear activities in Egypt based on the agency's review of open source information that had been published by current and former Egyptian nuclear officials. Specifically, in late 2004, the agency found evidence that Egypt had engaged in undeclared activities at least 20 years ago by using small amounts of nuclear material to conduct experiments related to producing plutonium and highly enriched uranium. In January 2005, the Egyptian government announced that it was fully cooperating with IAEA and that the matter was limited in scope. IAEA inspectors have made several visits to Egypt to investigate this matter. IAEA's Secretariat reported these activities to its Board of Governors.

Despite these successes, a group of safeguards experts recently cautioned that a determined country can still conceal a nuclear weapons program. IAEA faces a number of limitations that impact its ability to draw conclusions—with absolute assurance—about whether a country is developing a clandestine nuclear weapons program. For example, IAEA does not have unfettered inspection rights and cannot make visits to

suspected sites anywhere at any time. According to the Additional Protocol, complementary access to resolve questions related to the correctness and completeness of the information provided by the country or to resolve inconsistencies must usually be arranged with at least 24-hours advanced notice. Complementary access to buildings on sites where IAEA inspectors are already present are usually conducted with a 2-hour advanced notice. Furthermore, IAEA officials told us that there are practical problems that restrict access. For example, inspectors must be issued a visa to visit certain countries, a process which cannot normally be completed in less than 24 hours. In some cases, nuclear sites are in remote locations and IAEA inspectors need to make travel arrangements, such as helicopter transportation, in advance, which requires that the country be notified prior to the visit.

A November 2004 study by a group of safeguards experts appointed by IAEA's Director General evaluated the agency's safeguards program to examine how effectively and efficiently strengthened safeguards measures were being implemented. Specifically, the group's mission was to evaluate the progress, effectiveness, and impact of implementing measures to enhance the agency's ability to draw conclusions about the non-diversion of nuclear material placed under safeguards and, for relevant countries, the absence of undeclared nuclear material and activities. The group concluded that generally IAEA had done a very good job implementing strengthened safeguards despite budgetary and other constraints. However, the group noted that IAEA's ability to detect undeclared activities remains largely untested. If a country decides to divert nuclear material or conduct undeclared activities, it will deliberately work to prevent IAEA from discovering this. Furthermore, IAEA and member states should be clear that the conclusions drawn by the agency cannot be regarded as absolute. This view has been reinforced by the former Deputy Director General for Safeguards who has stated that even for countries with strengthened safeguards in force, there are limitations on the types of information and locations accessible to IAEA inspectors.

**A Number of Weaknesses
Impede IAEA's Ability to
Effectively Implement
Strengthened Safeguards**

There are a number of weaknesses that hamper IAEA's ability to effectively implement strengthened safeguards. IAEA has only limited information about the nuclear activities of 4 key countries that are not members of the NPT—India, Israel, North Korea, and Pakistan. India, Israel, and Pakistan have special agreements with IAEA that limit the agency's activities to monitoring only specific material, equipment, and facilities. However, since these countries are not signatories to the NPT, they do not have comprehensive safeguards agreements with IAEA, and

are not required to declare all of their nuclear material to the agency. In addition, these countries are only required to declare exports of nuclear material previously declared to IAEA. With the recent revelations of the illicit international trade in nuclear material and equipment, IAEA officials stated that they need more information on these countries' nuclear exports. For North Korea, IAEA has even less information, since the country expelled IAEA inspectors and removed surveillance equipment at nuclear facilities in December 2002 and withdrew from the NPT in January 2003. These actions have raised widespread concern that North Korea diverted some of its nuclear material to produce nuclear weapons.

Another major weakness is that more than half, or 111 out of 189, of the NPT signatories have not yet brought the Additional Protocol into force, as of August 2006. (App. I lists the status of countries' safeguards agreements with IAEA). Without the Additional Protocol, IAEA must limit its inspection efforts to declared nuclear material and facilities, making it harder to detect clandestine nuclear programs. Of the 111 countries that have not adopted the Additional Protocol, 21 are engaged in significant nuclear activities,⁸ including Egypt, North Korea, and Syria.

In addition, safeguards are significantly limited or not applied in about 60 percent, or 112 out of 189, of the NPT signatory countries—either because they have an agreement (known as a small quantities protocol) with IAEA, and are not subject to most safeguards measures, or because they have not concluded a comprehensive safeguards agreement with IAEA. Countries with small quantities of nuclear material make up about 41 percent of the NPT signatories and about one-third of the countries that have the Additional Protocol in force. Since 1971, IAEA's Board of Governors has authorized the Director General to conclude an agreement, known as a small quantities protocol, with 90 countries and, as of August 2006, 78 of these agreements were in force. IAEA's Board of Governors has approved the protocols for these countries without having IAEA verify that they met the requirements for it. Even if these countries bring the Additional Protocol into force, IAEA does not have the right to conduct inspections or install surveillance equipment at certain nuclear facilities. According to IAEA and Department of State officials, this is a weakness in the agency's ability to detect clandestine nuclear activities or transshipments of nuclear material and equipment through the country. In September 2005, the

⁸IAEA defines a country with significant nuclear activities as one that has declared nuclear material in a facility or a location outside facilities.

Board of Governors directed IAEA to negotiate with countries to make changes to the protocols, including reinstating the agency's right to conduct inspections. As of August 2006, IAEA amended the protocols for 4 countries—Ecuador, Mali, Palau, and Tajikistan.

The application of safeguards is further limited because 31 countries that have signed the NPT have not brought into force a comprehensive safeguards agreement with IAEA. The NPT requires non-nuclear weapons states to conclude comprehensive safeguards agreements with IAEA within 18 months of becoming a party to the Treaty. However, IAEA's Director General has stated that these 31 countries have failed to fulfill their legal obligations. Moreover, 27 of the 31 have not yet brought comprehensive safeguards agreements into force more than 10 years after becoming party to the NPT, including Chad, Kenya, and Saudi Arabia.

Last, IAEA is facing a looming human capital crisis that may hamper the agency's ability to meet its safeguards mission. In 2005, we reported that about 51 percent, or 38 out of 75, of IAEA's senior safeguards inspectors and high-level management officials, such as the head of the Department of Safeguards and the directors responsible for overseeing all inspection activities of nuclear programs, are retiring in the next 5 years.¹⁹ According to U.S. officials, this significant loss of knowledge and expertise could compromise the quality of analysis of countries' nuclear programs. For example, several inspectors with expertise in uranium enrichment techniques, which is a primary means to produce nuclear weapons material, are retiring at a time when demand for their skills in detecting clandestine nuclear activities is growing. While IAEA has taken a number of steps to address these human capital issues, officials from the Department of State and the U.S. Mission to the U.N. System Organizations in Vienna have expressed concern that IAEA is not adequately planning to replace staff with critical skills needed to fulfill its strengthened safeguards mission.

¹⁹In 2004, the Department of Safeguards had 552 staff members. Of these, 251 were safeguards inspectors.

The Nuclear Suppliers Group Has Helped Stem Nuclear Proliferation, but Lack of Information Sharing on Nuclear Exports Between Members Could Undermine Its Efforts

The Nuclear Suppliers Group, along with other multilateral export control groups, has helped stop, slow, or raise the costs of nuclear proliferation, according to nonproliferation experts. For example, as we reported in 2002, the Suppliers Group helped convince Argentina and Brazil to accept IAEA safeguards on their nuclear programs in exchange for expanded access to international cooperation for peaceful nuclear purposes.¹¹ The Suppliers Group, along with other multilateral export control groups, has significantly reduced the availability of technology and equipment available to countries of concern, according to a State Department official. Moreover, nuclear export controls have made it more difficult, more costly, and more time consuming for proliferators to obtain the expertise and material needed to advance their nuclear program.

The Nuclear Suppliers Group has also helped IAEA verify compliance with the NPT. In 1978, the Suppliers Group published the first guidelines governing exports of nuclear materials and equipment. These guidelines established several member requirements, including the requirement that members adhere to IAEA safeguards standards at facilities using controlled nuclear-related items. Subsequently, in 1992, the Nuclear Suppliers Group broadened its guidelines by requiring that members insist that non-member states have IAEA safeguards on all nuclear material and facilities as a condition of supply for their nuclear exports. With the revelation of Iraq's nuclear weapons program, the Suppliers Group also created an export control system for dual-use items that established new controls for items that did not automatically fall under IAEA safeguards requirements.¹²

Despite these benefits, there are a number of weaknesses that could limit the Nuclear Suppliers Group's ability to curb nuclear proliferation. Members of the Suppliers Group do not share complete export licensing information. Specifically, members do not always share information about licenses they have approved or denied for the sale of controversial items to nonmember states. Without this shared information, a member country could inadvertently license a controversial item to a country that has already been denied a license from another Suppliers Group member state.

¹¹GAO, *Nonproliferation: Strategy Needed to Strengthen Multilateral Export Control Regimes*, GAO-03-43 (Washington, D.C.: Oct. 25, 2002).

¹²Previously, the Nuclear Suppliers Group control list included nuclear equipment and material, the export of which would trigger a requirement that IAEA safeguards apply to the recipient facility.

Furthermore, Suppliers Group members did not promptly review and agree upon common lists of items to control and approaches to controlling them. Each member must make changes to its national export control policies after members agree to change items on the control list. If agreed-upon changes to control lists are not adopted at the same time by all members, proliferators could exploit these time lags to obtain sensitive technologies by focusing on members that are slowest to incorporate the changes and sensitive items may still be traded to countries of concern.

In addition, there are a number of obstacles to efforts aimed at strengthening the Nuclear Suppliers Group and other multilateral export control regimes. First, efforts to strengthen export controls have been hampered by a requirement that all members reach consensus about every decision made. Under the current process, a single member can block new reforms. U.S. and foreign government officials and nonproliferation experts all stressed that the regimes are consensus-based organizations and depend on the like-mindedness or cohesion of their members to be effective. However, members have found it especially difficult to reach consensus on such issues as making changes to procedures and control lists. The Suppliers Group reliance on consensus decision making will be tested by the United States request to exempt India from the Suppliers Group requirements to accept IAEA safeguards at all nuclear facilities. Second, since membership with the Suppliers Group is voluntary and nonbinding, there are no means to enforce compliance with members' nonproliferation commitments. For example, the Suppliers Group has no direct means to impede Russia's export of nuclear fuel to India, an act that the U.S. government said violated Russia's commitment. Third, the rapid pace of nuclear technological change and the growing trade of sensitive items among proliferators complicate efforts to keep control lists current because these lists need to be updated more frequently.

To help strengthen these regimes, GAO recommended in October 2002, that the Secretary of State establish a strategy that includes ways for Nuclear Suppliers Group members to improve information sharing, implement changes to export controls more consistently, and identify organizational changes that could help reform its activities. As of June 2006, the Nuclear Suppliers Group announced that it has revised its guidelines to improve information sharing. However, despite our recommendation, it has not yet agreed to share greater and more detailed information on approved exports of sensitive transfers to nonmember countries.

Nevertheless, the Suppliers Group is examining changes to its procedures that assist IAEA's efforts to strengthen safeguards. For example, at the 2005 Nuclear Suppliers Group plenary meeting, members discussed changing the requirements for exporting nuclear material and equipment by requiring nonmember countries to adopt IAEA's Additional Protocol as a condition of supply. If approved by the Suppliers Group, the action would complement IAEA's efforts to verify compliance with the NPT.

U.S. Bilateral Assistance Programs Are Working to Secure Nuclear Materials and Warheads, Detect Nuclear Smuggling, Eliminate Excess Nuclear Material, and Halt Production of Plutonium, but Challenges Remain

Reducing the formidable proliferation risks posed by former Soviet weapons of mass destruction (WMD) assets is a U.S. national security interest. Since the fall of the Soviet Union, the United States, through a variety of programs, managed by the Departments of Energy, Defense (DOD), and State, has helped Russia and other former Soviet countries to secure nuclear material and warheads, detect illicitly trafficked nuclear material, eliminate excess stockpiles of weapons-usable nuclear material, and halt the continued production of weapons-grade plutonium. From fiscal year 1992 through fiscal year 2006, the Congress appropriated about \$7 billion for nuclear nonproliferation efforts.¹³ However, U.S. assistance programs have faced a number of challenges, such as a lack of access to key sites and corruption of foreign officials, which could compromise the effectiveness of U.S. assistance.

