

# AVERTING NUCLEAR TERRORISM

---

---

HEARING  
BEFORE THE  
SUBCOMMITTEE ON  
INTERNATIONAL TERRORISM AND  
NONPROLIFERATION  
OF THE  
COMMITTEE ON  
INTERNATIONAL RELATIONS  
HOUSE OF REPRESENTATIVES  
ONE HUNDRED NINTH CONGRESS

FIRST SESSION

APRIL 14, 2005

**Serial No. 109-40**

Printed for the use of the Committee on International Relations



Available via the World Wide Web: [http://www.house.gov/international\\_relations](http://www.house.gov/international_relations)

U.S. GOVERNMENT PRINTING OFFICE

20-649PDF

WASHINGTON : 2005

---

For sale by the Superintendent of Documents, U.S. Government Printing Office  
Internet: [bookstore.gpo.gov](http://bookstore.gpo.gov) Phone: toll free (866) 512-1800; DC area (202) 512-1800  
Fax: (202) 512-2250 Mail: Stop SSOP, Washington, DC 20402-0001

COMMITTEE ON INTERNATIONAL RELATIONS

HENRY J. HYDE, Illinois, *Chairman*

JAMES A. LEACH, Iowa	TOM LANTOS, California
CHRISTOPHER H. SMITH, New Jersey, <i>Vice Chairman</i>	HOWARD L. BERMAN, California
DAN BURTON, Indiana	GARY L. ACKERMAN, New York
ELTON GALLEGLEY, California	ENI F.H. FALEOMAVAEGA, American Samoa
ILEANA ROS-LEHTINEN, Florida	DONALD M. PAYNE, New Jersey
DANA ROHRABACHER, California	ROBERT MENENDEZ, New Jersey
EDWARD R. ROYCE, California	SHERROD BROWN, Ohio
PETER T. KING, New York	BRAD SHERMAN, California
STEVE CHABOT, Ohio	ROBERT WEXLER, Florida
THOMAS G. TANCREDO, Colorado	ELIOT L. ENGEL, New York
RON PAUL, Texas	WILLIAM D. DELAHUNT, Massachusetts
DARRELL ISSA, California	GREGORY W. MEEKS, New York
JEFF FLAKE, Arizona	BARBARA LEE, California
JO ANN DAVIS, Virginia	JOSEPH CROWLEY, New York
MARK GREEN, Wisconsin	EARL BLUMENAUER, Oregon
JERRY WELLER, Illinois	SHELLEY BERKLEY, Nevada
MIKE PENCE, Indiana	GRACE F. NAPOLITANO, California
THADDEUS G. McCOTTER, Michigan	ADAM B. SCHIFF, California
KATHERINE HARRIS, Florida	DIANE E. WATSON, California
JOE WILSON, South Carolina	ADAM SMITH, Washington
JOHN BOOZMAN, Arkansas	BETTY MCCOLLUM, Minnesota
J. GRESHAM BARRETT, South Carolina	BEN CHANDLER, Kentucky
CONNIE MACK, Florida	DENNIS A. CARDOZA, California
JEFF FORTENBERRY, Nebraska	
MICHAEL McCAUL, Texas	
TED POE, Texas	

THOMAS E. MOONEY, SR., *Staff Director/General Counsel*

ROBERT R. KING, *Democratic Staff Director*

---

SUBCOMMITTEE ON INTERNATIONAL TERRORISM AND NONPROLIFERATION

EDWARD R. ROYCE, California, *Chairman*

PETER T. KING, New York	BRAD SHERMAN, California
THOMAS G. TANCREDO, Colorado	ROBERT MENENDEZ, New Jersey
DARRELL ISSA, California, <i>Vice Chairman</i>	ROBERT WEXLER, Florida
MICHAEL McCAUL, Texas	JOSEPH CROWLEY, New York
TED POE, Texas	BETTY MCCOLLUM, Minnesota
JERRY WELLER, Illinois	DENNIS A. CARDOZA, California
J. GRESHAM BARRETT, South Carolina	DIANE E. WATSON, California

TOM SHEEHY, *Subcommittee Staff Director*

DON MACDONALD, *Democratic Professional Staff Member*

MALIK M. CHAKA, *Professional Staff Member*

GREG GALVIN, *Staff Associate*

# CONTENTS

---

	Page
WITNESSES	
The Honorable R. James Woolsey, Vice President, Booz Allen Hamilton (former Director of Central Intelligence) .....	5
Ariel Cohen, Ph.D., Research Fellow, The Heritage Foundation .....	8
Ms. Laura S.H. Holgate, Vice President for Russia/New Independent States Programs, Nuclear Threat Initiative .....	14
Mr. Michael A. Levi, Nonresident Science Fellow, The Brookings Institute .....	18
LETTERS, STATEMENTS, ETC., SUBMITTED FOR THE HEARING	
The Honorable Edward R. Royce, a Representative in Congress from the State of California, and Chairman, Subcommittee on International Ter- rorism and Nonproliferation: Prepared statement .....	2
Ariel Cohen, Ph.D.: Prepared statement .....	10
Ms. Laura S.H. Holgate: Prepared statement .....	16
Mr. Michael A. Levi: Prepared statement .....	21



## AVERTING NUCLEAR TERRORISM

---

THURSDAY, APRIL 14, 2005

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON INTERNATIONAL TERRORISM  
AND NONPROLIFERATION,  
COMMITTEE ON INTERNATIONAL RELATIONS,  
*Washington, DC.*

The Subcommittee met, pursuant to call, at 2:08 p.m. in room 2172, Rayburn House Office Building, Hon. Edward R. Royce (Chairman of the Subcommittee) presiding.

Mr. ROYCE. The Subcommittee on International Terrorism and Nonproliferation will come to order. A terrorist nuclear attack on U.S. soil would take a devastating toll on lives and property, with unimaginable consequences for the American economy and our way of life.

Terrorist groups, primarily al-Qaeda, are pursuing nuclear capabilities. The 9/11 Commission Report stated that al-Qaeda's efforts to acquire nuclear weapons reach back at least 10 years. A spokesman of Osama bin Laden has said that al-Qaeda aspires to kill four million Americans. Bin Laden has sought and received from a radical Saudi cleric a fatwa sanctioning a nuclear strike against United States civilians.

It is hard to gauge the likelihood of terrorists accessing a nuclear weapon and delivering it against the United States. Some believe that building a crude nuclear weapon would be well within the technological reach of terrorists once they secured the necessary amount of fissile material. Others believe that it cannot be done without state support. We do not have the luxury of assuming a high hurdle. Last year, a Pentagon group reported:

"Nuclear knowledge, materials, and weapons are oozing out of control. Nuclear weapons technology and knowledge continue to spread. Nuclear explosives themselves, and nuclear materials, are spreading into hands hostile to the United States."

Russia, with vast nuclear stockpiles and growing terrorist activity, has been a country of considerable concern. So are Iran and North Korea, two sponsors of terrorism with advanced nuclear capabilities.

The IAEA has reported 18 smuggling incidents involving highly enriched uranium since 1993. The A.Q. Khan network is another wake-up call for us. Before this sophisticated network was exposed, key nuclear technology was transferred from Pakistan to Libya, Iran, and elsewhere. Anyone with money, it appears, could have acquired nuclear technology. Once secured, terrorists may try to

smuggle a nuclear weapon into the United States using the routes by which large quantities of contraband is routinely smuggled into our country. I am particularly concerned about our porous borders, where we need to improve security quickly. We should heed the 9-11 Commission, and the Senate should take up the REAL ID Act passed from the House and to the Senate that contains those 9-11 Commission recommendations.

Throughout the Cold War, containing the Soviet Union was the central principle of United States foreign policy. Fending off Russian expansionism guided our alliance, military and economic policies. Those who believe that the world is at a turning point today, with terrorist groups seeking to acquire nuclear weapons material, ask whether nuclear terrorism is near the focus that the Soviet threat was. I know the answer.

The mortal threat posed by nuclear terrorists has yet to ignite the response mounted by the West during the Cold War. Today we will hear about research efforts aimed at better identifying an exploded nuclear weapon's origin through forensic examination. This information would be critical in directing our reaction to a nuclear attack. More hopefully, it could help prevent an attack from ever happening. Potential state sponsors of nuclear terrorism might pause before sharing such material and technology with terrorists if they knew this aid would be traced back to their capital. Not all would-be nuclear terrorists hold religious beliefs that welcome death. Some might be less inclined to attack U.S. targets if they knew that they would be held accountable, as were the Taliban, many of whom were killed in response to the 9/11 attacks.

This hearing will focus on the challenges of averting nuclear terrorism. Future planned hearings will look in detail at specific U.S. policies and programs designed to avoid the ultimate terrorist attack, such as the Proliferation Security Initiative, which has helped reduce this threat.

[The prepared statement of Mr. Royce follows:]

PREPARED STATEMENT OF THE HONORABLE EDWARD R. ROYCE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA, AND CHAIRMAN, SUBCOMMITTEE ON INTERNATIONAL TERRORISM AND NONPROLIFERATION

WASHINGTON, D.C.—Today, the House Subcommittee on International Terrorism and Nonproliferation (ITNP) held a hearing on the challenges of averting nuclear terrorism. ITNP Chairman U.S. Rep. Ed Royce (R-CA-40) issued the following opening statement:

“A terrorist nuclear attack on U.S. soil would likely take a devastating toll in lives and property, with unimaginable consequences for the American economy and way of life. Terrorists groups, primarily al Qaeda, but maybe others, are pursuing nuclear capabilities. The 9/11 Commission report stated that al Qaeda efforts to acquire nuclear weapons reach back at least ten years. A spokesman of Osama bin Laden has said that al Qaeda aspires to kill four million Americans. Bin Laden has sought and received from a radical Saudi cleric a *fatwa* sanctioning a nuclear strike against U.S. civilians.

“It is hard to gauge the likelihood of terrorists accessing a nuclear weapon and delivering it against the United States. Some believe that building a crude nuclear weapon would be well within the technological reach of terrorists once they secured the necessary amount of fissile material. We do not have the luxury of assuming a high hurdle. Last year, a Pentagon group reported, ‘Nuclear knowledge, materials, and weapons are oozing out of control. Nuclear weapons technology and knowledge continue to spread. Nuclear explosives themselves, and nuclear materials, are spreading into hands hostile or potentially hostile to the United States.’ Russia, with vast nuclear stockpiles and growing terrorist activity, has been a country of

considerable concern. So are Iran and North Korea, two sponsors of terrorism with advanced nuclear capabilities.

“The A.Q. Khan network is another wake-up call. Before this sophisticated network was exposed, key nuclear technology was transferred from Pakistan to Libya, Iran and elsewhere. Anyone with money, it appears, could have acquired nuclear technology. Once secured, terrorists may try to smuggle a nuclear weapon into the U.S., using the routes by which large quantities of contraband is routinely smuggled into our country. I am particularly concerned about our porous borders, where we need to improve security quickly. Passage of the REAL ID Act by the Senate is critical.

“Throughout the Cold War, containing the Soviet Union was the central principle of U.S. foreign policy. Fending off Russian expansionism guided our alliance, military, and economic policies. Those who believe that the world is at a turning point today, with terrorist groups seeking to acquire nuclear weapons material, posing a mortal threat, ask whether nuclear terrorism is near the focus that the Soviet threat was. I know that answer.

“Today we will hear about research efforts aimed at better identifying an exploded nuclear weapon’s origin through forensic examination. This information would be critical in directing our reaction to a nuclear attack. More hopefully, it could help prevent an attack from ever happening. Potential state sponsors of nuclear terrorism might pause before sharing nuclear material and technology with terrorists if they knew this aid would be traced back to their capital. Not all would-be nuclear terrorists hold religious or apocalyptic beliefs that welcome death. Some might be less inclined to attack U.S. targets if they knew that they would be held accountable, as were the Taliban, many who were killed in response to the 9/11 attacks.

“This hearing will focus on the challenges of averting nuclear terrorism. Future planned hearings will look in detail at specific U.S. policies and programs designed to avoid the ultimate terrorist attack, such as the Proliferation Security Initiative, which has helped reduce this threat.”