DOE's Material Protection, Control, and Accounting (MPC&A) program has worked with Russia and other former Soviet countries since 1994 to provide enhanced physical protection systems at sites with weapons-usable nuclear material and warheads, implement material control and accounting upgrades to help keep track of the quantities of nuclear materials at sites, and consolidate material into fewer, more secure buildings. GAO last reported on the MPC&A program in 2003.¹⁴ At that time, a lack of access to many sites in Russia's nuclear weapons complex had significantly impeded DOE's progress in helping Russia to secure its nuclear material. We reported that DOE had completed work at only a limited number of buildings in Russia's nuclear weapons complex, a

¹³This includes funding for nuclear security programs, but does not include funding for parts of DOD's Cooperative Threat Reduction program that work on demilitarization, chemical or biological weapons issues, or the destruction and dismantlement of weapons delivery systems.

¹⁴GAO, *Weapons of Mass Destruction: Additional Russian Cooperation Needed to Facilitate U.S. Efforts to Improve Security at Russian Sites*, GAO-03-482 (Washington, D.C.: Mar. 24, 2003).

network of sites involved in the construction of nuclear weapons where most of the nuclear material in Russia is stored. According to DOE, by the end of September 2006, the agency will have helped to secure 175 buildings with weapons-usable nuclear material in Russia and the former Soviet Union and 39 Russian Navy nuclear warhead sites. GAO is currently re-examining DOE's efforts, including the progress DOE has made since 2003 in securing nuclear material and warheads in Russia and other countries and the challenges DOE faces in completing its work.

While securing nuclear materials and warheads where they are stored is considered to be the first layer of defense against nuclear theft, there is no guarantee that such items will not be stolen or lost. Recognizing this fact, DOE, DOD, and State, through seven different programs, have provided radiation detection equipment since 1994 to 36 countries, including many countries of the former Soviet Union. These programs seek to combat nuclear smuggling and are seen as a second line of defense against nuclear theft. The largest and most successful of these efforts is DOE's Second Line of Defense program (SLD). We reported in March 2006 that, through the SLD program, DOE had provided radiation detection equipment and training at 83 sites in Russia, Greece, and Lithuania since 1998. However, we also noted that U.S. radiation detection assistance efforts faced challenges, including corruption of some foreign border security officials, technical limitations of some radiation detection equipment, and inadequate maintenance of some equipment. To address these challenges, U.S. agencies plan to take a number of steps, including combating corruption by installing communications links between individual border sites and national command centers so that detection alarm data can be simultaneously evaluated by multiple officials.

The United States is also helping Russia to eliminate excess stockpiles of nuclear material (highly enriched uranium and plutonium). In February 1993, the United States agreed to purchase from Russia 500 metric tons of highly enriched uranium (HEU) extracted from dismantled Russian nuclear weapons over a 20-year period. Russia agreed to dilute, or blend-down, the material into low enriched uranium (LEU), which is of significantly less proliferation risk, so that it could be made into fuel for commercial nuclear power reactors before shipping it to the United States.¹⁶ As of June 27, 2006, 276 metric tons of Russian HEU—derived

¹⁶Formally known as "The Agreement Between the Government of the United States of America and the Government of the Russian Federation Concerning the Disposition of Highly Enriched Uranium Extracted from Nuclear Weapons" (Feb. 18, 1993).

from more than 11,000 dismantled nuclear weapons—have been downblended into LEU for use in U.S. commercial nuclear reactors. Similarly, in 2000, the United States and Russia committed to the transparent disposition of 34 metric tons each of weapon-grade plutonium. The plutonium will be converted into a more proliferation-resistant form called mixed-oxide (MOX) fuel that will be used in commercial nuclear power plants. In addition to constructing a MOX fuel fabrication plant at its Savannah River Site, DOE is also assisting Russia in constructing a similar facility for the Russian plutonium.

Russia's continued operation of three plutonium production reactors poses a serious proliferation threat. These reactors produce about 1.2 metric tons of plutonium each year—enough for about 300 nuclear weapons. DOE's Elimination of Weapons-Grade Plutonium Production program seeks to facilitate the reactors' closure by building or refurbishing two fossil fuel plants that will replace the heat and electricity that will be lost with the shutdown of Russia's three plutonium production reactors. DOE plans to complete the first of the two replacement plants in 2008 and the second in 2011. When we reported on this program in June 2004,¹⁸ we noted that DOE faced challenges in implementing its program, including ensuring Russia's commitment to shutting down the reactors, the rising cost of building the replacement fossil fuel plants, and concerns about the thousands of Russian nuclear workers who will lose their jobs when the reactors are shut down. We made a number of recommendations, which DOE has implemented, including reaching agreement with Russia on the specific steps to be taken to shut down the reactors and development of a plan to work with other U.S. government programs to assist Russia in finding alternate employment for the skilled nuclear workers who will lose their jobs when the reactors are shut down.

Mr. Chairman, this concludes my prepared statement. I would be pleased to respond to any questions you or other Members of the Subcommittee may have at this time.

¹⁸GAO, *Nuclear Nonproliferation: DOE's Effort to Close Russia's Plutonium Production Reactors Faces Challenges, and Final Shutdown Is Uncertain*, GAO-04-662 (Washington, D.C.: June 4, 2004).

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Appendix I: Countries' Safeguards Agreements with IAEA, as of August 2006

State	Comprehensive Safeguards Agreement	Additional Protocol	Small Quantities Protocol
Non-nuclear weapons state			
Afghanistan	X	X	X
Albania	X		
Algeria	X		
Andorra			
Angola			
Antigua and Barbuda	X		X
Argentina	X		
Armenia	X	X	
Australia	X	X	
Austria	X	X	
Azerbaijan	X	X	X
Bahamas	X		X
Bahrain			
Bangladesh	X	X	
Barbados	X		X
Belarus	X		
Belgium	X	X	
Belize	X		X
Benin			
Bhutan	X		X
Bolivia	X		X
Bosnia and Herzegovina	X		
Botswana	X	X	
Brazil	X		
Brunei Darussalam	X		X
Bulgaria	X	X	
Burkina Faso	X	X	X
Burundi			
Cambodia	X		X
Cameroon	X		X
Canada	X	X	
Cape Verde			
Central African Republic			
Chad			

Stat	Comprehensive Safeguards Agreement	Additional Protocol	Small Quantities Protocol
Chile	X	X	
Colombia	X		
Comoros			
Costa Rica	X		X
Cote d'Ivoire	X		
Croatia	X	X	X
Cuba	X	X	
Cyprus	X	X	X
Czech Republic	X	X	
Democratic People's Republic of Korea*	X		
Democratic Republic of the Congo	X	X	
Denmark	X	X	
Djibouti			
Dominica	X		X
Dominican Republic	X		X
Ecuador	X	X	X
Egypt	X		
El Salvador	X	X	X
Equatorial Guinea			
Eritrea			
Estonia	X	X	
Ethiopia	X		X
Federated States of Micronesia			
Fiji	X	X	X
Finland	X	X	
The Former Yugoslav Republic of Macedonia	X		X
Gabon			
Gambia	X		X
Georgia	X	X	
Germany	X	X	
Ghana	X	X	
Greece	X	X	
Grenada	X		X
Guatemala	X		X
Guinea			
Guinea-Bissau			

State	Comprehensive Safeguards Agreement	Additional Protocol	Small Quantities Protocol
Guyana	X		X
Haiti	X	X	X
Holy See	X	X	X
Honduras	X		X
Hungary	X	X	
Iceland	X	X	X
Indonesia	X	X	
Iraq	X		
Ireland	X	X	
Islamic Republic of Iran	X		
Italy	X	X	
Jamaica	X	X	
Japan	X	X	
Jordan	X	X	X
Kazakhstan	X		
Kenya			
Kiribati	X		X
Kuwait	X	X	X
Kyrgyzstan	X		X
Latvia	X	X	
Lebanon	X		X
Lesotho	X		X
Liberia			
Libyan Arab Jamahiriya	X	X	
Liechtenstein	X		
Lithuania	X	X	
Luxembourg	X	X	
Madagascar	X	X	X
Malawi	X		X
Malaysia	X		
Maldives	X		X
Mali	X	X	X
Malta	X	X	X
Marshall Islands	X	X	
Mauritania			
Mauritius	X		X

State	Comprehensive Safeguards Agreement	Additional Protocol	Small Quantities Protocol
Mexico	X		
Monaco	X	X	X
Mongolia	X	X	X
Montenegro			
Morocco	X		
Mozambique			
Myanmar	X		X
Namibia	X		X
Nauru	X		X
Nepal	X		X
Netherlands	X	X	
New Zealand	X	X	X
Nicaragua	X	X	X
Niger	X		
Nigeria	X		
Norway	X	X	
Oman			
Palau	X	X	X
Panama	X	X	X
Papua New Guinea	X		X
Paraguay	X	X	X
People's Democratic Republic of Laos	X		X
Peru	X	X	
Philippines	X		
Poland	X	X	
Portugal	X	X	
Qatar			
Republic of the Congo			
Republic of Korea	X	X	
Republic of Moldova	X		X
Republic of Yemen	X		X
Romania	X	X	
Rwanda			
St. Kitts and Nevis	X		X
St. Lucia	X		X
St. Vincent and the Grenadines	X		X

Stat	Comprehensive Safeguards Agreement	Additional Protocol	Small Quantities Protocol
Samoa	X		X
San Marino	X		X
Sao Tome and Principe			
Saudi Arabia			
Senegal	X		X
Serbia	X		
Seychelles	X	X	X
Sierra Leone			
Singapore	X		X
Slovakia	X	X	
Slovenia	X	X	
Solomon Islands	X		X
Somalia			
South Africa	X	X	
Spain	X	X	
Sri Lanka	X		
Sudan	X		X
Suriname	X		X
Swaziland	X		X
Sweden	X	X	
Switzerland	X	X	
Syrian Arab Republic	X		
Tajikistan	X	X	X
Thailand	X		
Timor-Leste			
Togo			
Tonga	X		X
Trinidad and Tobago	X		X
Tunisia	X		
Turkey	X	X	
Turkmenistan	X	X	
Tuvalu	X		X
Uganda	X	X	X
Ukraine	X	X	
United Arab Emirates	X		X
United Republic of Tanzania	X	X	X

Stat	Comprehensive Safeguards Agreement	Additional Protocol	Small Quantities Protocol
Uruguay	X	X	
Uzbekistan	X	X	
Vanuatu			
Venezuela	X		
Vietnam	X		
Zambia	X		X
Zimbabwe	X		X
Nuclear weapons states with safeguards agreements in force			
China	X	X	
France	X	X	
Russian Federation	X		
United Kingdom	X	X	
United States of America	X		
States with special safeguards agreements			
India			
Israel			
Pakistan			

*Although North Korea concluded a comprehensive safeguards agreement with IAEA in 1992, it announced its withdrawal from the NPT in January 2003.

Appendix II: Members of the Nuclear Suppliers Group, as of June 2006

1	Argentina	24	Latvia
2	Australia	25	Lithuania
3	Austria	26	Luxembourg
4	Belarus	27	Malta
5	Belgium	28	Netherlands
6	Brazil	29	New Zealand
7	Bulgaria	30	Norway
8	Canada	31	Poland
9	China	32	Portugal
10	Croatia	33	Romania
11	Cyprus	34	Russia
12	Czech Republic	35	Slovakia
13	Denmark	36	Slovenia
14	Estonia	37	South Africa
15	Finland	38	South Korea
16	France	39	Spain
17	Germany	40	Sweden
18	Greece	41	Switzerland
19	Hungary	42	Turkey
20	Ireland	43	Ukraine
21	Italy	44	United Kingdom
22	Japan	45	United States
23	Kazakhstan		

Source: Nuclear Suppliers Group Statement, Nuclear Suppliers Group Strengthening the Nuclear Non-Proliferation Regime, Brasilia, June 2, 2006.

Appendix III: Additional Information on U.S. Nuclear Nonproliferation Programs

Project	Description
Department of Energy Projects	
Global Radiological Threat Reduction	Secures radiological sources no longer needed in the U.S. and locates, identifies, recovers, consolidates, and enhances the security of radioactive materials outside the U.S.
Global Nuclear Material Threat Reduction	Eliminates Russia's use of highly enriched uranium (HEU) in civilian nuclear facilities; returns U.S. and Russian-origin HEU and spent nuclear fuel from research reactors around the world; secures plutonium-bearing spent nuclear fuel from reactors in Kazakhstan; and addresses nuclear and radiological materials at vulnerable locations throughout the world.
Elimination of Weapons-Grade Plutonium Production project	Provides replacement fossil-fuel energy that will allow Russia to shutdown its three remaining weapons-grade plutonium production reactors.
International Safeguards project	Develops and delivers technology applications to strengthen capabilities to detect and verify undeclared nuclear programs; enhances the physical protection and proper accounting of nuclear material; and assists foreign national partners to meet safeguards commitments.
Russian Transition Initiatives project	Provides meaningful employment for former weapons of mass destruction weapons scientists.
Nuclear Warhead Protection project	Provides material protection, control, and accounting upgrades to enhance the security of Navy HEU fuel and nuclear material.
Weapons Material Protection project	Provides material protection, control, and accounting upgrades to nuclear weapons, uranium enrichment, and material processing and storage sites.
Material Consolidation & Civilian Sites project	Enhances the security of proliferation-attractive nuclear material in Russia by supporting material protection, control, and accounting upgrade projects at Russian civilian nuclear facilities.
National Infrastructure & Sustainability project	Develops national and regional resources in the Russian Federation to help establish and sustain effective operation of upgraded nuclear material protection, control and accounting systems.
Second Line of Defense & Megaports Initiative project	Negotiates cooperative efforts with the Russian Federation and other key countries to strengthen the capability of enforcement officials to detect and deter illicit trafficking of nuclear and radiological material across international borders. This is accomplished through the detection, location and identification of nuclear and nuclear related materials, the development of response procedures and capabilities, and the establishment of required infrastructure elements to support the control of these materials.
HEU Transparency Implementation project	Monitors Russia to ensure that low enriched uranium (LEU) sold to the U.S. for civilian nuclear power plants is derived from weapons-usable HEU removed from dismantled Russian nuclear weapons.
Surplus U.S. HEU Disposition project	Disposes of surplus domestic HEU by down-blending it.
Surplus U.S. Plutonium Disposition project	Disposes of surplus domestic plutonium by fabricating it into mixed oxide (MOX) fuel for irradiation in existing, commercial nuclear reactors.
Surplus Russian Plutonium Disposition project	Supports Russia's efforts to dispose of its weapons-grade plutonium by working with the international community to help pay for Russia's program.

Project	Description
Department of Defense Projects	
Personnel Reliability and Safety	Provides training and equipment to assist Russia in determining the reliability of its guard forces.
Site Security Enhancements	Enhances the safety and security of Russian nuclear weapons storage sites through the use of vulnerability assessments to determine specific requirements for upgrades. DOD will develop security designs to address those vulnerabilities and install equipment necessary to bring security standards consistent with those at U.S. nuclear weapons storage facilities.
Nuclear Weapons Transportation	Assists Russia in shipping nuclear warheads to more secure sites or dismantlement locations.
Railcar Maintenance and Procurement	Assists Russia in maintaining nuclear weapons cargo railcars. Funds maintenance of railcars until no longer feasible, then purchases replacement railcars to maintain 100 cars in service. DOD will procure 15 guard railcars to replace those retired from service. Guard railcars will be capable of monitoring security systems in the cargo railcars and transporting security force personnel.
Weapons Transportation Safety Enhancements	Provides emergency response vehicles containing hydraulic cutting tools, pneumatic jacks, and safety gear to enhance Russia's ability to respond to possible accidents in transporting nuclear weapons. Meteorological, radiation detection and monitoring, and communications equipment is also included.

Source: GAO analysis.

Related GAO Products

Combating Nuclear Smuggling: Challenges Facing U.S. Efforts to Deploy Radiation Detection Equipment in Other Countries and in the United States. GAO-06-558T. Washington, D.C.: March 28, 2006.

Combating Nuclear Smuggling: Corruption, Maintenance, and Coordination Problems Challenge U.S. Efforts to Provide Radiation Detection Equipment to Other Countries. GAO-06-311. Washington, D.C.: March 14, 2006.

Nuclear Nonproliferation: IAEA Has Strengthened Its Safeguards and Nuclear Security Programs, but Weaknesses Need to Be Addressed. GAO-06-93. Washington, D.C.: October 7, 2005.

Preventing Nuclear Smuggling: DOE Has Made Limited Progress in Installing Radiation Detection Equipment at Highest Priority Foreign Seaports. GAO-05-375. Washington, D.C.: March 31, 2005.

Nuclear Nonproliferation: DOE's Effort to Close Russia's Plutonium Production Reactors Faces Challenges, and Final Shutdown is Uncertain. GAO-04-662. Washington, D.C.: June 4, 2004.

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Nuclear Nonproliferation: U.S. Efforts to Help Other Countries Combat Nuclear Smuggling Need Strengthened Coordination and Planning. GAO-02-426. Washington, D.C.: May 16, 2002.

Nuclear Nonproliferation: Implications of the U.S. Purchase of Russian Highly Enriched Uranium. GAO-01-148. Washington, D.C.: December 15, 2000.

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Mr. SHAYS. Thank you very, very much.

Let me start by asking you all how does the IAEA fit into our effort to deal with Islamist terrorism? Well, first let me do it this way. Is the concern with terrorism that they will get weapons grade material or they will actually get the weapon and the material? Is there a concern, is there an acknowledgement that they can make the weapon, particularly enriched uranium, but would have a hard time getting the weapons grade material? Do you get where I am coming from? In other words, I want to know how relevant the IAEA is to deal with the terrorist threat, and I want to know how relevant the Non-Proliferation Treaty is to dealing with the terrorist threat.

Who wants to start? Mr. Semmel, I will start with you.

Mr. SEMMEL. I think, Mr. Chairman, that in my opening remarks I said that we need to have a comprehensive approach to nuclear nonproliferation, and that would include a whole panoply of programs, such as export controls and protecting materials at their sources, and export controls and things like that are always essential.

At the end of the day what we were trying to do, as Jack David indicated in his remarks, we want to make sure that dangerous materials do not get into the hands of dangerous organizations or individuals.

Now, in order to do that you have to be able to protect or destroy some of the sources that the terrorist organizations might want to have access to, and, again, there is a variety of programs that are essential for doing that.

The IAEA does have, in addition to its important safeguards and inspection roles that it does, it also has a program called the nuclear security fund, which is a new program that was set up three or 4 years ago, I think, in which the United States is the principal contributor to this. Essentially what that program does is to ensure greater physical protection at facilities and also of materials, better protection of the materials at the various nuclear facilities. This is a program that the IAEA, in that sense, does have a very direct role in terms of making sure that dangerous materials—in this case nuclear materials—don't get into dangerous hands.

I might want to say in your second part of your question, one of the things I think that was discovered in the initial stages of ousting Al Qaeda from Afghanistan is that there was some discovery of documents and materials in which Al Qaeda did have some documentation on designs and nuclear weapons. The question is what could they do with that. It would be very difficult without an infrastructure to be able to take those designs and make something of them. So I think it is a long way between having—

Mr. SHAYS. Let me just ask, before the others respond, do you agree that it is relatively easy to build a crude nuclear weapon that could create an explosion with using enriched uranium? Do you agree that you could build a crude weapon, not one that would maximize yield, not one that would be particularly large in its impact, but it would still be a nuclear explosion? Do you agree with that?

Mr. SEMMEL. It could be done. The key is whether or not a group would have access to fissile material.

Mr. SHAYS. That is the issue.

Mr. SEMMEL. Yes. Right.

Mr. SHAYS. But we can get beyond this issue of whether they can build a specifically.

Mr. SEMMEL. Right.

Mr. SHAYS. You do agree that they could build a weapon?

Mr. SEMMEL. With the right infrastructure and technological know-how, yes, and to have access to that.

Mr. SHAYS. We are not talking about a small, well-crafted weapon with high yield. We are just talking about a weapon.

Mr. SEMMEL. Yes. Something beyond a dirty bomb is what you are referring to?

Mr. SHAYS. Yes. Exactly.

Mr. SEMMEL. Right. Yes.

Mr. SHAYS. Mr. David, what is your response to that question?

Mr. DAVID. Well, designs for nuclear weapons have been in the open ever since a college student wrote his thesis on it and published it a long, long time ago.

Mr. SHAYS. And ran against my predecessor. Actually, he was from Princeton.

Mr. DAVID. Yes.

Mr. SHAYS. So that is clear.

Mr. DAVID. So there are designs. There is public information out there. There are a number of people who know how to do the engineering tasks that would allow either a complicated or less-complicated weapon. The question is whether the ingredients for a terrorist group to create such a weapon are easy to come by, and the more ingredients there are and the more—

Mr. SHAYS. When you say ingredients, weapon grade material?

Mr. DAVID. I mean the fissile material, the other parts of the weapon that are necessary in order to initiate a chain reaction, a fusion explosion from the nuclear material, and putting them in the right juxtaposition and the like. All of those kinds of things are the kinds of things we need to keep away from terrorists, and by the means which we have, and we have been trying to do that through the IAEA through, resolution 1540, through intradiction activities, through the proliferation security initiative. All of those efforts are to keep away from terrorists the things they would need to make WMD.

Mr. SHAYS. I don't want to draw a wrong conclusion, but I have been spending time since 1998, in particular, in my subcommittee looking at this issue. If I am wrong I want to be corrected, but, you know, when you hold enriched uranium in your hand and you can put it in your pocket, when you hold plutonium in your hand wearing a glove, when you realize that it doesn't necessarily give out the kind of signal in transporting it that I thought it did, when you see a weapon at Los Alamos that basically was made with material that you could get from commercial sources, I come to the conclusion—and that is what I was trying to develop—was where is the effort they important.

Mr. Semmel agrees that you could build a weapon. He agrees you have the technology. I infer, Mr. Semmel, also that it would not be hard to get the material to build a raw, inefficient type of nuclear

weapon. That is what I have been told. I want to know if that is the case.

Mr. David, you are sending me mixed signals just a little bit because you are implying that the materials to make the weapon, we would be able to keep them out of the hands of terrorists. I don't think we can. I think the issue really relates to one issue on weapons grade material.

Mr. DAVID. What I had in mind is that the strictures of 1540 enjoining countries to pass laws that prohibit their citizens to aggregate these materials for the purpose of making WMD. That is the sort of thing I had in mind.

Mr. SHAYS. But tell me if I am wrong, and if you don't know tell me that, and if I am wrong tell me I am wrong.

Mr. DAVID. Say again?

Mr. SHAYS. If you don't know if I am wrong, tell me you don't know. If you think that I am wrong, tell me I am wrong. It is my understanding, based on the work that my subcommittee has done, that a terrorist could build a raw, inefficient nuclear weapon that would be actually a nuclear fissile, a chain reaction. The issue is it wouldn't be something you could put on the tip of a missile, but in those days we cared about what went on the tip of a missile, so if you couldn't put it on a missile we didn't care about it.

Now comes the wake-up call, September 11th, our fear of Islamist terrorists, our knowledge that they want nuclear weapons. It is fairly clear to me—if I am wrong, tell me—that terrorists could make a very crude nuclear weapon with material that mostly is available commercially. If you disagree with that, tell me you disagree with it. If you agree with it, tell me you agree with it. If you don't know, tell me you don't know.

Mr. Tobey, let's start with you.

Mr. TOBEY. I believe that the greatest barrier to a proliferant obtaining the capability to produce a nuclear weapon is acquisition of fissile material.

Mr. SHAYS. I don't want to go there. I don't want to talk about fissile material. I just want to talk about the weapon. Let's take the weapon first. All I am trying to do is build a case for the need to make sure fissile material doesn't get in the wrong hands. I have constituents who think the bomb is the problem, the weapon, itself, the building the weapon. I want this hearing to be able to illustrate if this is a problem or not.

Mr. TOBEY. I agree we should focus on fissile material.

Mr. SHAYS. And because?

Mr. TOBEY. Because that is the greatest barrier to a proliferant obtaining a weapon and it is the one which we can control most directly.