Mr. ROYCE. I will now go to Mr. Sherman, the Ranking Member.

Mr. SHERMAN. Thank you, Mr. Royce, Chairman Royce. I think it is important as we focus on this nuclear threat to divide the threat between thermal nuclear weapons, with a thermal nuclear explosion on the one hand, and other—and I think distinctly lesser—weapons of mass destruction, including biological, chemical, and the so-called dirty bomb.

We need to do—and this is outside the purview of even our Full Committee—some civil defense work, just as we did, and some explaining to the American people. In the fifties through the seventies, we did civil defense with regard to the Soviet threat, and that might have been inappropriate because if the Soviet Union had hit us with one bomb, they might have hit us with 500.

Instead, now if we are hit with one thermal nuclear device it would be a tragedy, but it would be far less than what we prepared for in the fifties, sixties, and seventies. What is even more to the point is a dirty bomb has to be explained to the American people.

Otherwise, terrorists will achieve exactly what their name implies. Terrorism is a creation of terror more than a creation of destruction, and a dirty bomb will create more terror than destruction, especially if we fail to educate the American people on the fact that it could occur, and here is how the community ought to respond.

The rest of my remarks will focus on what I think should be the real focus of this hearing, and that is nuclear terrorism involving a thermal nuclear device and a nuclear explosion.

I, of course, want to thank the Chairman for holding these hearings. As I explained, we need to focus separately on thermal nuclear explosions from the other threats. Terrorists are seeking to

obtain these weapons, and we have done a remarkably poor job in evaluating the nuclear threat posed by our adversaries.

We were surprised that Libya had so much of a nuclear program. We were more than flabbergasted when Iraq did not have a nuclear program. It seems obvious that Iran and North Korea have nuclear programs, but there may be some surprises there as well.

I think that our intelligence agencies have missed the boat in not hiring immigrants to this country whose native languages and understanding of culture would prepare them to infiltrate these organizations.

Instead, there are bureaucracies that have the same hiring criteria as when the Soviet Union was the main enemy, and we want to hire somebody who has studied Arabic at a university, and we are unwilling to interview somebody who grew up speaking Arabic.

We especially have the opportunity to turn to some of the dissidents and religious minorities in this country, whether they be Jews or Christians, who are highly unlikely to profess the ideology in their hearts of Islamic terrorism and instead we are looking for, I guess, people like myself, people who got nice degrees at American colleges and grew up speaking English.

“So don’t hire me, hire my foreign-born friends,” would be the first message to our intelligence community. And of course, that means hiring people unlike themselves, and all too often bureaucracy seems to be focused on bureaucratic objectives rather than on the real objective, which is defending our country.

Our first objective has to be no new nuclear states. Here my colleagues have heard me talk perhaps too often. To ballyhoo the idea that maybe we will get Six-Party Talks versus Two-Party Talks with North Korea is basically to announce that the Administration is willing to do nothing except play it out a little bit, show that they are doing something worthy of discussion on page 20 of the newspaper, and hope that people will ignore the issue and believe that the defanging of Saddam Hussein meant that we made the United States completely safe.

The fact is is that we have to be willing to force China to threaten to cut off its subsidies to North Korea, and we also have to be willing to offer the North Koreans a non-aggression pact, and a whole lot more from the terrorist side, who are not willing to do anything in the Administration, that is locked into battle amongst itself and is unwilling to do anything except talk about Six-Party Talks, which is just remarkable.

As for Iran, we have been unwilling to apply sticks. We offer carrots, and they are spurned, and so we throw more carrots. We outright let imports come in from Iran. She was attacked by the Iranian foreign minister for doing so.

So we wait for a few years and then we let Iran begin discussions to come into the WTO in return for nothing. So we have an Administration that is, at most, trying to conceal the fact that it is doing nothing in effect to prevent these two countries from developing nuclear weapons.

We have got to secure the world’s existing weapons stockpiles and fissile material. Obviously we need to do more to deal with this. We have not achieved the objectives, and we have not appropriated the money.



But it is not just Russian fissile material. There are 130 research reactors worldwide, many of which, or most of which, are lightly guarded. So I want to commend my colleague, Adam Schiff, for H.R. 665, of which I am a co-sponsor, and urge my colleagues to look at that bill. And I yield back to the Chair.

Mr. ROYCE. Thank you, Mr. Sherman. We have a very distinguished panel with us today. Mr. James Woolsey is a Vice President of Booz Allen Hamilton's Global Resilience practice. Between stints in the private sector, Mr. Woolsey has spent many years in government service, holding Presidential appointments in two Republican and two Democratic Administrations.

Mr. Woolsey has served as Ambassador to the Negotiation on Conventional Armed Forces in Europe; Delegate-at-Large to the United States Soviet Strategic Arms Reductions Talks; Under Secretary of the Navy; and as General Counsel to the Senate Committee on Armed Services in the early 1970s.

Mr. Woolsey was an officer in the U.S. Army. Mr. Woolsey has served on numerous commissions, including the National Commission on Terrorism. Of course, Mr. Woolsey was the Director of Central Intelligence from 1993 to 1995. I want to thank you, Jim, for being with us.

We also have Dr. Ariel Cohen, Senior Research Fellow in Russian and Eurasian Studies, and International Energy Security at the Davis International Studies Institute of the Heritage Foundation. Dr. Cohen has written numerous books and policy papers focused on Russia, among other topics, and his columns have appeared in the *Washington Post* and *Wall Street Journal*, and many other publications.

Laura S.H. Holgate is a Vice President for Russia/New Independent States Programs at the Nuclear Threat Initiative. Before joining NTI, she served with the Department of Defense, where she managed the Cooperative Threat Reduction Program. She also directed the Office of Fissile Materials Disposition at the Department of Energy. Ms. Holgate has written extensively on nuclear terrorism.

Michael A. Levi is a doctoral candidate in the Department of War Studies at King's College London and a non-resident Science Fellow in Foreign Policy Studies at the Brookings Institution. His past work has focused on defenses against dirty bombs. His writings have appeared in the *Foreign Policy*, *Washington Post*, *The Financial Times*, and other publications.

I am going to ask our panel if each of you would give us a 5-minute summation of your testimony. We read your written testimony and of course, we will put that in the record. We will begin with Mr. James Woolsey.

**STATEMENT OF THE HONORABLE R. JAMES WOOLSEY, VICE PRESIDENT, BOOZ ALLEN HAMILTON (FORMER DIRECTOR OF CENTRAL INTELLIGENCE)**

Mr. WOOLSEY. Thank you, Mr. Chairman. It is an honor to be invited to testify before the Committee. I seem to be testifying before Congressman Issa about once a week on average.

Mr. ISSA. Good to see you as often as possible.

Mr. WOOLSEY. Thank you. I have four points, Mr. Chairman. First of all, totalitarian groups have relative little problem cooperating with one another. Just as the world was surprised in September 1939 by the Hitler-Stalin Pact, people continue to be surprised that al-Qaeda, Baathists, and Shiite Islamists, such as Hezbollah, will cooperate with one another. They should not be surprised.

The totalitarians in these various groups hate each other. They insult each other. They kill each other from time to time, just as the Nazis and Communists did, but they are perfectly capable of working together against most of the democracies and against us.

Second, the consequence of that fact is that we do not, as the Chairman said, have the luxury of assuming a high hurdle, and we do not have the luxury of assuming that Iran, if it develops fissile material, for example, would not share it under some circumstances with al-Qaeda operatives.

We do not have the luxury of believing that just because North Korea is a Communist State that it would not work under some circumstances to sell fissile material to Hezbollah or al-Qaeda.

The methods by which we might see nuclear terrorism, my third point, are various, but several, I think, keep coming back to us as ones that we have to pay particular attention to.

One is, of course, the smuggling of small nuclear weapons, such as a suitcase nuclear weapon purchased by organized crime, and sent to terrorist groups from the Russian stock.

A second is the assembly in an American city, and let us say in an apartment, of a simple nuclear weapon, say highly enriched uranium, a shotgun-style design, using one or two capable scientists and engineers, and fissile material that has been otherwise obtained.

I know that this sounds like it ought to be harder than that, but unfortunately simple shotgun designs of highly enriched uranium bombs are much easier than any of us would wish.

We had such confidence in 1945 with the Hiroshima bomb that it was never tested. What we had tested was the plutonium bomb that we used on Nakasaki, but not the Hiroshima bomb, the first nuclear weapon ever detonated in the world.

We had such confidence in the simplicity of its design that it was dropped on Japan without a counterpart ever having been tested. Indeed, without a nuclear explosion of that sort ever having occurred anywhere in human history before.

The third item of threat that keeps looming, I think, before us is what is called in the trade "a scud in a bucket." That is a simple ballistic missile from a stockpile somewhere in the world, outfitted on something like a tramp steamer, and fired from some distance off-shore to an American city, or to a high altitude, thereby creating an electromagnetic pulse effect. This latter could well be one of the most damaging ways of using a nuclear weapon.

U.S. steps that we should emphasize, it seems to me, in this really very dangerous world which you have asked us to talk about are several, and I will close with this. First of all, it is vital that we obtain a search capability for things like shipping containers that can operate quickly and can search a reasonably large share of containers, any container which is remotely suspicious for any reason

in, let us say, a few seconds, rather than a very long time for search required now.

Second, of course we have to continue to work with Russia on the conversion of and sequestration of their fissile material, and that program has lagged some in recent years in our nuclear program. It should definitely, I believe, be picked up.

The intelligence community has a lot to contribute as it proved in the Libyan case. It is important to read the new Robb-Silberman report's section on Iraq to see what can go wrong, but it is also important to read the section on Libya to see what can go right with respect to intelligence and proliferation.

The latter it is an object lesson on how we can do some things in the future. Nuclear capabilities that we ourselves have are important. I personally believe that a reliable replacement of a warhead that is simple, much simpler than the warheads that we have and able to be kept reliable for a long time, can help maintain our deterrent against States such as Iran. And we are going to need to maintain that deterrence against the Iranians and the North Koreans for a long time.

Finally, two Government-appointed commissions have done excellent jobs on particularly difficult threats, and I would commend both to the Committee. First, the Commission on Electromagnetic Pulse.

That is a very serious threat, and the one thing that we need badly to do is to figure out ways to harden our electricity grid, and various types of key nodes, so that electromagnetic pulse blasts of nuclear weapons or other ways of generating electromagnetic pulse, even if it knocks out our toaster ovens, will not knock out, for example, our electricity grid.

And the continuity of government concerns that have been described well by the Continuity of Government Commission, are also worth a great deal of attention. Now we will not have the kind of warning in the years or decades to come that we counted on during the Cold War. We are not going to be sitting up anywhere with satellites and signal intercept capabilities watching the strategic rocket forces of the Hezbollah or al-Qaeda generate the way that we were able to watch the Soviet strategic rocket forces go to a higher state of alert.

Whatever comes to us will come the way that 9/11 came, with some strategic warning, in the sense of our understanding the overall objectives and the fatwas, for example, that reflect the thinking of people such as bin Laden. But tactical warning may be very, very hard to come by. There was an old BBC program years ago, Mr. Chairman, called *Not So Much A Program—More A Way Of Life*. We are going to have to find ways in which we can structure the information systems, the locations of individuals, and, generally speaking, the way that we do business, particularly in Washington and New York, in such a way that we can maintain the continuity of the operations of different parts of our Government even if the worst happens. Thank you, Mr. Chairman.

Mr. ROYCE. Thank you, Mr. Woolsey. Dr. Cohen.

**STATEMENT OF ARIEL COHEN, PH.D., RESEARCH FELLOW,  
THE HERITAGE FOUNDATION**

Mr. COHEN. Thank you, Mr. Chairman, and I also want to thank the staff for preparing this hearing. I am going to focus on Russia, but before that, for those who may wonder why is it that the radical Islamic organizations are seeking nuclear weapons and seeking to destroy the United States, I would say—what I am going to say is formed by my study of radical Islamist ideology for the last 3½ years, is that al-Qaeda and the movement that it represents are religiously and ideologically committed to the destruction of the United States and Israel, subrogation of the West, and overthrow of existent Muslim-Arab regimes throughout the greater Middle East and beyond, from Nigeria, to Saudi Arabia, to Indonesia.