Mr. SHAYS. OK. So your definition of a weapon is the structure and the material together?

Mr. TOBEY. Yes.

Mr. SHAYS. But to build a bomb minus the fissile material is something they are capable of doing. Do you believe that is the case?

Mr. TOBEY. I believe so, yes.

Mr. SHAYS. Yes. Mr. Semmel, what is your view?

Mr. SEMMEL. I think I said yes. I think it is possible.

Mr. SHAYS. I just want to be clear.

Mr. David?

Mr. DAVID. Well, the answer is yes, but you have to know how to put together the neutron initiator. There is some knowledge. Somebody with a third grade education with no knowledge of what to do couldn't do it.

Mr. SHAYS. But a graduate student from—

Mr. DAVID. Yes. Correct.

Mr. SHAYS. And we do know that there are Islamists who have those degrees.

Mr. DAVID. Yes.

Mr. SHAYS. Yes. Mr. Aloise?

Mr. ALOISE. Based on the experts we have talked to, it is possible with a crude nuclear device.

Mr. SHAYS. OK. So let's get that off the table.

The real issue then is the weapons grade material. Only as it relates to terrorist, if you were to explode a nuclear weapon, the kind of weapon that terrorists would make would be one that would use what? Enriched uranium? I mean, in other words, when we talk about it—and if I am asking the wrong people, then just tell me. The capability to create a crude bomb basically is our biggest concern is with enriched uranium? Nodding of heads won't get in the recorder here. If anybody wants to answer it, I am happy to take this.

Mr. SEMMEL. Again, I take the same plea that Hans Blix did. I am not a technician on this or physicist.

Mr. SHAYS. Right.

Mr. SEMMEL. But I think what I have read, what I understand, that enriched uranium would be the preferred source, yes.

Mr. SHAYS. And, see, I am just focusing on terrorism right now because it seems to me we have been focused on what someone could put on the tip of a missile on a warhead. There you need the sophisticated weaponry, you need the plutonium and so on. But I have been just focused primarily on our work on what terrorists can do, and that is maybe why you hear me focused on this.

So let me ask you what is the challenge with each of you. Describe to me the difference between plutonium and enriched uranium in terms of its creation and in terms of our capability to secure it. Is there any difference?

Mr. TOBEY. In terms of creation, Mr. Chairman, as I am sure you know, there are two paths to a weapon. One is weapons grade plutonium, generally manufactured through running nuclear reactors and separating the plutonium from the spent fuel, and then the other one is to enrich uranium, very different paths. They have different signatures. They require different technologies. I think there are differences in our ability to monitor those activities.

Mr. SHAYS. Let me just ask if anybody agrees. What I will assume is if one person answers the question we don't need to go to the second person if there is agreement, unless you just jump in. And that applies to Mr. Aloise, as well. Feel free to jump in here.

So if enriched uranium becomes the bigger concern as the weapon grade material of choice for a terrorist, should there be different protocols to deal with that?

Mr. TOBEY. We are interested in securing both weapons grade plutonium and highly enriched uranium and disposing of each with the former Soviet states.

Mr. SHAYS. What I am struck with, though, is that for a terrorist to basically use plutonium, they would have to have the weapon come along with it. If they used enriched uranium, they might have the capability to create the weapon, themselves. That is where my mind is.

Is there any comment about that? Mr. Aloise, do you have any comment about that? If you disagree with my assumptions, let me know.

Mr. ALOISE. I am going to have to pass on that question, Mr. Chairman.

Mr. SHAYS. OK. Anyone care to answer that question?

[No response.]

Mr. SHAYS. Do you all know why I am asking these questions? In other words, I am looking at a little bit of confusion here and I have been known to confuse people, but do you understand why I am going down this road? If I am going down a road that makes no sense, I am happy to have you correct mitigation.

Mr. TOBEY. Well, we are certainly interested in minimization of use of HEU throughout the world.

Mr. SHAYS. Right.

Mr. TOBEY. We have worked hard to return it from HEU reactors and to convert them to LEU and to return the fresh and spent fuel to its sources, so we would certainly agree with that as a problem.

I guess I would just point out that we are also concerned with the weapons grade plutonium as well and believe it is important to secure and dispose of plutonium.

Mr. SHAYS. Yes?

Mr. DAVID. Mr. Chairman, I would agree with that, and I would also say that, as far as I am concerned, I don't know that I could draw the distinctions between the relative difficulty for very smart graduate students who are probably motivated making a crude weapon out of uranium or a crude weapon out of plutonium. I understand that the uranium route is an easier one technologically, engineering-wise, but I am not sure about the gradations of making a plutonium weapon, and I don't think I am qualified to comment on that.

Mr. SHAYS. Maybe our third panel will be able to express an opinion on it.

Let me go do this. Let me go to Mr. Van Hollen. I have been over my time limit.

Mr. VAN HOLLEN. Thank you very much, Mr. Chairman. Let me thank all of the witnesses for your testimony and for your public service. Let me just say a special word about Mr. Semmel, who I have worked with early on in the 1980's. I had an opportunity to work with Andy at the Defense Department when we were both at the Defense Security Systems Agency, I as a very new person, really, interning there. I want to thank him for his service. I learned a lot from him during my years there and I want to thank him and all of you for your service.

Let me just ask you all about A.Q. Kahn and the information and technologies that he essentially steered in the direction of Iran and

Libya and others. I assume you would all agree that it would be useful if we were to be able to sit down and talk to A.Q. Kahn and figure out exactly what technologies he provided, wouldn't you agree? And my understanding is that we have not had that opportunity. Have we had that opportunity, the U.S. Government, to sit down with A.Q. Kahn? The answer is no, right?

Mr. SHAYS. Let me just say this. It is important that we get a yes or no because the transcriber is still not good at getting shaking of heads one way or the other.

Mr. VAN HOLLEN. If I could just get an authoritative answer from someone on the panel.

Mr. SEMMEL. Short answer, we have learned a lot from A.Q. Kahn. We have not had extended sit-downs with him.

Mr. SHAYS. Let me just interrupt 1 second just to say if, in fact, one person answers, we are going to make an assumption either you have nothing that would contradict that answer or you agree with the answer. If someone disagrees with the answer, then we would expect that you would jump in. Thank you.

Mr. VAN HOLLEN. Has the U.S. Government or an official of the U.S. Government representing the U.S. Government had the opportunity to sit down with A.Q. Kahn to discuss the information and technologies that he provided to Iran or Libya?

Mr. SEMMEL. That is a very sensitive question. I think we would have to get into a closed session on that. I can just tell you, to repeat, that we have had lots of information that has come out in interviews that have taken place with him, but to the extent that we have had personal one-on-one type of interviews I think we would have to sit down and talk about that in closed session.

Mr. VAN HOLLEN. I understand that. Let me ask you this: are you satisfied that we, the U.S. Government, has the benefit of everything that you think would be useful to know from A.Q. Kahn?

Mr. SEMMEL. Well, to take lead on this one, we don't know what we don't know, to begin with, and I would suggest and assume that there is information that we would like to have that we don't have. We have to make that assumption at this stage of the game.

Mr. VAN HOLLEN. Well, let me just say we have had President Musharaff here and we want to thank him for his support and efforts with respect to going after Al Qaeda in Afghanistan, although I happen to think that the Pakistani government could be doing a whole lot more than they are now, but I also think that we should be using the opportunity to make sure that we get the maximum amount of information that we can from A.Q. Kahn. It was a gross diversion of important technology and information, and I think there are still many questions where his input and testimony could be helpful.

Let me just turn quickly to the question of Iran. Mr. Negroponte back in April said that his assessment and the assessment of the intelligence community with respect to when Iran might obtain a bomb was somewhere at the beginning of the next decade between 2010 and 2015. Is there any information any of you gentlemen have that would change that assessment?

Mr. DAVID. That gets into another area that would be with classified information, I think.

Mr. VAN HOLLEN. That was something that Mr. Negroponte said on the record with respect to that timeframe. Is there any information that would change that assessment?

Mr. DAVID. Whether there is information or not about the time lag for n to complete making its nuclear weapon is a subject that should be discussed in a classified round.

Mr. VAN HOLLEN. Let me ask you, Mr. Chairman, if there has been a change in this assessment I would encourage us to seek a session in the intelligence community room.

Mr. SHAYS. Would the gentlemen be clear as to what he is requesting?

Mr. VAN HOLLEN. My question is if the U.S. Government now has a different assessment with respect to the timeframe in which Iran might obtain a nuclear weapon. I would like to know that. If there has been a change in that assessment, whether or not there has been a change, we have to go into a secret session, I think we should do that.

Mr. SHAYS. I think you are right. Thank you.

Mr. VAN HOLLEN. Let me just ask the gentlemen, there was a staff report that was issued by the House Intelligence Committee. Are you familiar with that report?

Mr. SEMMEL. Yes.

Mr. VAN HOLLEN. OK. Have you had an opportunity, Mr. Semmel, to review that report?

Mr. SEMMEL. I know of the report. Yes.

Mr. SHAYS. OK. I mean, we have some of the people who are the top officials on nonproliferation here at the table for the administration, right? I am just trying to get information out here.

Mr. DAVID. May I interject that you are asking questions that we get information on from the intelligence community about, and perhaps the intelligence community would be a better source for asking information about the current intelligence.

Mr. VAN HOLLEN. All right. Well, Mr. Semmel, have you had an opportunity to look at the House Intelligence Committee report?

Mr. SEMMEL. I think to be very fair about this I have not read the report. I know of the report. There has been obviously extensive media coverage. In fact, as I like to say, column eight, I think the Washington Post front page at one point in time had coverage of the report. I have not read it. I have seen the response to the IAEA to the report, but I have not read it in depth, but I understand. I see the commentary on the report.

Mr. VAN HOLLEN. I mean, just for the record, as you have stated, Mr. Semmel, the IAEA actually took the sort of unusual step of writing to the chairman of the House Intelligence Committee specifically taking issue with the number of points raised in the report, stating that they were wrong based on the IAEA's information. I think, given our past mistakes of the U.S. Government with respect to intelligence gathering to lead up to the war in Iraq, and given the fact that the IAEA and Mr. Blix, within his domain, got it a lot more correct than the U.S. Government, it would behoove us, it seems to me, to listen. There were points raised by the IAEA.

I guess my question to you, if any of you gentlemen know, is: do you agree with the points that were raised? And let me just say this is a report that was released. I mean, I have the report right

here. This is not a classified report. I mean, we don't need the intelligence community here to testify with respect to particular points in that public report, at least as they relate to claims about Iran's advances on the nuclear program and the proliferation issue. So I guess my question to each of you is: do you have any reasons to doubt the IAEA's claims that portions of the report were wrong? Do you have any reason to dispute what the IAEA said about the House intelligence Committee's report?

Mr. DAVID. I haven't read the report and I am not going to quibble with one side or the other side about what they said about this detail or that detail, but there isn't the slightest doubt in my mind, from everything that I know, that Iran is seeking a nuclear weapon.

Mr. VAN HOLLEN. That wasn't my question, sir. I just want to make sure, because I think the intelligence assessments, as I think we have learned the hard way, are very important. My only question is—and I guess the answer is no, that you don't have any information that would dispute the claims raised by the IAEA in their letter; is that right?

Mr. SEMMEL. I would just say, Mr. Congressman, that first of all the report, as I understand the House Intelligence Committee report, was derived largely from public source information and it was not information that was derived that was sensitive, but it was from a variety of sources that are available out there that all of us can access to with diligent research, and so on.

I have seen the IAEA's response to the report and I think the IAEA, to the extent we can agree with the IAEA's assessment and the various reports that have been done over the years on Iran, the IAEA I think, if we give that some veracity, then I think the IAEA's letter is something that I personally could not disagree with.

Mr. VAN HOLLEN. Thank you. Now, Mr. David, you mentioned your assessment with respect to Iran's intentions, and I am not disputing your assessment of their intentions. At the United Nations recently President Bush did make a number of statements with respect to Iran, and one of the things he said was, "We have no objections to Iran's pursuit of a truly peaceful nuclear power program." My question to you gentlemen is: how would we go about designing a peaceful civilian nuclear power program in Iran that satisfied our nonproliferation concerns?

Mr. SEMMEL. Well, I think the first order of business is to get some confidence that, indeed, the program that Iran has been embarking on for the past nearly two decades is something that we can believe with a high degree of confidence is not aiming at some nuclear weapons capability. There have been at least seven resolutions and six or seven reports by the Secretariat of the IAEA that raises questions about that.

Before we can hope to even come to any inkling of an inference that Iran has embarked upon purely a nuclear energy program, devoid of any nuclear weapons intentions, it seems to me we have to clean up the record at this point in time as to where Iran has been, where they are right now. And, indeed, the Director General's report on August 31st, the most recent report, indicates that Iran has not taken the steps that are necessary to alleviate any concerns

that we have about their intentions beyond what they say they are with regard to a civil nuclear energy program.

I think before we even get into that degree of confidence we have to resolve the existing problems.

Mr. VAN HOLLEN. I understand that. I understand that, Mr. Semmel, but that was not the question. This is not my statement. This is the President's statement. The President went beyond saying what we all agree, that we don't want Iran to have a nuclear weapons program, he went on to say that he had no objection to Iran's pursuit of a truly peaceful nuclear power program. I am quoting from his statement before the United Nations.

I am not saying that is a good idea or a bad idea, but I assume before making that statement the administration had done some assessment about whether he could design a program that gave it confidence that Iran could have the benefits of civilian nuclear power, which the President states, and at the same time meet any concerns we have with respect to nonproliferation. I assume the President and the administration did some assessment of that before he made that statement. I am just curious as to exactly whether or not you are familiar with any work that has been done on that question and what the proposal is from the administration, some rough design or program that would address that point made by the President.

Mr. TOBEY. Congressman, I think that one could look at hallmarks of such a peaceful program, and in the U.N. Security Council resolution that was passed on Iran, which actually is derived from the IAEA Board resolutions, and in that resolution it talks about suspension of enrichment and reprocessing, halting construction of the heavy water reactor that was referred to by Dr. Blix, and full cooperation with the IAEA, including adoption or ratification of the additional protocol. I think these would be steps toward providing assurance to the international community that Iran's programs were, indeed, for peaceful purposes.

Mr. VAN HOLLEN. Thank you. I yield back.

Mr. SHAYS. I thank the gentleman very much.

Mr. Duncan, you have the floor.

Mr. DUNCAN. Well, thank you very much, Mr. Chairman. I had some previously scheduled appointments, and I am sorry I did not get to hear the testimony, and so I am sure you probably want to get on to the next panel, so—

Mr. SHAYS. We are fine, sir. Just do your thing.

Mr. DUNCAN. Thank you. Just a couple of brief questions.

First of all, to all of the gentlemen on the panel, I understand that you have very important positions in our Government, and from what I have read and heard and so forth I know there are other countries that cooperate and are involved in this process, but I have the impression that the U.S. really takes the lead and does far more than any other country in devoting money, resources, manpower, leadership, and employees, and everything else to the nuclear nonproliferation effort throughout the world. Would you say that is correct?

Mr. TOBEY. Yes, sir. I take some pride. I am new to the job, so I can take some pride but no credit for the fact that I think we

have one of the best or the best nonproliferation organization in the world.

Mr. DUNCAN. Well, I think that is something we should be proud of. I just wanted to put that on the record.

Mr. David, you said that you had no doubt that Iran is attempting to develop nuclear weapons. There is a report in the Washington Times today about some type of possible deal that would suspend their uranium enrichment program for 90 days while talks would continue. Do you feel that is just some sort of delaying tactic, or do you see any problems with talks of that nature, if they are going on?

Mr. DAVID. I think that it is very important that we exhaust every bit of diplomacy we could possibly exhaust to attempt to prove that Iran could be dissuaded from going forward on the path that I believe it is going forward on. I don't know whether or not this hint of a 90-day suspension is real. We have had hints of cooperation from Iran many times before, only to have them withdrawn for one reason or no reason. I hope it is a promise and I hope that there are negotiations and I hope that they are successful.

Mr. DUNCAN. All right. Thank you very much.

Thank you, Mr. Chairman.

Mr. SHAYS. Thank you.

Let me talk about the IAEA. First off, it was my understanding that for about 15 years it was a zero growth budget at the IAEA. Was that the fault of the United States or just a general decision of all the countries involved? If that has changed now, are we the major proponents of increasing their budget or are we tolerating the increase? Who could speak to that issue?

Mr. SEMMEL. I can start out on that. You are absolutely correct. I think for a period of perhaps 15 to 20 years—I don't know the exact amount—that IAEA was operating in its regular budget at zero growth, and it was not until about three or 4 years ago that, through a concerted effort in which the United States took a lead role, that we pushed against considerable opposition at the IAEA to increase the budget.

Mr. SHAYS. Even within the—

Mr. SEMMEL. That was in the Secretariat, but with opposition among other states' parties to the IAEA.

Mr. SHAYS. OK. And what do we think was the reason for their reluctance to see it have a budget that would grow with at least inflation?

Mr. SEMMEL. Well, other countries are mindful of their taxpayers and simply do not want to have the obligation to have to pay and come up with more annual payments, regular payments.

Mr. SHAYS. So we pay a disproportionate share, in one sense, but we were willing to say we need to do it. We weren't paying others' shares. We were saying we all need to step up to the plate and we all need to contribute?

Mr. SEMMEL. Right. The increase would, of course, be disproportionately falling on the United States, since we pay already 25 percent of the regular budget. Other countries are reluctant to pay additional assessments to a IAEA and they resisted that. It took sev-

eral years of effort, in fact, to get the increase approved at the IAEA.

Mr. SHAYS. Now, we have candid criticism of the United Nations, its failure to deal with a variety of issues. Our criticism is not shared by many of our very good friends around the world. But do we have that same criticism of the IAEA? Are we comfortable with its approach, its energy, its capabilities, its powers? Do we recommend that it have new people? Do we recommend that it have new powers, new capabilities? If all three of you, and Mr. Aloise, if you want to step in, as well, maybe you could give us your sense of what we think as we view it from the legislative side.

Mr. ALOISE. First of all, I think the general view, from the people we have talked to all over the world and our U.S. Government, is that IAEA is a very important agency which has a lot of respect. Despite some problems in the past, it is really the only agency out there that is in other people's countries verifying nuclear materials.

It is facing a lot of challenges, not only budgetary but, as I mentioned in my statement, its human capital challenge. It is going to lose a large number of its safeguards inspectors in the next 5 years.

Mr. SHAYS. That is a funding issue or retirement?

Mr. ALOISE. Retirement issue. And some of that relates to IAEA's personnel policies. They have a mandatory retirement age that is forcing a lot of people out. In fact, the State Department and the Department of Energy have come up with some very novel ideas to keep people working there at IAEA, even though they are beyond the retirement age.

We have made recommendations in our report that State Department needs to work with IAEA to help change the personnel policies because it is working against them in many cases. For example, they need people who have expertise in uranium enrichment processes, and are not even taking the actions they need—IAEA is to get these people. Further, there are not that many students going through these nuclear studies any more and the pool is shrinking of experts to choose from.

Mr. SHAYS. Thank you. I would like to hear from Energy, State, and Defense on the questions that I ask, you know, how the IAEA is doing, our Government's sense of what it is doing. You heard me before, so I don't need to repeat.

Mr. TOBEY. I think the IAEA plays an important and constructive role. We do think that there are ways in which the IAEA's work can be improved, and we are trying to work with both the Secretariat and other member states, and, in particular, the Board of Governors. I would cite, particularly, improving IAEA authorities through universal adherence to the additional protocol, and we would also like to improve their capabilities through better technology. We are working to do that with safeguards technology agreements.

Mr. SHAYS. So while you have touched technology, let me just ask you to give me an example of different technologies and what we would like, what they like them to use.

Mr. TOBEY. I think we, frankly, would like to see better monitoring technologies. Some of that gets politically sensitive, but real-time monitoring of installations could be an improvement.

Mr. SHAYS. OK. Mr. Semmel.

Mr. SEMMEL. Yes, Mr. Chairman. When President Bush made the now-well-known speech at the National Defense University in February 2004, he laid out seven nonproliferation initiatives. Interestingly enough, three of them pertain directly or indirectly to the IAEA. One of them had to do with what we have already mentioned here, pushing for universalization of the additional protocol, which is a strengthening safeguards agreement on the part of countries.

The second one was something which we call now the Committee on Safeguards and Verification. This is a Committee on Safeguards and Verification that the IAEA actually approved unanimously last June, June a year ago, and is designed to be advisory to the Board of Governors at the IAEA and to identify ways in which we can strengthen safeguards and improve the IAEA's ability to be able to detect illegal use of materials, and so forth.

There is a third initiative, which the President also mentioned, which we are working on at this point in time.

So on a number of issues we obviously agree that the IAEA is an important part of the nonproliferation regime, if you want to call it that, but that it needs to be strengthened. We are the major contributor, as you pointed out. We also contribute on an annual basis voluntary contribution in the vicinity of around \$50 million a year. Once again, we are the single largest contributor in the voluntary funds. Some of those resources go to improve safeguards.

To address what Mr. Aloise said, one small fraction of those voluntary funds also go to fund something called cost-free experts, in which we provide, on a non-reimbursable basis, to the IAEA individuals that have certain technical skills that the IAEA otherwise does not have, and we basically pay for that person. It could be a year, 2 years, two and a half years. One of my colleagues was there for 2½ years.

Mr. DAVID. I would only add to what my colleague said, that the Committee on Safeguards and Additional Protocol, which President Bush suggested in 2004, and which has come into existence, is also discussing the issue of the loss of personnel and bolstering up the personnel who could do inspections and the like, and dealing with the problems that Mr. Aloise talked about.

Mr. SHAYS. Let me ask you, I have been to Mayak, the facility. It was an amazing experience, forty hectares of property and a huge building on that property. How much of the weapons grade material of the Soviet Union actually is captured in that facility?

Mr. DAVID. I can't tell you how much, but I know they started putting it in in July and we are really happy about that.

Mr. SHAYS. Yes. I mean, this is a facility, as I remember, football fields in size, very thick ceiling, I think ten feet or more, tubes that go down about 18 feet. Bottom line is, it is going to hold a lot of material, baskets all along the way. But we are starting to see that capture some of it?

Mr. DAVID. Finally in July. As you know, it was a point of contention between Russia and ourselves for a long time, but it wasn't being used. They actually finally started moving material into the facility in July of this year.

Mr. SHAYS. OK. And so the question I have, though, is that a significant amount of extra weapons grade material, or is it a small percent?

Mr. DAVID. As far as I know, it is an ongoing process at this point of moving material in there. I don't know how much has been put in so far, but our expectation and our requirement is that they use this facility that CTR funds, United States taxpayer funds, helped to build.

Mr. SHAYS. And the question is: have we been able to express an opinion about the safeguarding of the transporting of this material to Mayak?

Mr. TOBEY. We do, I believe, address transportation issues within Russia, yes, help to fund secure ways to do that.

Mr. SHAYS. OK. Mr. Duncan, do you have any questions you want to ask?

Mr. DUNCAN. Iran, Mr. Chairman.

Mr. SHAYS. OK. Let me just ask you about the Fissile Material Cutoff Treaty. The question I am going to ask is: how has U.S. opposition to international verification of the Fissile Material Cutoff Treaty undermined the Nuclear Non-Proliferation Treaty?

Mr. SEMMEL. Well, I am not sure that it is, first of all.

Mr. SHAYS. I am going to ask, since my knowledge in this area is a little weak, I am going to just ask that my professional staff, participate in this. But that is the question I asked you. Why don't you answer it and then I will have him followup.

Mr. SEMMEL. I would say, Mr. Chairman, that, in fact, if you were to ask other members of the Conference on Disarmament where the FMCT, Fissile Material Cutoff Treaty, has already been introduced, we have introduced the text in July, as well as a mandate for negotiations on the FMCT. If you were to ask everybody else, there are serious questions that some countries had, particularly on the verification issue, but there are some other issues about definitions of what is fissile material.

Mr. SHAYS. When you say some countries, can you define what—

Mr. SEMMEL. In order for the Fissile Material Cutoff Treaty to be a treaty and to be enforced, obviously we have to negotiate it with other countries. Other countries would have expressed some concerns, particularly about the fact that the text that we have introduced did not include a verification provision in it, so this is an issue which we will have to negotiate.