Its proclaimed goal is establishment for the Califate Khilafa, a militarized dictatorship based on the Shari'a law, the Holy Law, dedicated to conquest of the non-Muslim world, Dar al-Harb, and in Arabic, literally the Land of the Sword. Now to Russia.

Over the last 20 years since Gorbachev's Perestroika, Russia experienced economic and political upheavals that significantly deteriorated its ability to preserve its nuclear arsenal and its nuclear materials stockpile.

The Soviet empire was well protected from the outside. They maintained the control of the borders, but what was inside was not at the par in terms of security and monitoring capabilities, with what was the state of the science and state of the art in the West.

Nuclear, chemical, and biological materials storage facilities are often protected with nothing more than a padlock, and an impoverished and half-starved conscript, or a retirement age guard.

Moreover, corruption of government officials and general officers and mid-ranked officers remains at a high level, and very few, if any, prosecutions are taking place in the last 10 or 15 years.

Many of those guilty of corruption remain in the ranks of the Russian armed services and its nuclear establishment. Under the Putin Presidency, the military reform was declared completed, and we have seen major malfunctions and disasters, for example, in nationwide maneuvers in Russia and in the Northern Fleet. So these are indications that technologically the Russian military is not in very good shape.

The corruption is at the point today that officers of the Russian Army sell weapons to Chechen militants, who then turn around and use it against their own soldiers. This is inconceivable in the U.S. Army or in any modern army.

The other problematic phenomenon in Russia over the last 5 years is the growing level of anti-Americanism. I go to Russia a lot. I go there 3 or 4 times a year, and I have been there in February and March, consecutively.

The level of anti-Americanism is going up, and it is encouraged by the top levels of the Government. I had a conversation with a relatively recently-retired, very senior Russian official, who very matter of factly told me that both Yeltsin and Putin analyzed U.S. behavior and came to a conclusion that the United States is not afraid of Russia.

And coming from a very high-level official, who closely worked with both Presidents, it is an interesting statement to say the

least. Anti-Americanism may inform decisions by those who are capable of selling or even turning a blind eye to those who might seek to divert either nuclear weapons—which are not stored adequately, and this primarily concerns tactical nukes and the nuclear weapons that are in storage, and not necessarily something that is in active service—as well as weapon grades, highly enriched uranium, and plutonium, of which there are hundreds of tons in Russia today. To complicate the picture even further, the influence of organized crime remains widespread and pervasive, and is reaching to the highest levels of the Russian Government.

The other witness here, Jim Woolsey, has a great joke about Russian organized crime, but I will leave it to him to tell you at some point. The matter-of-fact is that as organized crime controls money flows of hundreds of millions, if not billions, of dollars, they have the capability to buy a lot of technology and possibly systems that are dangerous to us.

Since the George H.W. Bush Administration, through Bill Clinton's Administration, and the current Bush Administration, the United States undertook a number of steps to increase cooperation with the Russians to safeguard Russian weapons of mass destruction, and decommission those which were fazed out. This is known as the Nunn-Lugar program, and it is funded at about \$1 billion a year.

This cooperation is continuing, although the Russians are complaining, including the media, that the purpose of Nunn-Lugar is to bring the Russian nuclear arsenal under United States control, which is completely incorrect in my view, and I hope that my colleagues here will agree.

And again that position may be connected somehow to this anti-Americanism that I mentioned before, and at the same time, Russia is continuing to sell nuclear technology for civilian purposes to Iran. And in the guise of that program, there may be—and I heard it from my Russian sources—there may be violations of the existing regime in terms of selling to Iran something beyond the Bushehr Reactor-related technology.

However, an analysis of open sources indicates that it was Pakistan, and specifically the A.Q. Khan network that is the source of most of the proliferation that we can find to date around the world. When it comes to military-related systems, it is not Russia.

There are outstanding issues and that is the lack of reliable accounting, and electronically-updated and up-to-date databases that cover all weapons systems, nuclear weapons systems, including tactical nuclear arms, shells, and warheads.

Mystery surrounding the very controversial weapons system called the suitcase bombs that were designed as demolition charges for diversion and state-sponsored terrorism with Soviet ties, and there are conflicting statements from Russian officials on what happened to that.

There is poor security of some nuclear weapons systems, especially tactical and stored/decommissioned; lack of modern means of monitoring, such as closed-circuit TV and motion sensors linked to a computerized monitoring system; poor security of highly enriched uranium and plutonium stockpiles; and insufficient security of research, medical, and industrial isotopes.

I would add one more point, and that is wide access that Russians are granting to students from problematic countries to study nuclear engineering in Russia. And unfortunately my understanding is that we, in this country, are not without blemish in that regard as well.

We have to do our best to continue to cooperate with Russia and to try to identify and penetrate terrorist organizations that are seeking to gain nuclear capabilities or radiation disbursement device capability. We need to seek to neutralize these organizations. It is way beyond law enforcement in Russia and other countries in the former Soviet Union.

And I would refer you to my testimony to consult with other policy recommendations there. Thank you very much for your time.

[The prepared statement of Mr. Cohen follows:]

PREPARED STATEMENT OF ARIEL COHEN, PH.D., RESEARCH FELLOW, THE HERITAGE FOUNDATION

Ever since the September 11, 2001, terrorist attacks, Americans have been lucky not to have more atrocities on the U.S. soil. However, the enemy, while weakened, is far from destroyed. Osama bin Laden and Ayman al-Zawahiri continue to issue threats against America from their hideouts. Their strength and support base, while diminished, is not eliminated. Other terrorist organizations inspired by radical Islamist ideology are still at large in Europe, the Middle East, the Caucasus, Central Asia, the Indian subcontinent, Southeast Asia, and presumably in the Americas. Some of them are willing to use weapons of mass destruction (WMD) to bring America down.

Recent reports about intelligence failures before 9/11 and the Iraq war indicate that there are numerous issues regarding U.S. strategic adversaries that the intelligence community did not handle adequately. I hope that under the leadership of Directors John Negroponte and Porter Goss (when he is confirmed) the intelligence community will address these issues with the innovation and creativity they deserve.

In the past, court proceedings and intelligence debriefings indicated that al-Qaeda and other terrorist organizations planned their operations for up to six years before execution. Several operations, which aimed to use chemical weapons, were intercepted close to execution in Great Britain, France, and Jordan. The current hiatus in attacks against the U.S. homeland may be caused by preparation for massive attacks, including using weapons of mass destruction.

Osama bin Laden called using weapons of mass destruction against the U.S. a “religious duty.” He also declared that undermining America’s economic power is his strategic objective. Bin Laden did not confirm or deny pursuit of such weapons in press interviews, but a body of evidence exists that he actively sought them. For example, a defector from al-Qaeda by the name of Ahmad al Fadh testified in U.S. court that in 1994 he was tasked with procuring a radioactive material, apparently highly enriched uranium (HEU) from a South African source.<sup>1</sup> Ayman al-Zawahiri was spotted visiting Russia for six months in 1996—ostensibly to assist the Chechens to escalate their hostilities against Russia—and spoke publicly about the ease of procuring nuclear materials from the Soviet Union. In 2002, Abu Zubaydah told interrogators that al-Qaeda knew how to build “dirty bombs” and where to get material for them.<sup>2</sup>

In 2003, a prominent Saudi cleric close to al-Qaeda provided a comprehensive religious opinion (fatwa) justifying the use of nuclear weapons against the United States, even if it killed up to 10 million Americans, under the pretext that the U.S. is to blame for the death of 10 million Muslims.<sup>3</sup> Activities of Sheikh Nasir bin Hamid al-Fahd, the cleric who granted the decree concerning WMD, and his two colleagues, Ali al-Khudayr and Ahmad al-Khaladi, who provide that such “religious”

<sup>1</sup>Kimberly McCloud and Matthew Osborne, “WMD Terrorism and Osama bin Laden,” CNS Reports, at [cns.miis.edu/pubs/reports/binladen.htm](http://cns.miis.edu/pubs/reports/binladen.htm) (April 11, 2005).

<sup>2</sup>Smita P. Nordwall, “Detainee Said to Link Al-Qaeda, ‘dirty bomb’”, USA Today, April 23, 2002, p. 8A.

<sup>3</sup>Nasir bin Hamid Al-Fahd, “A Treatise on the Legal Status of Using Weapons of Mass Destruction Against Infidels”, May 2003, in Nuclear Resources, Carnegie Endowment for International Peace, at [www.ceip.org/files/projects/npp/resources/terrorism.htm](http://www.ceip.org/files/projects/npp/resources/terrorism.htm) (April 13, 2005).

justifications are important for bin Laden to justify mayhem. He portrays himself as a pious Muslim who protects and defends other Muslims and wages a “Holy War” (jihad) in their name.<sup>4</sup>

There are also media reports of al-Qaeda buying or stealing up to 20 nuclear warheads from the former Soviet Union; of Osama bin Laden providing three million dollars and a large commercial amounts of opium to Chechens in exchange for nuclear weapons or materiel; and of four Turkmen nuclear scientists working to create an al-Qaeda weapon.<sup>5</sup> The veracity of these reports cannot be independently evaluated.<sup>6</sup> In February 2005, Director of Central Intelligence Porter Goss testified that al-Qaeda might have possession of Russian-origin radioactive material.

Al-Qaeda is an organization religiously and ideologically committed to the destruction of the United States and Israel, the subjugation of the West, and the overthrow of existing Muslim and Arab regimes throughout the Greater Middle East and beyond—from Nigeria to Saudi Arabia to Indonesia. Its proclaimed goal is establishment of a Caliphate (Khilafa)—a militarized dictatorship based on the Shari’a (Holy Law) dedicated to conquest of the non-Muslim world (*Dar al-Harb*, literally, Land of the Sword).

Other radical Islamist organizations share these far-reaching goals and anti-American agendas, including the Lebanese Shi’a Hizballah and Pakistani Lashkar-e-Tayyiba. The latter has links to al-Qaeda, technological sophistication and personnel, and international connections reaching into the U.S., which may propel them to attempt to acquire WMD capabilities.<sup>7</sup> For example, Hizballah operates a satellite TV channel and recently tested a military unmanned aerial vehicle to fly over Israel. Such low-flying vehicles can deliver warheads to targets otherwise protected against air attacks. Hamas, another radical Islamist terrorist organization, succeeded in developing rockets and producing Kassam short range missiles in the technologically primitive conditions of Gaza’s metal workshops and garages. Other Palestinian radical organizations utilized hot air balloons and hang gliders, which can be used for a crude bomb or a radiation dispersion device (RDD) delivery.<sup>8</sup>

All of these organizations attract a number of engineers and technicians who may facilitate their homegrown nuclear weapons programs. With considerable financial resources at their disposal, they can also recruit engineers and scientists from among thousands who received education in related fields in Russia, the West, and the Muslim world. Such clandestine programs would be assisted by the wealth of information about nuclear matters available on the Internet.

Furthermore, radical Islamists have ideological, organizational, and operational connections to the military and intelligence establishments of Iran and Pakistan. The former is a country suspected by the Bush Administration and the International Atomic Energy Agency (IAEA) of managing a clandestine nuclear weapons program, and the latter is a nuclear power with a strong influence of anti-American Islamists in its nuclear establishment and its military and intelligence services. Pakistan was the source of Ahmed Qadir Khan’s global nuclear proliferation network, which supplied technology to North Korea, Libya, Iran, and possibly other countries.<sup>9</sup> There is a strong suspicion that prior to 9/11, two nuclear engineers from Pakistan traveled to Afghanistan to offer their expertise to Osama bin Laden.

Experts believe that terrorists are willing to inflict massive casualties using WMD, that they are capable doing so despite technical difficulties that may be encountered in execution of such an undertaking, and that they are capable of either stealing or building a nuclear bomb, even of a technologically crude variety. Cases of stealing HEU were documented by IAEA.<sup>10</sup>

Nuclear terrorism presents at least four distinct kinds of threats:

<sup>4</sup> Kelly Uphoff, “Osama bin Laden’s Mandate for Nuclear Terror,” JINSA Online, December 10, 2004, at [www.jinsa.org/articles/articles.html/function/view/categoryid/1701/documentid/2762/history/3,2360,655,1701,2762](http://www.jinsa.org/articles/articles.html/function/view/categoryid/1701/documentid/2762/history/3,2360,655,1701,2762) (April 13, 2005).