I can tell you this, though, to respond more directly to your question: virtually everybody is happy that we have gotten this text of the treaty introduced, for no other reason than that if you look at the track record of the Conference on Disarmament, it has done virtually nothing for the past 10 years. It has accomplished zero. And the reason it has accomplished zero is because every country or set of countries wants to tie their issues to other issues and they can't get a work plan developed.

One issue that there is general consensus on that we ought to move forward on, however we move, whether it is fast or slow or whatever the nature of the text might be, is the FMCT. So there is a general—I wouldn't call it elation, but a general happiness that the Conference on Disarmament in Geneva may actually get down,

if not this year certainly next year, to begin to iron out its agenda and begin to negotiate on that. So they are pleased. We are pleased that the FMCT finally has been introduced, and I think if we were to make progress, if we were to negotiate this over the next several years, this would be a strengthening of the NPT, not weakening it.

Mr. CHASE. Mr. Aloise, can you respond?

Mr. ALOISE. I really don't have a response.

Mr. CHASE. OK. Just a followup to that, then: has the U.S.'s civil nuclear cooperation with India changed the FM Cutoff Treaty?

Mr. SEMMEL. FMCT. Well, it hasn't changed it. No, not at all. In the July 18th statement between President Bush and President Singh, the Indians indicated that they support and they will work with us to support an FMCT treaty. Of course, they have expressed—to be candid here, they have expressed the position that it should have a verification provision in it. The point is that they have already committed to work with us in terms of moving that FMCT treaty.

Mr. SHAYS. Let me just interject myself, though, to ask how has the United States' efforts to reach out to India impacted our interaction with our allies? Have they been indifferent, critical, critical but positive? I mean, how would you define its impact?

Mr. SEMMEL. I think, again, to be candid, you have a scattergram of responses on that. A number of the countries, obviously, the French, the British, and others, are very pleased with this, Russians, as well, the FMCT. And there were others who were raising serious questions. Those same countries are very supportive right now of the proposed U.S.-India civil nuclear cooperation initiative, if you want to call it that. There are a number of countries that have raised serious questions and continue to raise serious questions. We will negotiate and try to respond to those in the various fora that are available to it, particularly in the Nuclear Suppliers Group and something called the Consultative Group of the Nuclear Suppliers Group, where a lot of these issues are being hammered out, putting aside those issues are being hammered out in the Congress, as well, but on a different level.

So it depends who you talk to on this. I think a number of countries have expressed skepticism. I think at the end of the day, when we get to the critical point in the Nuclear Suppliers Group, which requires a unanimous decision as to whether or not India will be treated as an exception that would allow it to receive nuclear fuel and certain technologies, I think we will eventually get consensus on this and countries will be satisfied with the dynamics that have taken place.

Mr. SHAYS. Let me just ask a quick question. It might take forever to answer, but I would like to know, was there a huge debate in our own administration as to reaching out to India? And then, in the end, what was the pivotal issue that said we need to do this?

Mr. SEMMEL. Well, yes, of course there was a debate. This is a fundamental decision.

Mr. SHAYS. Right.

Mr. SEMMEL. This is a significant decision in terms of our foreign policy.

Mr. SHAYS. Right.

Mr. SEMMEL. As well as our economic policy, and others. It depends who you talk to, what the critical turning points may have been, but at the end of the day our relationship with India—I think when President Bush came into office in 2001 he said he wanted to try to have an impact on our relationship with India. India has a booming economy. India is the world's most populous democracy, will some day in the next 15 or 20 years or so be the most populated country in the world. Our relationship with India over the past years has been correct but not necessarily warm. So in order to improve upon that relationship, as the relationship between countries in Asia and South Asia have begun to change, it is important for us to establish a better strategic relationship with a country that is emerging as a very significant player, not just in the region but in the world.

Mr. SHAYS. Thank you. Do you have any questions you would like to ask?

Mr. VAN HOLLEN. Thank you, Mr. Chairman. Again, let me thank all the witnesses for their testimony.

I have a question with respect to where we are and where we are going. As we know, the North Koreans have essentially, at least for now, walked away from the six-party talks. They just stated again today that they didn't have any intention of coming back in the near term. They say that they have nuclear weapons. They tested a missile not too long ago. It wasn't that successful, but they tested it. As you have all testified, or some of you testified, they decided to withdraw from the Non-Proliferation Treaty.

Where are we going? I mean, where are we going with respect to North Korea? I mean, they continue to crank out the materials necessary to make nuclear weapons. I mean, isn't this a huge failure in our nonproliferation policy? And what are we going to do to fix it?

Mr. SEMMEL. I need to say it is difficult. Those who have negotiated with the North Koreans tell me that they are among the most difficult negotiators that they have ever encountered. I think the important thing is we would like to sit down. We would like the resumption of the six-party talks as soon as possible. We made that point very clear to the North Koreans, as well as to the other members of the six-party talks. The North Koreans will sit down and talk and resume the six-party talks when they are ready. The question is how do you get them to be ready. It is hard to be able to discern what their real motivations are.

They say right now that they are not ready to resume those talks that were suspended in September a year ago, a year ago actually this month, because of certain hostile behavior, I think is the way they phrase it, by the United States, and this hostile behavior is, as they point out, involves the number of financial sanctions that we have placed upon them for their illicit behavior on counterfeiting and so forth. But to get the North Koreans to the table is difficult.

They say they want to have one-on-one talks. We are not ready for that at this point in time. They can talk to us any time they want, and, as you probably know, Chris Hill, when he was in the region not too long ago, sat down with his counterpart, the North

Koreans, on the margins of meetings. We said they can have one-on-one conversations in the context of the six-party talks.

But I think if the North Koreans were serious about wanting to sit down again and resume these talks, they would be doing it. But it is an intractable issue and where it will end I am not sure at this point.

Mr. DAVID. Just to add to that—and I agree with all that Andy said—we are working with the other five parties of the six parties to do what we can to get them to do what they can to pressure North Korea to make an irreversible decision to abandon their nuclear weapons ambitions and program and to irreversibly destroy it.

We are working beyond those six parties with other countries of the world. A couple of months ago we succeeded in getting a U.N. Security Council resolution that imposes requirements—the word require is in two paragraphs—requiring countries to do certain things and not to do certain things with North Korea. Just last week or last weekend, can't remember which, Australia and Japan announced that they were imposing sanctions on North Korea.

You know, we will keep the effort up. The diplomatic multinational approach that we are taking will take time.

Mr. VAN HOLLEN. Thanks. One last question on Iran, if I could.

Mr. SHAYS. You may.

Mr. VAN HOLLEN. Thank you, Mr. Chairman.

We mentioned the Strategic Cooperation Agreement with India, and, as you know, the House passed that agreement not too long ago, a number of weeks back. Shortly after that—and Mr. Semmel is probably familiar with this—as a result of being in charge of nonproliferation at the State Department—the State Department formally announced the imposition of sanctions under the Iran Nonproliferation Act of 2000 against two Indian entities for the transfer of WMD equipment and technology to Iran. If you could just provide us a little bit more information on that, what it means with respect to cooperation from the Indian government on transfers.

And finally my question is this: does Iran today continue to be dependent on getting foreign technologies to complete their nuclear program? Or, if you were to make sure that no new technologies could get into Iran that related to nuclear issues, would they have the indigenous capability now to complete a nuclear weapons program? I have heard conflicting testimony. I have heard some say that Iran continues to be dependent on some technologies that they don't have domestically in order to complete their work, and some say they have already got everything they need. So if you could just comment on both the questions, first with respect to the imposition of sanctions on the two Indian entities, and then with respect to Iran's capabilities.

Mr. SEMMEL. I think on the imposition of the two entities, I think part of your question may be motivated by the timing implicit in your question that the report came up, I think, some time after the House had voted on this. I can only tell you that, as you know, having worked on the Senate side for some time and having written many pieces of legislation for my boss then requiring reports, I can tell you that in this case putting this report together

was required reading voluminous documents, I think well in excess of 10,000, involving inter-agency cooperation between the intelligence community on this. The time that it took to put this together I think was extraordinary. It came in late. I honestly don't think it was intentional. I think it was an evolution of the way in which this report was put together.

Now, the two entities that were identified had to be identified because of existing law. I mean, the law simply said we had to take these steps. I believe one of the entities was identified not because of any kind of activity it had with Iran on the nuclear side but on the chemical side, if I recall. You may recall this better than I.

So this is something which we are obligated to do in terms of assessing through our various sources of information that these entities have been involved in activities that are subject to a determination that they have been in violation of our act.

On the other question on is Iran self-sufficient, my best guess on this is no, they are not self-sufficient at this point in time. I think if there were a complete wall around Iran they would not be able to import certain kinds of technologies or information or insights, for that matter. I think what you would have is, since I happen to feel that Iran is absolutely determined to have the nuclear weapons capability, I think they are on a glide path that we have been able to slow down and interrupt, sort of like a heat-seeking missile going off track but going in one direction, that direction being the ability to have the nuclear weapons capability.

I think if we were to put a wall around Iran that was effective—and that, by the way, is virtually impossible, given the long borders that it has—it would slow down a process. It would make the time tables that you alluded to in an earlier question protract out for a much, much longer period of time.

I don't think—my colleagues might want to comment on this—that Iran has the total indigenous capability at this point in time to be able to move from where they are now to having a nuclear weapons capability and nuclear weapons, as well.

Mr. VAN HOLLEN. Thank you, Mr. Chairman.

Mr. SHAYS. I thank the gentleman.

Is there anything that any of the four of you would like to put on the record, any question we should have asked you that we didn't think to ask you that would be important to put on the record? Frankly, sometimes that question solicits sometimes the most important part of our hearing. So is there anything we need to put on the record?

Mr. TOBEY. No, sir.

Mr. SHAYS. OK. Let me then thank you all, Mr. Tobey, Mr. Semmel, Mr. David, and Mr. Aloise. Again, Mr. David, our country is grateful for your service. The Congress respects your service, as well, and whatever you are going to be doing next week we wish you all the best.

Mr. DAVID. Thank you very much.

Mr. SHAYS. Thank you.

We are going to have a 1-minute break and we will go with our third panel.

[Recess.]

Mr. SHAYS. We will begin with the third panel: Ambassador Thomas Graham, Chairman of the Bipartisan Security Group, Global Security Institute; Mr. Baker Spring, F.M. Kirby Research Fellow for National Security Policy of The Heritage Foundation; Mr. Jonathan Granoff, president of Global Security Institute; Mr. Henry D. Sokolski, Nonproliferation Policy Education Center; and Professor Frank von Hippel, Co-Chairman, International Panel on Fissile Materials.

Gentlemen, I know it is late. I don't do the 5-minute rule as much with the third panel. If you waited the longest, I will stay here until you make your statement, but we will do the 5-minute and I will trip over another 5 minutes.

It is great to have you here. You know the questions we asked the other panels. If you care to answer that in your presentation, your full statement will be in the record as written so you have some choices here. And if there were some questions we didn't ask that you want to put on the record in your opening statement that we should have asked, we are happy to have you do that, as well.

Ambassador, thank you so very much. Thank you again for your patience, and you have the floor.

[Witnesses sworn.]

Mr. SHAYS. Note for the record that all five witnesses have responded in the affirmative.

Now, Ambassador, I can believe what you tell me.

STATEMENTS OF AMBASSADOR THOMAS GRAHAM, JR., CHAIRMAN, BIPARTISAN SECURITY GROUP, GLOBAL SECURITY INSTITUTE; BAKER SPRING, F.M. KIRBY RESEARCH FELLOW FOR NATIONAL SECURITY POLICY, THE HERITAGE FOUNDATION; JONATHAN GRANOFF, PRESIDENT, GLOBAL SECURITY INSTITUTE; HENRY D. SOKOLSKI, NONPROLIFERATION POLICY EDUCATION CENTER; AND FRANK VON HIPPEL, CO-CHAIRMAN, INTERNATIONAL PANEL ON FISSILE MATERIALS

STATEMENT OF AMBASSADOR THOMAS GRAHAM, JR.

Ambassador GRAHAM. Mr. Chairman, I have a short statement which I will read. If, in the course of the subsequent discussions, you want to revisit the issue of how easy it is to make a nuclear weapon, I had a very interesting experience in South Africa some years ago in which they explained to me what they did, and I would be happy to talk about that later if you wish.

Mr. SHAYS. I would love that. I won't count that as your time now, so we will make sure we ask.

Ambassador GRAHAM. All right.

Paul Nitze was the archetypical cold warrior and nuclear weapon strategist, yet in the last op ed that he wrote, at the age of 92, in 1999, entitled, A Danger Mostly to Ourselves, he said, "I know that the simplest and most direct answer to the problem of nuclear weapons has always been their complete elimination." Senator Sam Nunn, in an article in the Financial Times in late 2004 said our current nuclear weapon policies, which in effect continue to rely on the deteriorating Russian early warning system to continue to make correct judgments "risks an Armageddon of our own making." And former Defense Secretary William Perry said not long ago that

in his judgment there could be a greater than 50 percent chance of a nuclear detonation on U.S. soil in the next decade.

The Nuclear Non-Proliferation Treaty, the NPT, is the centerpiece of world security. President John F. Kennedy truly feared that nuclear weapons would sweep all over the world, ultimately leading to 40 or 50 nuclear weapons states in the world today. If this had happened we would live in an almost unimaginable security situation today. Every conflict would carry with it the risk of going nuclear, and it would be impossible to keep nuclear weapons out of the hands of terrorists, they would be so widespread. But this did not happen, and the principal reason that it did not was the entry into force of the NPT in 1970, combined with the extended deterrence policies of the two rival superpowers during the cold war, which now have passed into history.

However, the NPT nuclear weapon states, particularly the United States, have never really delivered on the disarmament part of the NPT's central treaty bargain, which would mean for the United States, at a minimum, ratification of the Nuclear Test Ban Treaty, revival of the nuclear weapon reduction process begun by President Reagan, and a drastic downgrading of the role of nuclear weapons in the security process.

Now, in the wake of nuclear programs in North Korea and Iran and A.Q. Kahn illegal nuclear transfers ring in Pakistan, the other side of the NPT's central bargain has begun to fall apart.

It is of paramount importance to attempt to revive the NPS as a treaty system based on law and to restore its credibility. In the context of a breakdown of world order and the war on terror, with the looming potential failure of the NPT and the ensuing likelihood of widespread nuclear proliferation that President Kennedy so rightly feared many years ago an increasing possibility, with nuclear tension a growing threat, with thousands of strategic nuclear weapons on high alert and a Russian early warning system continuing to decline in effectiveness, the urgency of such an effort simply cannot be under-stated. But if, in fact, it is indeed too late to change the course of nations with respect to the NPT in order to save the NPT, then, in the interest of the security and safety of us all, some way must be found to proceed directly to the world-wide elimination of nuclear weapons, as Paul Nitze urged over 6 years ago. Very difficult, but not impossible.

But in this the United States must lead. There is no alternative. In order to do this, the United States must return to its historic destiny of keeping the peace and prospering the development of the community of nations, democracies, free market economies, the international rule of law, international institutions, and the international security treaty system.

As the Secretary of State said last year in a speech to the American Society of International Law, when the United States respects its "international legal obligations" and supports an international system based on the rule of law, we do the work of making this world a better place, but also a safe and more secure place for America.

Thank you.

[The prepared statement of Ambassador Graham follows:]

Ambassador Thomas Graham, Jr.

Subcommittee on National Security, Emerging Threats and International Relations

Committee on Government Reform

United States House of Representatives

Washington, D.C.

September 26, 2006

Paul Nitze was the archetypical Cold Warrior and nuclear weapon strategist. As the author of NSC-68 commissioned by President Truman in 1950 he helped establish the ground rules for the Cold War and the thermonuclear confrontation. In this Report he wrote in 1950: "In the absence of effective arms control it would appear that we had no alternative but to increase our atomic armaments as rapidly as other considerations made appropriate." But in addition to being an outstanding national leader Paul Nitze was someone who could recognize change and respond to it. In the last op-ed that he wrote at the age of 92 in 1999 entitled "A Danger Mostly To Ourselves" he said.

"I know that the simplest and most direct answer to the problem of nuclear weapons has always been their complete elimination. My "walk in the woods" in 1982 with the Soviet arms negotiator Yuli Kvitsinsky at least addressed this problem on a bilateral basis. Destruction of the arms did not prove feasible then but there is no good reason why it should not be carried out now."

Senator Sam Nunn in an article in the Financial Times in December 2004 pointed to the immense danger that exists as a result of the fact that fifteen years after the end of the Cold War the United States and Russia still maintain, on fifteen minutes alert, long range strategic missiles equipped with immensely powerful nuclear warheads capable of

devastating each other's societies in thirty minutes. In 1995 Russia mistook the launch of a test rocket in Norway as a submarine launched nuclear missile aimed at Moscow and came within two minutes of ordering a retaliatory nuclear strike on the United States. Senator Nunn said in his article that our current nuclear weapon policies which in effect rely on the deteriorating Russian early warning system continuing to make correct judgments as it did during the Cold War "risks an Armageddon of our own making."

And former Defense Secretary William Perry, a scientist not given to exaggeration, said not long ago that in his judgment there could be a greater than 50 percent chance of a nuclear detonation on U.S. soil in the next decade.

The Nuclear Non Proliferation Treaty (NPT) is the centerpiece of world security. President John F. Kennedy truly feared that nuclear weapons might well sweep all over the world. In 1962 there were reports that by the late 1970s there would be 25-30 nuclear weapon states in the world with nuclear weapons integrated into their arsenals. If that had happened there would be many more such states today--in September of 2004, the Director General of the International Atomic Energy Agency (IAEA), Mohamed El Baradei, estimated that more than 40 countries now have the capability to build nuclear weapons. Under such conditions every conflict would carry with it the risk of going nuclear and it would be impossible to keep nuclear weapons out of the hands of international terrorist organizations they would be so widespread.

But such weapon proliferation did not happen and the principal reason that it did not was the negotiation of the NPT and its entry into force in 1970, buttressed by the policies of extended nuclear deterrence -- the nuclear umbrella -- followed by the United States and the Soviet Union with their Cold War Treaty Allies. Indeed since 1970, at

least until now, there has been very little nuclear weapon proliferation. In addition to the five nuclear weapon states recognized by the NPT -- the United States, Britain, France, Russia and China, three states, India, Pakistan, and Israel and perhaps North Korea have built nuclear weapon arsenals -- but India and Israel were already well along in 1970. This is far from what President Kennedy feared.

So to argue that the NPT has failed to prevent the spread of nuclear weapons is to simply deny reality. Yet, for example, the Washington Post said in an editorial several months ago, "the Nuclear Non-Proliferation Treaty is a limited asset. It has not stopped a string of countries from going nuclear and is not worth forgoing major prizes such as an Indian alliance in order to preserve it." To say that this is a misunderstanding of reality is an understatement. Until the entry into force of the NPT in 1970, the acquisition of nuclear weapons by a state was an act of national pride. Sweden had a program, Switzerland twice voted to have one, "Vive La France" read the headlines in Paris after the first French nuclear tests in 1960. If the NPT had not happened likely today we would live in a world where nuclear weapons exist in many national arsenals. States such as Syria, Iran, Cuba, Nigeria and many others would have nuclear weapons integrated into their national arsenals and Al Qaeda would probably have them too. The facts to date are far, far from that. That is why this Treaty, the NPT, truly has been the centerpiece of international security.

But the success of the NPT was no accident. It was rooted in a carefully crafted central bargain. In exchange for a commitment from the nonnuclear weapon states (today more than 180 nations, most of the world) not to acquire nuclear weapons and to submit to international safeguards to verify compliance with this commitment, the NPT nuclear

weapon states pledged unfettered access to peaceful nuclear technologies and undertook to engage in nuclear disarmament negotiations aimed at the ultimate elimination of their nuclear arsenals. It is this basic bargain that for the last three decades has formed the central underpinnings of the international nonproliferation regime.

However, one of the principal problems with all this has been that the NPT nuclear weapon states have never really delivered on the disarmament part of this bargain and the United States in recent years appears to have largely abandoned it. The essence of the disarmament commitment was that pending the eventual elimination of nuclear weapon arsenals called for in Article VI of the Treaty, the nuclear weapon states would agree to important interim steps including a treaty prohibiting all nuclear weapon tests, drastic reduction of their nuclear arsenals and a significant diminishment of the role of nuclear weapons in their security policies. None of this has been accomplished over 35 years later. As Mohammed El Baredi has said “we must abandon the unworkable notion that it is morally reprehensible for some countries to pursue weapons of mass destruction and acceptable for others to rely on them for security. . . if the world does not change course, we risk self destruction.”

The United States, unlike the United Kingdom, France and Russia, has not delivered on its NPT obligation to support a comprehensive treaty banning all nuclear weapon tests -- as a result of the 1999 vote of the U.S. Senate rejecting the Comprehensive Test Ban Treaty (CTBT). In addition, the United States no longer pursues Treaty commitments to continue reductions in nuclear weapons as it is obligated to do under the NPT. As a result of the abandonment of the START process initiated by

President Reagan, there have been no negotiated reductions in nuclear weapon stockpiles since 1994 -- twelve years.

But what about the obligation to reduce the role of nuclear weapons in national security policies. In 1995, the United States, the United Kingdom, France and Russia made national statements in connection with a United Nations Security Council Resolution that, in effect, they would never use nuclear weapons against NPT non-nuclear weapon state parties, in other words a no-first-use, indeed a no use-commitment, for NPT non-nuclear weapon states. Such a commitment is also referred to as a negative security assurance, a long-sought goal of NPT non-nuclear weapon states. These commitments were made as part of the price to achieve the permanent extension of the NPT at the conference which followed soon thereafter. China, the other NPT nuclear weapon state, did not join in these statements as it has long had a general no-first-use-of-nuclear-weapons policy. The World Court, the next year found, in effect, these 1995 statements to be legally binding.

Throughout the Cold War, NATO doctrine held open the possibility of employing tactical nuclear weapons to hold off a massive Warsaw Pact conventional assault. Even with U.S. forces present in Europe in significant numbers, NATO forces were greatly inferior in size to the Warsaw Pact forces arrayed on the other side; the disparity in battle tanks, for example, was three to one. To redress this balance the United States deployed a large number of tactical nuclear weapons in Europe which undoubtedly helped to keep the peace and alleviate Soviet pressure on Western Europe. However, in the post-Cold War world, it is NATO that now has the conventional force preponderance in Europe -- by a two-to-one margin over the East. Thus, with the end of the Cold War the rationale

for the NATO doctrine of the possible first use of nuclear weapons has disappeared into history.

Likewise, since the beginning of the nuclear age it has been U.S. policy to reserve the right for the United States to use nuclear weapons in a conflict, against any adversary. This has been British and French policy as well and recently Russia changed its stated policy to preserve the first use of nuclear weapons as well. Even with the now-overwhelming world dominance of U.S. conventional forces, the United States continues to retain a first-use policy. Canada and Germany lobbied hard for a change in NATO doctrine to a no first-use policy on the occasion of the NATO Alliance 50th anniversary in 1999 to no avail against U.S. opposition.

Some have argued that if the U.S. were to change its policy to no-first-use (and NATO change its policy as well), then close U.S. allies, Germany and Japan, would lose confidence in U.S. extended deterrence (the nuclear umbrella) and seek nuclear weapons of their own. But here is Germany vigorously arguing for such a policy change in NATO and there is no indication that Japan's view is different, indeed the conclusion of the Tokyo Forum study mandated by the Japanese national legislature, the Diet, a few years ago was to the effect that Japan should support a no first use policy. The United States maintains this policy even though it has no military value and the United States has formally pledged under the NPT in 1995, as said above, in effect never to use nuclear weapons against NPT nonnuclear weapon states. No first-use is a particularly significant issue to focus on because it could be implemented immediately in that it is simply a declaratory policy. Yet an explicit, clearly enunciated policy of not introducing nuclear weapons into future conflicts would go a long way towards restoring the perceived good

faith of the United States concerning its NPT nuclear arms control and disarmament commitments as it would reinforce the defensive posture of U.S. nuclear forces and make clear that the sole purpose of the nuclear arsenal is to deter the use of nuclear weapons by others.