<sup>5</sup> Adam Dolnik, “America’s Worst Nightmare? Osama bin Laden and Weapons of Mass Destruction,” PIR Center, September 12, 2001, at [www.ceip.org/files/projects/npp/resources/America%20Worst%20Nightmare%20-%20Osama%20bin%20Laden%20and%20Weapons%20of%20Mass%20Destruction.pdf](http://www.ceip.org/files/projects/npp/resources/America%20Worst%20Nightmare%20-%20Osama%20bin%20Laden%20and%20Weapons%20of%20Mass%20Destruction.pdf) (April 11, 2005).

<sup>6</sup> McCloud and Osborne, “WMD Terrorism and Osama bin Laden.”

<sup>7</sup> Audrey Kurth Cronin *et al.*, “Foreign Terrorist Organizations,” CRS Report for Congress, February 6, 2004, p. 55.

<sup>8</sup> Cronin *et al.*, “Foreign Terrorist Organizations,” p. 74.

<sup>9</sup> Anton La Guardia, Ahmed Rashid, and Alec Russell, “The Nuclear Supermarket: Race to Shut Networks Supplying Rogue States,” *The Daily Telegraph* (London), February 6, 2004, p. 01.

<sup>10</sup> Matthew Bunn and Anthony Wier, “The Seven Myths of Nuclear Terrorism,” *Current History*, March 2005, p. 153.

- Radiation dispersion devices (also known as “dirty bombs,” powered by conventional explosives);
- Attacks on nuclear installations, such as reactors;
- Seizure and detonation of intact nuclear weapons; and
- Stealing or buying of nuclear materials to build a nuclear bomb.<sup>11</sup>

As sources of unsecured nuclear weapons and material, Russia and the former Soviet Union remain great proliferation concerns for a number of reasons. First, the Soviet Union was an empire with a strong external perimeter and weak internal safeguards. While the Soviet regime tightly controlled everything that moved across the border until the late 1980s, internal safety, security measures, and bureaucratic culture were inadequate. This was demonstrated by a series of technological catastrophes in the 1980s and 1990s, the most famous and dangerous of which was the meltdown of the Chernobyl nuclear reactor in Ukraine.

Nuclear, chemical, and biological material storage facilities often were—and still are—protected by nothing more than a padlock, an impoverished conscript, or a retirement-age guard. Moreover, corruption among general officers, mid-rank officers, and officials is rampant, while law enforcement is highly selective. Some general officers were removed from the ranks during the Yeltsin Administration (1992–1999) for corruption, gross negligence, and political involvement. Many others, however, who were no less guilty, remained in the ranks. Under the Putin presidency, the Kremlin has declared the military reform is completed and even fewer officers were relieved of duty despite major military disasters, such as the sinking of the nuclear submarine *Kursk* and the failure of missile tests during major military maneuvers. There is a pervasive sense in the military and security services that nobody is responsible for anything, and that justice, accountability, and responsibility are not a part of the bureaucratic culture.

Corruption is pervasive. Russian officers and officials have been accused of selling weapons to Chechen militants, of allowing armed Chechen to pass unmolested through road-blocs *en route* to terrorist attacks, of attempting to sell nuclear materials from decommissioned submarine reactors in the Northern Fleet, of selling vital components of military systems and vehicles, and of illegal sale of soldiers’ food rations and food supplies, leading to malnutrition among the ranks. In such an environment, the sale of nuclear equipment and materiel, or even of individual weapons, is feasible.

Three contributing factors that may facilitate the purchase of nuclear weapons, material, and components in Russia are anti-Americanism, the growing influence of Wahhabi/Salafi ideas, individuals and organizations, and organized crime.

Anti-Americanism pervades the Russian elite from the top down and is escalating in the media. Every international event, from the bombing of Serb forces in Kosovo, to NATO enlargement, to granting asylum to Chechen militant leaders in the U.S. and UK is interpreted as directed against Russia and aimed at undermining its state power. Most recently, U.S. support of bloodless revolutions in Georgia and Ukraine were cast by the Russian leadership and media as aimed at pushing Russia from its “sphere of influence” in the Commonwealth of Independence States and attempting to install pro-American regimes in these former Soviet republics. Current and former senior Russian officials told this witness that “U.S. behavior [vis-à-vis Russia] is not that of a friend, but of an adversary. . . . While we need to talk to the U.S., we need to keep in mind that it is an enemy.”<sup>12</sup> This attitude is echoed in an incessant stream of media commentary and biased reporting, which translate into the results of numerous opinion polls in which the U.S. consistently comes out as Russia’s “public enemy number one.”

The Russian military forces’ posture, new weapons system development (including nuclear and missile modernization), the profile of military maneuvers, and foreign alliances (especially with China and Iran) all indicate that it views the United States as an unfriendly power. Such anti-Americanism may facilitate illicit transactions in which the Russian seller or thief would understand that the U.S. might be the target of the nuclear weapons or components acquired.

The increasing influence of Salafi/Wahhabi Islam in Russia, home to about 20 million Muslims, may facilitate penetration of the Russian military-industrial complex by collaborators and sympathizers of terrorist organizations, or use of Russian Muslims by such organizations as intermediaries in illicit transactions. Pro-Salafi organizations and preachers in Russia operate with few restrictions. Leading Russian

<sup>11</sup>William C. Potter, Charles D. Ferguson, and Leonard S. Spector, “The Four Faces of Nuclear Terror And the Need for a Prioritized Response,” *Foreign Affairs*, May/June 2004, at [www.foreignaffairs.org](http://www.foreignaffairs.org) (April 11, 2005).

<sup>12</sup>Interview with the author, Moscow, March 2005 [source requested anonymity].



experts on Islam informed this witness in March 2005 that Saudi Arabian funding sources expend large amounts of hard currency in Russia to “purchase” political influence among politicians, journalists, and other members of the Russian elite.

Finally, the influence of organized crime remains pervasive. Russian and post-Soviet organized criminal enterprises are more sophisticated and command more educated personnel than almost any other organized crime structures. Recently, the Prosecutor General of Russia stated that 500 large enterprises are controlled by organized crime, including major oil and gas supply and transportation ventures generating hundreds of millions of dollars in revenue. Organized crime has merged in many cases with “legal” business and has access to state enterprises, government officials, as well as to a broad range of international contacts. Russian organized crime may be the conduit through which terrorists acquire and ship nuclear components or weapons to their final destinations.

Thus, it is clear that the safety and security of nuclear weapons, technology, and materials in the former Soviet Union leave much to be desired. While strategic warheads and missiles on active duty may be reasonably secure, the same cannot be said about tactical nuclear weapons, decommissioned weapons, or highly enriched uranium and plutonium (which can be used in production of improvised nuclear weapons or components thereof). A rather primitive weapon, for example, a World War II HEU gun model, can be assembled by terrorists, and either transported to the United States or assembled *in situ* (on the spot). Radioactive material from the former Soviet Union—either from nuclear weapons or raw materials for production of weapons—can be used in radiation dispersal devices, popularly known as “dirty bombs”.

To diminish proliferation threats from Russia and post-Soviet space, the George H.W. Bush, Bill Clinton and George W. Bush Administrations undertook a number of steps to secure Soviet/Russian WMD. They funded Cooperative Threat Reduction Initiatives (known as Nunn-Lugar initiatives), and pursued non-proliferation projects with the Yeltsin and Putin administrations. This cooperation seems to be working to at least some degree. Granted, the U.S. may have serious misgivings regarding Russian transfer of light water reactor technology to Iran, since it may be a cover for more ambitious nuclear weapons manufacturing. Nevertheless, to this day there is little evidence in open sources that Russia proliferates nuclear weapons-related technology to countries of concern, such as North Korea and Iran. If anything, Pakistan seems to be the main culprit, followed by North Korea and possibly China.<sup>13</sup> Even African countries such as Ghana and the Democratic Republic of Congo may be sources of nuclear isotopes for “dirty bombs.”<sup>14</sup> Still, Russia and post-Soviet countries top the list of potential proliferation sources due to their size and their sheer number of nuclear weapons—which some estimate in excess of 40,000—and hundreds of tons of weapons grade material. The Russian stockpile suffers from a number of issues which need to be addressed in order to ensure its security, including:

- Lack of reliable accounting and electronically updated (and up-to-date) databases that cover all weapons systems, including tactical nuclear arms, shells, and warheads;
- Mystery surrounding so-called suitcase bombs;<sup>15</sup>
- Poor security of some nuclear weapons systems, especially tactical and stored/decommissioned charges;
- Lack of modern means of monitoring, such as closed-circuit TV and motion sensors linked to a computerized monitoring system;
- Poor security of highly enriched uranium and plutonium stockpiles; and
- Insufficient security of research, medical, and industrial isotopes.

In terms of probability, an RDD attack is easier to execute than a full-scale nuclear fusion explosion. As far as construction of a fusion device, a HEU bomb is easier to manufacture than a plutonium bomb, and a crude improvised bomb is easier to build than a military-grade weapon. Having said that, there is more than a theoretical possibility for terrorists to buy a working warhead and deliver it to the U.S.

<sup>13</sup> Guardia, Rashid, and Russell, “The Nuclear Supermarket” p. 01.

<sup>14</sup> Francois-Xavier Harispe, “U.S. Experts to Analyse Uranium Seized by DR Congo Authorities”, Agence France Press, March 24, 2004.

<sup>15</sup> Two senior Russian officials—the late General Alexander Lebed, President Yeltsin’s Secretary of Russia’s National Security Council and Yeltsin’s science advisor, Professor Alexei Yablokov—said publicly and testified that such devices were commissioned by the Soviet KGB (Committee of State Security), but their fate is unclear due to the limited time span of such weapons.

in one of the millions of shipping containers that enter the country without examination by U.S. Customs. Terrorists may also smuggle such a weapon through a porous land or maritime border. In terms of executioners of such an attack, al-Qaeda, Hizballah, or Lashkar-e-Tayyiba may be the three organizations capable of technical expertise and possessing the motivation to undertake it.

After 9/11, the U.S. cannot view non-proliferation efforts as an “either/or” proposition. We cannot focus on proliferating states and neglect terrorist organizations, or vice-versa. Russia and the post-Soviet states deserve as much watching as other potential sources of proliferation such as Pakistan, Iran, and North Korea. Yet the terrorists already have demonstrated their ingenuity by using civilian airplanes and box cutters as weapons of mass destruction. Cooperation with Russian, Ukrainian, Central Asian, and other governments and special services is necessary, but this is difficult due to the reasons described in this testimony. These include anti-Americanism at the highest levels, corruption, and inefficiency. Still, realistic policy options need to be developed to prevent nuclear terrorism from taking place. It is unlikely that the U.S. will abandon its pursuit of democracy and human rights around the world. In fact, a more open society is likely to bring more public scrutiny to lapses in security and corruption, including in the armed forces and bureaucracy. Thus, The Heritage Foundations presents the following policy recommendations:

- *Create* a comprehensive global network, which meshes and meshes intelligence gathering, counter-proliferation measures, and special operations to thwart proliferation.
- *Boost* cooperation with law enforcement and intelligence communities around the world to include joint counter-terrorist operations. Such operations would include deep on-site penetration of terrorist organizations, and would provide ample warning to neutralize such organizations at the early stages of planning a WMD terrorist attack.
- *Provide* ample funding and emphasis on non-proliferation and anti-terror joint programs with Russian and other post-Soviet government structures.
- *Neutralize* those involved in WMD terrorist operations and deter against high-worth and symbolic targets they may value.
- *Design* a supporting public affairs components, explaining the importance of joint anti-terrorism actions to the Russian elites, media, and broad public would be of great use.
- *Launch* a political warfare component via the intelligence community to encourage moderate Muslim clerics to issues fatwas forbidding terrorism using WMD.
- *Consider* a program instituting a monetary reward for interception of proliferation operations and nuclear terrorist activities, without creating a prize for unscrupulous foreign officials to simulate such activities.

To conclude, fighting against WMD-armed terrorist groups is possibly more challenging than any Cold War task. Then, there were only two players, which were coalitions led by strong nation-states with vertical chains-of-command. Now there are multiple players, many of them trans-national movements and other diffuse non-state entities driven by an ideology many Americans do not comprehend, which is based on religion and language they don't know. However, for the United States and its allies, there is no alternative but to combat and destroy these evildoers while preventing them from obtaining and using weapons of mass destruction.

Mr. ROYCE. Thank you, Dr. Cohen. We are going to go to Ms. Holgate.

**STATEMENT OF MS. LAURA S.H. HOLGATE, VICE PRESIDENT FOR RUSSIA/NEW INDEPENDENT STATES PROGRAMS, NUCLEAR THREAT INITIATIVE**

Ms. HOLGATE. Thank you, Mr. Chairman and Congressman Sherman. I appreciate the opportunity to contribute to this important hearing to explore what is needed to truly avert nuclear terrorism.

As your invitation to this hearing recites in part, there is no shortage of assertions that nuclear terror is the greatest threat we face today. There is no shortage of evidence and analysis to back up those assertions, and no shortage of calls to act.

What we do have a shortage of is responses commensurate with this catastrophic threat, and I am hopeful that you and your colleagues can take steps here to remedy this grave situation.

At NTI, we have observed that the difference between a terrorist and a nuclear terrorist is found in the word “nuclear;” no nuclear material and no nuclear terrorism. This obvious logic underpins our fundamental prescription for averting nuclear terrorism: Secure, consolidate, and, where possible, eliminate nuclear weapons materials in all forms and in every location.

The good news is that we know how to do this. It is affordable and achievable within the next decade. The bad news is that we have yet to act with a sense of urgency that this threat requires, whether out of a misplaced sense of priorities, or out of a false perception that this threat is not real.

How might a terrorist become a nuclear terrorist? They could steal or acquire a weapon manufactured by a state with a weapons program. Russia has tens of thousands of weapons, including small portable, low-tech, tactical weapons, none of which are subject to outside accounting.

The Beslan tragedy demonstrates the corruption and incompetence that exists in Russian security services. Pakistan is known to have radical Islamists in the armed services charged with guarding their weapons, and A.Q. Khan, one of the leaders of their nuclear weapons program, ran the most stunning nuclear black market commerce we have ever seen.

North Korea, who has proven that they will sell anything to anyone, may be prepared to sell one or more weapons to terrorists once they make enough for themselves. Given the technical difficulties associated with detonating a bomb that they did not design, however, terrorists might prefer instead to build their own.

They could likely build a simple gun-type device based on stolen highly enriched uranium, or less likely, an explosion device using plutonium. The raw materials of a nuclear bomb can be found not only in military arsenals associated with national weapons programs, and especially in Russia, but are freely traded, used, and in many instances poorly guarded in dozens of civilian research facilities and college campuses in 40 nations around the world.

We need not speculate about Osama bin Laden’s interests in acquiring a nuclear weapon, as those speaking before me have noted. But preventing terrorists’ access to nuclear weapons and materials is the single most effective way to avert nuclear terrorism.

It is the only step in the process where we have an advantage. Every other step along the terrorist’s path to the bomb is easy for them and hard for us. The U.S. and others have been making progress in the prevention mission in large part through the visionary and effective threat reduction programs known collectively as Nunn-Lugar.

But not on a pace or at a scope that will solve the problem on a timeframe relevant to the threat. A successful response to the nuclear terror threat must contain a diverse, yet coordinated, set of policy and programmatic responses; political and financial resources; and a global coalition centered around a new and true United States and Russian partnership dedicated to preventing catastrophic terror.

In my written testimony, I have provided some actionable suggestions for each of these three elements, and I hope that our discussion will allow for some further elaboration of those issues.

In many cases these solutions, however, cannot be legislated, but they offer a basis for constructive congressional oversight. Even though threat-reduction programs are subject to congressional scrutiny, far out of proportion to the tiny budgets they have, such hearings tend to focus on bean counting and micromanagement. What is missing is congressional attention to the big picture and policy level oversight that holds the Executive Branch accountable to matching words with deeds, and to taking the nuclear threat as seriously as they claim.

At NTI, we frequently ask ourselves, our elected Representatives, and our fellow citizens of the world: “The day after a catastrophic instance of nuclear terror, what will we wish we had done to prevent it, and why aren’t we doing that now?”

I have done the best in my testimony to offer some answers to the first question, but the second question has no acceptable answers. The time to act is now. Thank you, Mr. Chairman.

[The prepared statement of Ms. Holgate follows:]

PREPARED STATEMENT OF MS. LAURA S.H. HOLGATE, VICE PRESIDENT FOR RUSSIA/  
NEW INDEPENDENT STATES PROGRAMS, NUCLEAR THREAT INITIATIVE

Mr. Chairman, I appreciate the opportunity to contribute to this important hearing to explore what’s needed to avert nuclear terrorism. As your invitation to this hearing recites in part, there is no shortage of assertions that nuclear terror is the greatest threat we face today. There is also no shortage of evidence and analysis to back up those assertions, and no shortage of calls to act. What we do have a shortage of is responses commensurate with this catastrophic threat, and I am hopeful that you and your colleagues can take steps to remedy this grave situation.

At NTI, we have observed that the difference between a terrorist and a nuclear terrorist is found in the word “nuclear”: no nuclear material, no nuclear terrorism. This obvious logic underpins our fundamental prescription for averting nuclear terrorism: secure, consolidate, and—where possible—eliminate nuclear weapons materials, in all forms, in every location. The good news is that we know how to do this, and that it is affordable and achievable within the next decade. The bad news is that we have yet to act with the sense of urgency this threat requires, whether out of a misplaced sense of priorities, or out of a false perception that this threat is not real.

How might a terrorist become a nuclear terrorist? They could steal or acquire a weapon manufactured by a state with a weapons program. Russia has tens of thousands of weapons, including small, portable and low-tech tactical weapons, none of which are subject to outside accounting. The Beslan tragedy demonstrates the corruption and incompetence that exists in the Russian security services. Pakistan is known to have radical Islamists in the armed services charged with guarding their weapons, and A. Q. Kahn, one of the leaders of their nuclear weapons program, ran the most stunning nuclear black market commerce we have ever seen. North Korea, who has proven they will sell anything to anyone, may be prepared to sell one or more weapons to terrorists once they make enough for themselves.

Given the technical difficulties associated with detonating a bomb that they did not design, however, terrorists might instead prefer to build their own. They could build a simple gun-type device, based on stolen highly enriched uranium or, less likely, an implosion device using plutonium. The raw materials of a nuclear bomb can be found not only in military facilities associated with national weapons programs, but are freely traded, used, and, in many instances poorly guarded, in dozens of civilian research facilities and college campuses in over 40 nations around the world.

We need not speculate about Osama bin Laden’s interest in acquiring a nuclear weapon. He has spoken to the world of his intentions, and even sought a *fatwa*, or religious decree, sanctifying his pursuit of nuclear and other weapons of mass destruction. We know that he recruited scientists and engineers who could help him realize his nuclear vision, and we found nuclear weapons designs in the caves in

Afghanistan. It would be foolish to believe that he is unique among terrorists in seeking nuclear capabilities.

Preventing terrorists' access to nuclear weapons and materials is the single most effective way to avert nuclear terrorism; it's the only step in the process where we have an advantage. Every other step along the terrorists' path to the bomb is easy for them and hard for us. The US and others have been making progress in the prevention mission, in large part through the visionary and effective threat reduction programs known collectively as "Nunn-Lugar," but not on a pace or at a scope that will solve the problem on a timeframe relevant to the threat.

A successful response to the nuclear terror threat must contain a diverse yet coordinated set of policy and programmatic responses; political and financial resources; and a global coalition dedicated to preventing catastrophic terror. I provide some actionable suggestions for each of these three elements. In many cases, these solutions cannot be legislated, but they offer a basis for constructive Congressional oversight. Even though threat reduction programs are subject to Congressional scrutiny far out of proportion to their tiny budgets, such hearings tend to focus on bean-counting and micromanagement. What's missing is Congressional attention to the big picture, and policy-level oversight that holds the Executive Branch accountable to matching words with deeds, and to taking the nuclear threat as seriously as they claim.

#### *Policy and Programmatic Responses*

Recent discussions of nuclear proliferation have proposed a number of changes or adjustments in US and global policies on nuclear issues. Some of them would be particularly helpful in averting nuclear terrorism:

- Establish a global norm delegitimizing commercial use of highly enriched uranium
- Aggressively promote and enforce UN Security Council Resolution 1540, which defines a binding series of actions by states to secure weapons materials, to prevent export of weapons technologies, and to track terrorists
- Create mechanisms to develop and promote global best practices in nuclear materials security
- Find new ways to involve India, Israel, and Pakistan in observing the sovereign responsibilities of states with nuclear weapons

Several programmatic improvements, which could be made today, would come closer to responding adequately to the threat of nuclear terrorism:

- Accelerate security upgrades at Russian materials and weapons storage sites. This is doable within 4 years, but at the current pace, it will take well over a decade.
- Accelerate and diversify the Global Threat Reduction Initiative to remove and/or eliminate vulnerable nuclear materials worldwide
- Accelerate elimination of excess Russian highly enriched uranium
- Broaden scope and diversify techniques to reduce overemployment at Russian weapons labs and factories to reduce potential inside collaborators (including through expanded use of US AID)
- Incorporate security culture into training and programmatic success metrics

#### *Resources—Financial and Political*

Shockingly, the government-wide funding resources allocated to threat reduction activities overseas have remained constant since the late 1990s at about \$1 billion each year, mostly in the budgets of Energy, Defense and State Departments, despite calls both before and after September 11 for significant increases. During this time, the missions have broadened beyond the former Soviet Union to include Libya and Iraq, plus a range of activities to address dangerous nuclear materials around the world.

It has become fashionable, even for these missions' strongest supporters, to point to the backlog of unspent funds in some of these programs and suggest that funding isn't the main problem. In fact, in several of the most critical programs, internal and external bureaucratic disputes over access, liability, certifications and other petty issues have constrained progress more than inadequate funding.

This is why any consideration of resources must make reference to political resources—does removing bureaucratic roadblocks or insisting on greater commitment to threat reduction programs make it into the most senior dialogues with friends and allies abroad? Are cabinet agencies held accountable to effectively perform their nonproliferation responsibilities? Will Members of Congress take the time to under-

stand the complex legislative structure of these programs and cast informed votes in support of more streamlined and flexible programs? Sadly, the answer to these questions has been, not often enough.

Returning, however, to money, assertions that funding shortfalls are not the main problem are less true now than they were two years ago—DOE's program to secure Russian nuclear materials worked off a three-year backlog last year—and in any case, are over-broad. Project managers for certain efforts to commercialize Russian technology and create civilian jobs for Russian weapons personnel have told me they could effectively spend twice their budget, for example. Important new initiatives, if adopted—such as accelerating destruction of Russia's excess highly enriched uranium—will require new funds.

We must avoid making internal funding trade-offs among these critical programs without considering wider aspects of the federal budget: achieving the pace and scope of action required by the threats will cost more money, but compared with other national security expenditures, these proven prevention approaches are efficient and effective.

#### *A Global Coalition*

One way to manage the financial implications of accelerated and broadened threat reduction efforts is to engage other nations, as has been done by creating the G-8 Global Partnership against Weapons of Mass Destruction. G-8 nations and others pledged to match the US's annual \$1 billion on threat reduction expenditures, initially in Russia. Unfortunately, these pledges have been slow to become projects that yield results, and we hope for faster progress on that front.

Financial burden-sharing, however, is not the main reason a truly global coalition is necessary to succeed in averting nuclear terrorism. The threats are so broad, the solutions are so diverse, and the ability of the US acting alone to impact sensitive decision-making in every country around the world is so limited, that we must work closely with others to ensure that every nation with nuclear materials secures them to high and transparent standards, that they request assistance if they cannot, and that those who can provide assistance do so. The chain of security to avert nuclear terrorism is only as strong as its weakest link. Strengthened institutions such as the International Atomic Energy Agency must also play a critical role in this mission. Russia in particular must recognize its vulnerability to nuclear terrorism, and understand that the benefits of cooperation outweigh the fears of those who stymie that cooperation today.