And now the other side of the NPT bargain has begun to fall apart. India and Pakistan eroded the NPT from the outside by each conducting a series of nuclear weapon tests in 1998 and declaring themselves to be nuclear weapon states. India, Pakistan and Israel maintain sizable unregulated nuclear weapon arsenals outside the NPT. The U.S. - India proposed nuclear cooperation Agreement, which among other things implicitly accepts India as a nuclear weapon state contrary to the NPT, will have a most negative effect. This proposed Agreement will break the fragile balance of the NPT central bargain by permitting nuclear cooperation with a NPT non--recognized nuclear weapon state without requiring the nonproliferation undertakings that apply to nearly all states. Part of the foundation of the central bargain is nuclear cooperation in exchange for non-proliferation which of course conflicts with the proposed Agreement with India.

North Korea withdrew from the NPT in 2003 and may have built up to eight or nine nuclear weapons. The DPRK has now agreed in principle to return to the NPT and to negotiate an end to its nuclear weapon program, but there has been no tangible progress in this direction other than rhetoric. And even if this should some day happen, under current international arrangements can we ever be certain that North Korea has in fact declared and eliminated whatever nuclear weapons it may have? The A. Q. Khan secret illegal nuclear weapon technology transferring ring based in Pakistan has been exposed but who can be sure that we have seen more than the tip of the iceberg? Iran is

suspected of having a nuclear weapon program and admitted in late 2003 that contrary to its IAEA safeguards agreement it failed to report its acquisition of uranium enrichment technology. Negotiations have not resolved this issue, although the resumption of negotiations between the European Union and Iran, with the United States participating, is a hopeful sign. Nevertheless U.S. pursuit of UN sanctions against Iran remain a possibility.

But would it be wise to take Iran to the Security Council over this issue at this time? Last fall a newspaper close to Iran's Supreme Leader, Ayatollah Khamenei, in a front page editorial declared that if taken to the Security Council a first step for Iran would be to withdraw from the NPT. Not long ago the President of Iran implied that Iran might withdraw from the NPT, although the Foreign Ministry the next day stated that Iran remains committed to the Treaty. In general, intelligence estimates indicate that initial Iranian capability to build a bomb is at least five to ten years off. It appears that to date Iran has made little progress in this direction. Indeed some experts have said that in view of Iran's apparent determination to acquire a fully developed and complete nuclear fuel-cycle, as opposed to pursuing a crash course to build a bomb, initial nuclear weapon capability might not be achieved for as long as fifteen years.

The nuclear program is very popular in Iran. Some countries seem to believe that ultimately the only way that they can gain respect in this world, as President Lula of Brazil declared during his first election campaign a few years ago, is to acquire nuclear weapons — or at least being seen as able quickly to do so. During the Cold War, nuclear weapons distinguished Great Powers from others countries. The permanent members of the Security Council are the five NPT recognized nuclear weapon states. Forty years ago

Great Britain and France both asserted that status was the real reason that they were building nuclear weapons.

This high political value of nuclear weapons has not changed since the Cold War. India asserted in 1998 that it was now a big country, it had nuclear weapons. The world significantly lost interest in Ukraine once it gave up the nuclear weapons left on its territory after the collapse of the Soviet Union. The political value of nuclear weapons probably will remain high and in the end cause the NPT to fail, unless of course over time it can be significantly lessened. The only way that this can happen is for nuclear weapons to be delegitimized. This is what was supposed to happen pursuant to the central bargain of the NPT if it had been observed.

So how can NPT be saved? This issue should be addressed in two parts.

First, in order to restore the political legitimacy of the NPT central bargain, the NPT nuclear weapon states, principally the United States, must deliver on the disarmament part of the central bargain. Commitments were made on these disarmament issues in 1995 at the NPT Review and Extension Conference which were the political price for the permanent extension of the treaty and these commitments were reaffirmed by all the NPT nuclear weapon states, indeed all NPT parties, at the 2000 Review Conference. At a minimum for the United States this would mean, ratification of the CTBT, the Test Ban Treaty, accompanied by vigorous efforts with other holdouts such as China, India and Pakistan to bring the CTBT into force; the resumption of the nuclear weapon reduction process (the Strategic Arms Reduction Talks or START) between the United States and Russia begun by President Reagan which has been in abeyance for five years. And, consistent with 1995 NPT undertakings, a drastic reduction of the role that

nuclear weapons play in United States security policy by the adoption of a no-first-use policy. Without steps such as these the viability of the NPT cannot be restored and sustained.

A policy of selective application of NPT obligations is not sustainable. To say that the NPT nuclear weapon states do not have to fulfill their nuclear disarmament obligations which are the "quid" for the "quo" for most of the world agreeing never to acquire nuclear weapons; to say that India which has never been recognized by the NPT as a valid nuclear weapon state, which has never accepted the legitimacy of the NPT and has a large stockpile of nuclear weapons has a right to the nuclear fuel cycle and international nuclear trade while Iran which is a NPT party and does not at this time have nuclear weapons, does not have such a right, will not work over the long-term. A successful NPT system must be based on law, not whether we like or dislike a particular nation. In the 1970s arguments were made that the United States should engage in selective proliferation not non-proliferation. We should make sure our friends have them and that our adversaries do not. The first two "friends" that were generally designated as countries that should get the weapons were Yugoslavia and Iran.

Second, steps need to be taken to shore up the other side of the central bargain, the non-proliferation side as opposed to the disarmament side. The inexorable proliferation of the nuclear fuel cycle should be brought to an end in some politically acceptable way. Here again we have a selective approach; for example, Brazil can have it, Iran can not. Perhaps a way to successfully address this question would be to adopt the proposal of Director-General ElBaradei to establish a multilaterally owned nuclear fuel cycle entity on which all states that currently do not have the nuclear fuel cycle can

rely. The Nuclear Supplier Group process in controlling nuclear exports should be strengthened. The Indian Agreement will set a bad precedent in this regard. The Proliferation Security Initiative has an important role to play and the full implementation of Cooperative Threat Reduction programs in Russia is essential if we hope to keep nuclear weapons from international terrorist organizations. And vigorous efforts need to be pursued to bring Iran, and North Korea as well, back into full compliance with the NPT. This will require lengthy and serious negotiations.

In view of all this it may not now be possible to change the course of nations and pursue the policies that are necessary to strengthen and support the NPT and the international nonproliferation regime. But as Paul Nitze indicated seven years ago, in the world we live in today nuclear weapons are a threat even to their possessors. In order to avoid the nightmare world of President Kennedy, either the required steps to strengthen and restore the NPT must be adopted or a way must be found, admittedly difficult but not impossible, to proceed directly to the elimination of nuclear weapons. And for either course to be effectively pursued it must be done on a multilateral basis involving the entire international community. In the context of a breakdown of world order and the War on Terror, with the threat of widespread nuclear proliferation that President Kennedy so rightly feared many years ago an increasing possibility, with nuclear tension a growing threat with thousands of strategic nuclear weapons still on high alert and a Russian early warning system continuing to decline in effectiveness, the NPT system simply must be respected and restored in effectiveness or in the interest of the security and safety of us all, nuclear weapons must be eliminated throughout the world.

How could nuclear weapons actually be eliminated? A possible course of action could be for the President of the United States to call for an extraordinary session of the United Nations General Assembly and ask to address the Assembly. In his speech the President could call for the world-wide elimination of nuclear weapons (as well as all other weapons of mass destruction) and request that the Security Council be charged to carry out this task. The Security Council could then call for the negotiation of a treaty to eliminate nuclear weapons. This would require world-wide intrusive on-site inspection and probably security guarantees to a number of states such as Israel, Iran, Pakistan and North Korea on the edge of conflicts and where nuclear programs are or may be present. North Korea would return to the NPT as a nonnuclear weapon state. There would need to be an agreement by all states to apply economic and, if necessary, military pressure to any state that did not comply with this program or that subsequently violated the negotiated arrangements. In an interim stage the five NPT nuclear weapon states and the three other longtime holdouts from the NPT would be required to eliminate almost all of their arsenals down to very low levels. A second and later stage would require elimination of weapons but these eight states would be allowed to keep a relatively limited amount of nuclear explosive material (highly enriched uranium or plutonium) which could be converted into a small number of weapons as a hedge. This could amount to roughly enough material for five weapons each for India, Pakistan, and Israel, fifteen weapons each for Britain, France, and China and thirty weapons each for the United States and Russia. The material would be maintained under very high levels of national security protection at designated depositories and also be under international safeguards implemented by IAEA inspectors. Under various programs all other nuclear

explosive material would be eliminated throughout the world. Nuclear power production would be reconfigured so as to make no more plutonium by the use of non-proliferative fuels such as the thorium fuel design and eventually advanced reactors. The plutonium in existing spent nuclear fuel around the world would have to be eliminated as well. Such an arrangement would take a long time to negotiate and even longer to implement but we must try for the hour is late. A final stage, years in the future, could be the verifiable elimination of the retained fissile material, once the issue of "missing" fissile material, a feature of the nuclear weapon inventories in all of the nuclear weapon possessing states, has been effectively addressed.

Some might say that all this is unrealistic, how could we ever hope that the United States government would even contemplate the policies associated with either course? I would say in response that we must remember that it is only governments that can control and eliminate nuclear weapons, not civil society. So we must press for and hope for the best and remember that nothing good is ever impossible. Who would have thought that the zero missile option proposed by President Reagan in 1981 would ever happen? Who would have thought the Cold War would end in the foreseeable future? Who would have thought that the Soviet Union would cease to exist? But all of these things did happen.

But in order to achieve the effective control and eventual elimination of nuclear weapons and to establish a peaceful and secure world community in the 21st Century, the United States must lead; there is no alternative. But for this to happen the United States must be believed and trusted. On September 12, 2001, the United States had the trust and support of the entire world. Now, in the wake of the rejection of international treaty arrangements such as the Comprehensive Nuclear Test Ban Treaty, the Ottawa

Convention on land mines, the International Criminal Court, the Kyoto Protocol on global warming, and others; an invasion of Iraq opposed by the world community; and opposition by some to the rules of international humanitarian law and the Geneva Protocols on the treatment of prisoners of war; that support and trust is gone and the United States is reviled and feared in many quarters of the world. Senator John McCain said a few months ago that "America's position in the world is at an all-time low." How can we regain the trust of the world community? How can we return to our historic destiny of keeping the peace and fostering the development of the community of nations, democracies, free market economies, the international rule of law, international institutions, and treaty arrangements?

Among other things we should:

First, recognize that in the wake of the Cold War the world has fundamentally changed, the nation state system that has dominated international life for the last 350 years is rapidly deteriorating. Perhaps some 50 to 70 nations around the world are inexorably slipping into the category of failed states. We cannot go it alone. Since the end of the Cold War there has been roughly one major nation building intervention every two years. Poverty, disease, cultural misunderstandings and machine-gun societies around the world are central national security threats; these are the principal causes of international terrorism and the primary weapons in the battle against terror and declining world order are economic, political, social, cultural and diplomatic, and only rarely military. Reconstruction in failed states is one thing, it is relatively well understood but in many cases development, of necessity involving institution building, is essential to return failed states to a level where they can function. But to quote the well-known

historian Francis Fukayama “any honest appraisal of where the ‘state of the art’ lies in development today would have to conclude that although institutions may be important we know relatively little about how to create them.” But one thing that we do know is that, as expressed by Dr. Fukayama, “Coalitions, in the form of support from a wide range of other countries and international organizations . . . are important for a number of reasons.”

And second, for over fifty years the United States pursued a world order built on rules and international treaties that permitted the expansion of democracy and the enlargement of international security. Last year in a speech before the American Society of International Law, the Secretary of State said that when the United States respects its “international legal obligations and supports an international system based on the rule of law, we do the work of making this world a better place, but also a safe and more secure place for America.” We should take such steps as ratifying the Comprehensive Nuclear Test Ban Treaty, joining the Ottawa Land Mine Convention, becoming a part of the International Criminal Court and establishing ourselves again as strong advocates of the international rule of law.

In this way we can regain our historic role and we can and we will effectively lead the world community to a safe, secure, stable and just Twenty-first Century.