Threat reduction principles will be effective only if they are seen to apply to all nations equally, and they depend for their success on a shared understanding that every nation is at risk of nuclear terrorism, whether a bomb explodes on their territory or not. Nuclear terrorists respect no national boundaries, either in their efforts to secure the ingredients for a bomb, or in the impact of a threat or detonation. Beyond the horrifying destruction of a nuclear attack, financial markets will crash, societies will lose faith in their governing structures, civil liberties will be severely truncated, and the free flow of goods, services and ideas in a globalized world will collapse in ways that harm everyone.

#### *The Day After*

At NTI, we frequently ask ourselves, our elected representatives, and our fellow citizens of the world: the day after a catastrophic instance of nuclear terror, what will we wish we had done to prevent it? Why aren't we doing that now? I've done my best to offer some answers to the first question. The second question has no good answers. The time to act is now.

Mr. ROYCE. Thank you, Ms. Holgate. Mr. Levi.

#### **STATEMENT OF MR. MICHAEL A. LEVI, NONRESIDENT SCIENCE FELLOW, THE BROOKINGS INSTITUTE**

Mr. LEVI. Chairman Royce, Congressman Sherman, thank you for the privilege of speaking with you today. Defeating nuclear terrorism requires a four-layered strategy. First, the number of states and sites with nuclear weapons or special nuclear material needs to be kept to a minimum.

Second, any remaining weapons or materials must be secured to the highest standard possible. Third, a homeland security system exploiting intelligence, law enforcement, border controls, and re-

sponse, needs to be put in place to minimize the chance that terrorists can exploit residual gaps in security over weapons and materials.

And finally a strategy for deterring terrorists and state-sponsors from involving themselves in nuclear terrorism must be developed. Stopping the spread of nuclear weapons and securing existing nuclear stocks should shoulder the bulk of the defensive burden.

I have discussed each of these in my written testimony and my colleagues have had insightful suggestions, and so I will focus here on homeland security and on deterrence, because in the context of nuclear terrorism they are being wrongly neglected.

But the core of this neglect has several flawed judgments and assumptions. First, is that the security for nuclear weapons and materials properly pursued can make theft or diversion impossible, and makes other defensive steps unnecessary. This is wrong.

So long as nuclear materials are handled regularly, rather than simply locked away, some possibility of diversion will remain. And some states may choose to deliver or to transfer weapons or materials to terrorist groups.

We should still pursue the most vigorous effort possible to secure nuclear materials and to prevent proliferation. But whatever our success, there is a real danger that theft or diversion will persist. So how should we deal with this gap?

Many contend that trying to stop a terrorist group after it has already acquired nuclear materials is futile. That claim rests on a belief that aside from acquiring nuclear materials, steps demanded of a terrorist plot—building a bomb, and transporting it to its target—are always straightforward.

A more careful analysis suggests that while terrorist success is occasionally possible, and too often quite likely, it would normally be far more difficult for terrorists than many have suggested.

The demands on terrorists are often substantial, and a tailored approach to homeland security can make them greater. Let me be clear that there will always remain a substantial chance that a terrorist group can complete a nuclear plot if it obtains nuclear material, which is why material security and not proliferation should be such a high priority. But that chance of success, even if they do obtain materials, can and should be reduced.

You have asked me specifically to talk about deterrence. Deterrence is normally dismissed on the grounds that groups like al-Qaeda would be willing to mount nuclear attacks even if they were certain that they would be met with massive retaliation.

That is narrowly correct, but it misses several opportunities. First, al-Qaeda will be willing to initiate an attack and risk massive retaliation only if they believe that their chances of success outweigh the consequences of failure.

A foiled terrorist attack that also invites massive retaliation is the worst possible outcome for a terrorist group. That means that increasing the likelihood that a plot will fail, while promising retribution even for a failed nuclear attack plot, may be useful in deterring attacks themselves and is a smart Homeland Security strategy, and will make them less likely to initiate an attack in the first place. And making clear that even a failed plot will mean strong retaliation will strengthen this deterrent posture.

The United States should also take steps to deter other states from transferring nuclear weapons or materials to terrorist groups. States that would provide nuclear weapons to terrorists must be made to fear that such action will ultimately lead to American retaliation.

Getting to this point requires two elements. First, we need to have the technical ability to attribute nuclear weapons to state sponsors. We need to be able to do this if a plot is stopped in progress, and unfortunately we need the ability to do this even after a bomb has exploded.

That means expanding the existing research on forensic technologies at the national laboratories. That research builds on Cold War experience, where the United States inferred the details of Soviet nuclear weapons from the debris that came from Soviet nuclear testing.

There has been an atrophy in human capital associated with that, because nuclear tests haven't been done in the atmosphere for almost half-a-century. That capital needs to be revived, and thinking about what terrorist and rogue state designs may look like will also be necessary.

We also need to create a database of signatures so that materials can be matched to states where it was produced. Part of this work requires intelligence work, and part of this may be cooperative, and trade on the desire that states will have to exonerate themselves to make sure that they are not improperly implicated for an attack.

And to match that, we need a clear retaliatory policy. If a nuclear attack can be attributed to a particular state, what will our response be? Will it matter if the State was Russia, or Pakistan, or North Korea?

Will it matter if the weapon or the nuclear explosive material was transferred deliberately or if it was stolen? We need to ask those questions now, and to communicate a clear policy for deterrence to be effective.

Thank you very much and I look forward to your questions.

[The prepared statement of Mr. Levi follows:]



Prepared Statement of Michael A. Levi  
King's College Centre for Science and Security  
Department of War Studies, King's College London  
and  
Non-Resident Science Fellow  
Foreign Policy Studies, The Brookings Institution  
Before the Subcommittee on International Terrorism and Nonproliferation  
House Committee on International Relations  
"Averting Nuclear Terrorism"  
April 14, 2005

Chairman Royce, Congressman Sherman, distinguished members of the subcommittee, it is a privilege to speak with you today on this most important subject.<sup>1</sup>

Defeating nuclear terrorism requires a four-layered strategy. The number of states with nuclear weapons or nuclear explosive materials must be kept to a minimum. Any remaining weapons and materials must be secured to the highest standard possible. A homeland security system must be put in place to minimize the chance that terrorists can exploit residual gaps in security over weapons and materials. And a strategy for deterring terrorist groups and potential state sponsors from involving themselves in nuclear terrorism must be developed.

The first two of these elements receive the most attention, and should shoulder most of the defensive burden. But the final two – homeland security and deterrence – have, in the context of nuclear terrorism, been unfairly maligned and inappropriately neglected. While materials security and proliferation prevention are central and critical, I urge you to understand that these alone will not eliminate the nuclear terrorist threat. After a reassessment of that threat, and a discussion of the first two strategic components, I will present an analysis that challenges much conventional wisdom on the remaining tools and highlights important new opportunities.

I will outline a set of measures that would strengthen our efforts to stop the spread of nuclear weapons and to secure existing nuclear stocks. I will outline several potential shortfalls – and I will explain how new ways of thinking about homeland security and deterrence can begin to address these gaps. This will require a careful reassessment of the terrorist threat. It will also demand creative application of technology, and innovative policy and strategy.

#### The Misestimated Threat

While many terrorist groups may be motivated to execute attacks with nuclear weapons, those with the capability of implementing a plot are fortunately fewer.<sup>2</sup> Al Qaeda is the most obvious

---

<sup>1</sup> Much of my thinking described in this testimony has been developed through two collaborations, with Michael E. O'Hanlon of the Brookings Institution, on arms control regimes, and with Peter D. Zimmerman of King's College London, on defenses against nuclear terrorism.

<sup>2</sup> I will not address nuclear power plants or dirty bombs. For the former, see *Safety and Security of Commercial Spent Nuclear Fuel Storage* (Washington: NRC, 2005); for the latter, see Michael Levi and Henry Kelly, "Weapons of Mass Disruption", *Scientific American*, December 2002.

candidate with the motivation to mount an attack, and, in general, groups with apocalyptic or religious motivations are considered most likely to desire nuclear arms. In contrast, those with more limited political ends are normally assessed to be less likely to pursue nuclear terrorism.

The capability to mount an attack is harder, but far from impossible, to come by. Were a state to provide a nuclear weapon to a terrorist group, there would be little technical difficulty in delivering and detonating it. If terrorists were to steal an intact weapon from a state arsenal, they would need to circumvent its security systems, a difficult, but not impossible, task. In perhaps the most likely scenario, terrorists could steal nuclear materials and attempt to build a nuclear weapon themselves. But while success would be possible, and in a significant set of cases likely, achieving it would often be far more difficult than many have suggested. This is critical, because understanding the difficulties a terrorists face is the first step towards crafting a robust response.

Without entering sensitive territory, let me give you a flavor of what I mean:

1. To acquire the easiest-to-use nuclear materials, a terrorist group would require a sophisticated operation. Yet were a group to exploit certain more vulnerable theft targets, they would require considerably stronger technical skills to assemble a bomb.
2. In many if not most cases, advanced equipment or expertise would be needed to construct a weapon – a single Soviet scientist and simple off the shelf parts would not do.
3. The need to conceal a plot from intelligence and law enforcement would place pressures on any terrorist group, potentially forcing it to cut corners or become more sophisticated.

A group like Al Qaeda might well be able recruit the individuals needed to overcome these hurdles – but that effort itself may be vulnerable to detection. And none of this is meant to dismiss the possibility that terrorists might launch a successful attack. But it is far from certain that any particular attack would succeed. Moreover, the significant demands on a nuclear terrorist plot introduce vulnerabilities that a defense might exploit.

Mapping these details is essential. That will demand the sort of cooperation between technical and terrorism experts whose absence the Silberman-Robb Commission recently decried.

It is not useful to go beyond this basic assessment and suggest probabilities for various types of plots. We lack sufficient data to predict the future of nuclear terrorism, and I know of no well-grounded, quantitative assessment of the likelihood of an attack. All that can be said is that the probability of nuclear terrorism is not zero – and that it can be reduced. I turn to that now.

#### A Comprehensive Response

All nuclear plots require nuclear materials, either highly enriched uranium, or plutonium. The first and most powerful line of defense is thus to impose strict security over such materials, and over complete weapons.<sup>3</sup> But this conventional approach misses a third, dangerously neglected, dimension: How do we deal with situations where these tools fail? In such cases, terrorists may be able acquire nuclear materials or arms. Some have suggested that a properly implemented system of arms control and materials security can preclude such dangers. I disagree.

<sup>3</sup> An discussion of these strategic elements may be found in Michael A. Levi and Michael E. O'Hanlon, *The Future of Arms Control* (Washington, DC: Brookings Institution Press, 2005).

I will discuss below how to strengthen security over nuclear weapons and materials. I will then detail some new ideas on applying homeland security and deterrence to nuclear terrorism.

#### Securing Nuclear Weapons and Materials

Most states share the American desire to keep nuclear weapons and materials out of the hands of terrorists. Thus the United States can often cooperate in improving security over states' stockpiles. The flagship example of this is Russia, where Cooperative Threat Reduction (CTR) has improved security for truly massive amounts of vulnerable nuclear weapons and materials.

Yet many shortfalls persist. The security of much Russian nuclear material is at best ambiguous, and at worst inadequate. Insufficient funds have been made available to remedy that gap, but more fundamentally, political barriers in both the United States and Russia have slowed progress. Russia does not want terrorists to acquire a bomb, but it does not place the same priority on the problem as the United States does. For the United States to induce the behavior it needs from Russia, it will need to be flexible. This means aggressively seeking a solution to the current conflict over liability for those implementing CTR. It may also mean providing some level of reciprocation to induce Russia to grant necessary access to its weapons complex. None of this is meant to justify Russia's inadequate commitment to securing its nuclear weapons and materials – it is simply a recommendation that in the face of Russian intransigence, we should not become stubbornly entrenched, but rather remain focused on American priorities.

Beyond Russia, Pakistan presents perhaps the most pressing problem. We should extend CTR assistance to Pakistan, learning lessons from our experience in Russia. A few differences are worth noting. While the sort of transparency demanded of Russia should be a long-term goal, Pakistani secrecy should not be made a barrier in the short term – the problem is too urgent. Moreover, in implementing solutions in Pakistan, we should focus even more on nuclear-complex insiders than we have in Russia; as evidenced by the A.Q. Khan network, ideological sympathy for radical Islamic causes runs deep in the Pakistani weapons establishment.

Despite its great promise, it is important to acknowledge that CTR will not provide complete security over the world's existing nuclear weapons and materials. Some states will not want to cooperate, and others will cooperate only incompletely. Even if the United States makes preventing nuclear terrorism its first priority, it may not have the leverage to induce complete cooperation from Russia and Pakistan, among others. And even where materials security schemes are implemented, they will often not be foolproof. So long as nuclear materials are handled regularly, rather than physically sequestered, some potential for diversion will persist.

#### Preventing the Spread of Nuclear Arms

Whatever the limits of CTR, one can be reasonably hopeful that those states known to possess nuclear weapons will not intentionally transfer them to terrorists. Moreover, every state known to possess nuclear weapons has decades of experience in safeguarding nuclear materials, and in most cases in safeguarding nuclear arms. New nuclear states would be different. They would lack experience in securing their weapons. Some might also be inclined to deliberately transfer

weapons or materials to terrorists. Thus an important element of any strategy for preventing nuclear terrorism is an arms control strategy that stops the proliferation of nuclear arms.

Indeed, as Michael O'Hanlon and I argue in our book *The Future of Arms Control*, preventing nuclear terrorism must be a central organizing goal in shaping future American arms control efforts. Such a system should have three key components. First, it must ensure transparency, in order to enable early detection of dangerous proliferation developments. Second, it must maintain an environment where most states will not wish to seek nuclear weapons. And third, it must effectively harness coercive means of actively stopping states from acquiring nuclear arms.

Transparency is critical whatever one's preferred policy instrument. Diplomatic intervention early in a weapons program is more likely to succeed than efforts attempted at the crisis stage. At the same time, transparent violation of nonproliferation standards is more likely to invite broad international opposition, making economic sanctions and military options more feasible and more effective. To produce added transparency, all states should be required to adopt an Additional Protocol to the NPT, and states' ability to produce enriched uranium and separated plutonium should be severely curtailed. If most countries can be induced to accept these new standards, those that refuse should be presumed to be seeking nuclear arms.

Yet transparency will not in itself prevent proliferation. We require measures that induce states not to seek nuclear arms or to engage in other undesirable behavior. Only if we severely limit the number of problem cases this way can more coercive approaches be effective. Multilateral initiatives, whether formal or informal, help produce needed cooperation – for example, if a regime that restricts states' ability to produce nuclear materials can be designed with broad input, it is less likely to be extensively rejected. More fundamentally, the United States should extend cooperative security relationships with democratic and peaceful states that forswear nuclear arms. By providing an alternative way to ensure states' security, these relationships would undercut motivations to seek nuclear arms. In difficult cases involving non-democratic states, carefully curtailed and conditioned security arrangements may be necessary and appropriate.

No system, though, can depend on voluntary compliance alone – possible recourse to coercive tools must be accepted and integrated into the regime. Though I will not expand on this in great detail here, I note three points. First, the United States improves its effectiveness in this area when it can work together with other powerful states, especially in applying economic sanctions. Second, such cooperation is most likely when criteria for coercive action are discussed and negotiated in advance of a crisis, rather than dictated by a single state. Third, a united front with clear criteria for intervention is more likely to deter undesirable behavior before any coercive action must be taken. None of this is to preclude unilateral action if and when it is truly necessary – it is simply to emphasize the utility of cooperative efforts in most cases.

Ultimately, though, we must accept that the full complement of cooperative and coercive tools may not succeed in preventing all proliferation. Indeed, it would not be unreasonable to judge that North Korea will retain nuclear weapons for many years in the future. Such shortfalls will result in further gaps that terrorists might exploit. There is thus a need for measures that go beyond cooperative threat reduction and beyond arms control for averting nuclear terrorism.

### Defense in Depth: The Neglected Dimensions

Securing nuclear materials, and preventing the spread of nuclear arms, are the most critical components of a strategy for averting nuclear terrorism. But they are marked by persistent shortcomings. I now want to suggest some ideas for how these residual gaps might be addressed.

#### Homeland Security

If terrorists acquire nuclear material through theft or through insider assistance, they must still build a nuclear weapon and transport it to its target to complete a successful attack. Most analysts have insisted that this is a trivial undertaking, at least when compared with the difficulty of acquiring nuclear material in the first place; as a result, they have concluded that most measures aimed at stopping terrorists at this stage are futile. These are flawed judgments.

Building and transporting a bomb can be considerably more difficult than most assume, and there are many opportunities for plot-ending errors and for discovery by intelligence or law enforcement.<sup>4</sup> International intelligence cooperation can be critical in putting together signs of a plot that might be distributed through several countries. International cooperation to control sensitive non-nuclear materials and equipment can also put pressure on terrorist plots.

Equally important, terrorists, like all others, make mistakes. In preventing crimes, police frequently exploit criminals' foolish errors – indeed, they prepare for just such occurrences. Most thinking about defense against nuclear terrorism, however, has focused on scenarios involving “perfect” terrorist plots. A smart strategy would attempt to induce and anticipate terrorist errors, and would be prepared to capitalize on them.

A defense need not be perfect, or even near-perfect, to appreciably reduce the probability of a successful nuclear terrorist attack. The popular belief that terrorist groups like al Qaeda cannot be deterred is only half true. Observers are right to estimate that a group like al Qaeda would be willing to endure severe retribution following a successful nuclear attack, undermining a basic tenet of deterrence. But such a group would not be willing to endure severe retribution following a *failed* nuclear plot. Thus increasing the likelihood that a plot will fail, while promising retribution even for *failed* nuclear plots, may be useful in deterring attacks themselves.

#### Deterring State Transfers of Nuclear Arms

The promise of deterrence does not end there. Were a state to transfer a nuclear weapon to a terrorist group, the opportunities for interdiction would be considerably fewer than were terrorists to steal nuclear materials and attempt to build a bomb themselves. It may be possible, though, to deter states themselves from transferring nuclear arms to terrorists.<sup>5</sup> Many have argued that states could transfer weapons to terrorists without fear of detection, and could thus escape possible retaliation, gutting the core of deterrence. Yet such anonymity is far from

<sup>4</sup> I would be pleased to expand on these observations in more detail in private.

<sup>5</sup> Michael Levi, “Deterring Nuclear Terrorism”, *Issues in Science and Technology*, Spring 2004.

guaranteed. Moreover, appropriate investment in technology can make detection more likely, while proper policy can leverage that technology to strengthen deterrence.

To deter states from passing nuclear weapons or materials to terrorists, we must have the capability to attribute nuclear weapons to their states of origin. The United States already has significant capabilities in this area as a legacy of its Cold War intelligence activities. The United States inferred details of Soviet nuclear weapons by analyzing debris produced by Soviet nuclear tests, and similar techniques could be adapted to determine the origin of a nuclear weapon following a nuclear terrorist attack, and hence to target a retaliatory response. (This may seem like little consolation, but the purpose would of course be to deter such attacks in the first place.) Several advances are necessary, however. First, the human capital involved in analyzing weapon debris has atrophied since the Limited Test Ban Treaty removed testing debris from the atmosphere; an effort to bolster such capabilities is necessary, and would not require nuclear testing. Second, an understanding of weapons that might figure in terrorist scenarios, rather than in Soviet designs, must be developed. Third, and most challengingly, a set of “fingerprints” for nuclear weapons and materials in various states must be developed in order to match terrorist weapons to state stockpiles. Some of this may be possible through traditional intelligence. Most likely, however, an international organization with privileged access to states’ nuclear complexes – possibly the IAEA – will have to play a role. It should be in the interest of most states to divulge basic information, if only to rule themselves out as originators of terrorist nuclear arms.

Strategy is as important as technology. The United States needs to determine what consequences would follow terrorist attacks, and to communicate these to would-be state sponsors. In some cases, the response would be clear – North Korea, for example, would meet massive retaliation were it to provide a nuclear weapon to a terrorist group. But other cases would be harder. Were a Russian nuclear weapon acquired by terrorists, the United States would be unlikely to strike back. I would suggest that no one knows what steps the United States would take were terrorists to acquire a Pakistani bomb. Would the United States attack its ally? Would it matter whether the bomb was stolen, or provided deliberately? The United States needs to answer these questions *now*, and make its retaliatory policy clear. Clarity would go a long way towards deterring transfers of nuclear weapons, ensuring actual retaliation would never be necessary.

#### Conclusions

There is no magic bullet for preventing nuclear terrorism. Our most powerful tools are cooperative threat reduction, which we can use to secure existing weapons and materials, and nonproliferation, which we can use to prevent new states from acquiring nuclear arms. These should receive the bulk of our focus. But they are fallible. They should not be the entire extent of our strategy, which must create defense in depth. An effort that harnesses intelligence, law enforcement, and border security, working together to promote and capitalize on terrorist error, would provide an extra layer of security against nuclear attack. And a carefully crafted deterrent posture can reduce the risk that states will transfer nuclear weapons to terrorist groups. Maximizing the effectiveness of each of these four elements demands technical and policy innovation, and will require international cooperation. All are worthy objectives.

Thank you.

Mr. ROYCE. Thank you, Mr. Levi. I will go first to Mr. Woolsey and ask about a hearing on the Senate side that we had a little over a month ago. CIA Director Porter Goss said in this hearing that it may be only a matter of time before al-Qaeda or another group attempts to use chemical, biological, radiological, and nuclear weapons.

And at that same hearing, Admiral James Loy, who is the Deputy Secretary of Homeland Security, said that several al-Qaeda

leaders believe operatives can pay their way into the country through our sub-borders, and also believe that illegal entry is more advantageous than legal entry for operational security reasons.

We have some experience in Southern California dealing with a particularly brutal organization, MS-13, that is in the business of smuggling; how worried should we be about our borders given some of these reports?

Mr. WOOLSEY. I think quite concerned, Mr. Chairman. We have two very long borders with our two neighbors, Mexico and Canada. They are very easy to cross, and there is an economic incentive on the southern border for “coyotes” and others to bring illegal workers in.

Of course, the vast majority of people who come are good, decent human beings looking for work. But there are now too many stories of people being taught a little bit of Spanish, even if their native language is Arabic, and being brought illegally across the border and the like.

I think for any of us to rest very comfortably—and I have some sympathy for those in the Executive Branch who have tried to make this work with very little to work with and without a great deal of money—we just have to have a system which makes it possible for people to find work. Those whom the Government wants to come to find work should be identified, and those who are potential terrorists should be excluded. I think this is one of the most troubling and dangerous aspects of our vulnerabilities.

Mr. ROYCE. Thank you, Mr. Woolsey. I want to ask Ms. Holgate, your organization has called for the creation of a White House position to coordinate all non-proliferation programs, how does this help? And if you could share with us some examples of specific shortcomings that this position might fix.

Ms. HOLLGATE. Well, we have actually been calling for that, and the main reason we have called for that has to do with the need for true Presidential awareness and interaction with this issue on a daily basis.

At the moment, the current coordination processes tend to be happening at a fairly low political level, and my concern is not so much that we have overlap or duplication of effort. My concern is that we are lacking a comprehensive prioritized argument that explains how our programs are connected with our policies.

The U.S. Government does a pretty good job of getting the policies coordinated. You can disagree with their substance, but they tend to be well-coordinated. It is the programmatic connection to those policies, and prioritization among them, and the ability to trade off resources from one agency to the next to represent those priorities, and to make sure that the number one mission has all the money it needs to do its job.

So I would say resource reallocation amongst agencies, political and programmatic accountability all the way down through from Cabinet officials through to the guy on the ground is what we lack.

And I would also say a common voice in explaining these programs. As you know, the jurisdiction for these programs is spread across many agencies and all over Congress. Getting a comprehensive look at what the Government is trying to do and how successful they are in doing that is one of these missed opportunities.

Now, that will require kind of a special role for someone in this position, because they probably should be someone on the National Security Council, but they also want to be accountable to Congress.

One way to think about this is the dual-hatted nature of the Office of Science and Technology, and Office of Policy, and a Science Advisor. I am not suggesting that structure is the one to do it, but it gives you a way to look at it, and where an individual can play those two roles simultaneously with the different hat at different moments.

The ability to speak to Congress with a single voice that explains the relationships, interconnections, and prioritization of these programs, I think, is a big missing piece that we have today.

Mr. ROYCE. Well, thank you, and speaking of that prioritization, and where that prioritization is in our conduct of foreign policy, Dr. Cohen, you have had an opportunity to monitor some of the reports on the discussions between President Bush and President Putin, and I was going to ask you in terms of prioritization, where does this type of terrorism fit in? Is it at the top of the agenda and what would be the tradeoffs if the United States were to make preventing nuclear terrorism its primary policy goal for Russia today? Would this make a difference?

Mr. COHEN. Sir, I think it is already close to the top of the agenda. I think that this is one area that the self-preservation instinct of both the Russians and the Americans can generate a certain amount of cooperation.

The intelligence community of both countries are talking to each other since the operation in Afghanistan. We got cooperation from Russia that was unprecedented in facilitating the liberation of Afghanistan.

Having said that, after Afghanistan, the assessments of two countries in terms of what constitutes the War on Terror have diverged. The Russians are saying that their warfare is Chechnya, and we were saying that our War on Terror was Iraq. The Russians didn't agree.

We need to bring and attempt to bring our threat assessments closer together, and as long as we have a very varied threat assessment, we will not be able to generate joint operational activity.

Mr. ROYCE. But the one interesting part about your report was your connection with Hezbollah and what it is doing in Russia, and that is the same problem that we are facing. But I would just like to go now to Mr. Sherman, and then we will come back later.

Mr. SHERMAN. Thank you, Mr. Chairman. I will have to go off to another hearing that is taking place at the same time. In my opening statement, I drew the distinction between a dirty bomb on the one hand and a thermal nuclear weapon on the other.

I want to indicate that any explosive nuclear device belongs in that first category, and in contrast to a dirty bomb, whose major effect, I think, would be the terror that it would cause.

Terror would result because we have done nothing to educate the American people as to the difference between a dirty bomb on the one hand a nuclear explosive device on the other. We have a policy of just not talking about anything that is unpleasant.

Mr. Cohen, I note in your comments that Russian leaders have not regarded the United States as pro-Russia, and it would be re-



markable and disastrous if we were to end up losing an American city because we felt that we had to have our hands in places like Turkistan and take hostile positions to Russia and places like Chechnya.

These are places which none of my constituents had ever heard of a decade ago and were able to lead remarkably happy lives without focusing on them, and to say that Americanism must be injected everywhere simultaneously and immediately can only be humorous as an extreme. And I would hope that we would recognize that Russia is a critically important country and a country entitled to, if not a sphere of influence, at least a geographical area of concern.

Mr. Woolsey, thank you for pointing out the importance of governmental continuities. It would trouble you to know that if all of Washington is destroyed that we don't have a President.

We have got a long line of succession, but we have got no one who lives outside of Washington. Senator Gore and I have a bill that I would commend to my colleagues to at least add the five top U.S. Ambassadors at the end of the line of succession.

In addition, it might trouble you to know that under many circumstances we could have two claimants to the Presidency, and in fact it would take only three bullets to achieve that.

The fact that we would ignore such a problem, and I have been working on it for 5 years, perhaps your voice could be added to others in explaining that it is kind of silly to erect all these jersey barriers out there around the Capitol and not bother to do our work inside the Capitol to make our Government as terror-proof as possible.

Ms. Holgate, you indicated that we don't need another clarion call. We have got a bunch of those. You have talked about some minute changes in the structure of the Executive Branch, and of course you will not be the first one to come before Congress and say that the area that you are most concerned about deserves additional appropriations.

Other than more money and the special office in the White House that you talked about, what can America do to reduce this risk? Don't tell me about how terrible a risk it is, or what the risk is.

Just if you could do one thing, and we will give you a couple of Army divisions, and a few million dollars, what would you do?

Ms. HOLGATE. Well, as capable as the Army is, I am not sure that they are the appropriate human resources for the challenge.

Mr. SHERMAN. Whatever. The genie is here, but you only get one wish. What is it?

Ms. HOLGATE. Words and deeds that match. The deeds I would call for, though, would focus really on the materials, the nuclear materials issues. Taking seriously what my co-panelist here has said about even if you locked it down perfectly, you would still have a risk, and that is true.

But today we are not even close to perfect. We have—

Mr. SHERMAN. So you are talking about actually implementing Nunn-Lugar?

Ms. HOLGATE. Yes, and broadening it, and accelerating it, and bringing others into the mission. This has got to be a global mis-

sion. There are places for the reasons that you have sort of just pointed out that the United States is not a welcome partner. We need to get our colleagues around the globe, especially Russia, to work in places where it is hard for us to interact.

And to use their resources, their technology, their people, their diplomatic and political relationships to accomplish this goal soon.

Mr. SHERMAN. Dr. Cohen, I will ask you pretty much the same question, but I know that we would need another hearing to discuss United States Russian policy, and how to win over the Russian elites and the Russian people.

But putting aside having a be nice to Moscow day, and I don't want to be flippant about it, but putting aside making changes in our policy and stance that would make us viewed at least a "nine" by Russia, what specific things should we do?

Mr. COHEN. If I may, just on the point of us being denied or not being denied. I don't think it is our actions only. I mean, some policies may be interpreted as anti-Russian, but the depth of anti-Americanism is so deep because some of these believed their own propaganda during the Cold War, and to some extent, to a smaller extent, there is a deep-seeded anti-Russian sentiment in some circles in this town.

Two, back to your question, I think that some of the issues that you addressed are radical improvements in our human intelligence capability of penetrating terrorist organizations.

If a 20 year-old from California could have been recruited into al-Qaeda, why CIA operatives, to the best of my knowledge, were not, or CIA agents were not. We need to penetrate these people from the inside. We need to know their intentions, as well as their capabilities, and we need to neutralize them to the best of our ability.

Mr. SHERMAN. I have got to assume that if a guy is known to al-Qaeda to have grown up as Jack Smith, a Christian, from California, that that person is not going to be admitted into the top circles of al-Qaeda, and that is why I will turn to Mr. Woolsey and say we have got people who could pass.

We have got people who have spent the first 20, or 30, or 40 years of their lives in Yemen, in Saudi Arabia, in Egypt, in Iran. You used to work with a rather big organization involved in the collection of intelligence. Are they hiring any of these folks, or do you need a Bachelors from Dartmouth to get a job?

Mr. WOOLSEY. They are, I believe, hiring some, Congressman Sherman, and it is a very good point.

Mr. SHERMAN. I mean, the agency comes and complains that we can't get translators. I assure you that I have got more translators in my district—

Mr. ROYCE. I will let Mr. Woolsey finish this question, and then go to Ms. McCollum.

Mr. WOOLSEY. Let me speak to the translator issue, Congressman Sherman, because it is a good point. Right after the 1993 bombing of the World Trade Center, the people in the directorates of intelligence and operations came to me and said that we are woefully inadequate in Farsi speakers and Arabic speakers.

We put a slug of money, several million dollars, in the budget. For 2 years, I could not get that through the Senate Select Com-

mittee on Intelligence. The House Committees were quite supportive. The Senate Appropriations Committee was supportive.

Bluntly, Senator DeConcini, the Chairman of the Senate Select Committee, would not let that money go through. So although it is a matter of great importance, some of these things are things that professionals in the intelligence community tried to make happen, and we would get turned down either by budgeteers in OMB, or on the Senate side. Usually, we did much better on the House side, frankly.

But you are absolutely right on the underlying need for more people who don't look like younger versions of me, Oklahoma WASPS, who speak a little bit of Arabic. We need people who are able to operate in that part of the world, and effectively. It is one of the great blessings of being a nation of immigrants, that we can have people from all sorts of different ethnic and racial backgrounds that are loyal Americans and are not only willing to, but equally want to, work even in very dangerous circumstances for the U.S. Government.

I think the point is very well taken. It is something that the intelligence community has worked on sporadically in the past. It is time for everybody in the Executive Branch and Congress to pull together to figure out ways in which we can have a substantial number of people from different parts of the world serve in the intelligence community.

Mr. ROYCE. Ms. McCollum, and then we will go to Mr. Schiff.

Ms. MCCOLLUM. Thank you. I have something and I will phrase it as a comment to keep it shorter. I am concerned, and Ms. Holgate alluded to it, that we need to expand our nuclear collection program. There were peacetime uses of nuclear material that have been pretty much abandoned and nobody is watching what is going on.

A few of our allies are very concerned about that, and yet there is a very limited amount of funds going into that. But having said that, and realizing that we have wonderful people here with us with specialized emphasis on nuclear, and that my understanding is that although a nuclear dirty bomb would be devastating, and there is no doubt about it, and I am not undermining the fact that it would be a tragic thing to have happen, the biggest problem I would allege could very well be in the cleanup. In other words, you can coordinate off an area and clean it up, but that the real human capacity problem would be if everybody showed up at the same emergency ward all at once, versus what could happen, and how quickly a biological weapon being used could be transmitted and moved through the country.

And knowing that we have to work on both, I will just leave my comments there, and you probably want to maybe speak to the first half of what I had and not so much the second half, realizing that is your specialty. And I am not downgrading anything, but sometimes we talk about nuclear dirty bombs, and I don't think people fully understand what is going to happen. I think they think they are going to see a mushroom cloud rather than see a horrific pollution that would be just spectacular.

Ms. HOLGATE. Well, I will toss to Michael in a moment on the dirty bomb issue, but the nuclear bomb is—I mean, you are talking pollution well beyond a dirty bomb.

Ms. MCCOLLUM. That is correct.

Ms. HOLGATE. So the distinction is not just in lives, but also in the scope of damage, and you are absolutely right. Whether it is a dirty bomb—where the biggest problem is contamination—or whether it is a nuclear bomb—where you have massive contamination, plus massive loss of life—we are not prepared in a civil defense context to deal with that.

What is fascinating is that many of the same things that we might do to prepare our public health system to deal with these kinds of crises are the same kinds of things that you might want to do to prepare for a bio attack of the nature that you mentioned.

So on the preparation side, there is a lot that can be done, but when you are talking about an actual Hiroshima-type device, the prevention side is really the only answer, because by the time that you are dealing with the end point of that, that is a hopeless point to be. I don't know if Michael wants to add to that.

Mr. LEVI. Let me pick up on the dirty bomb part just a little bit. Actually, there are three things that are needed. And Ms. Holgate was absolutely right to frame this in a completely different class. It is certainly a lower tier threat.

The first is to prepare people. And Congressman Sherman made this comment before that, well, here are some things that we are not supposed to talk about in public because they are too scary. I think most people don't find them really too scary.

I was involved in a PBS documentary on dirty bombs a couple of years ago, and the morning after it ran, I got two sets of e-mails and phone calls. The first was from other experts, and they all said, "What are you doing? You are terrifying everyone."

Others were from friends and family, and they said I feel so much better having seen that, and I feel so much safer, now that I am less worried, and I know what is going on. I think it is important to think that people are not stupid, and not to think that they just go running around terrified. Information on this needs to be done on a large scale, and that needs to be improved.

And we also need to have emergency rules and things like that prepared. Let me also point one more thing out. There is an intermediate zone. Some of the simplest nuclear bomb designs are indeed the kinds of things where afterwards you sort of throw your hands up and say, "I can't really do anything to mitigate this."

But there are modes where the technology is not quite right, and the material is not quite right, and where a nuclear blast is still devastating, but it is, let us say, a thousand times smaller. Now, that is still terrible, but it is the kind of thing where emergency response could actually be useful.

I don't know of any study inside or outside of government that has seriously considered what we should do in detail when something like that happens.

Ms. MCCOLLUM. Mr. Chair, we are woefully inadequate in emergency response to both biological and nuclear. I thank the panel.

Mr. ROYCE. Thank you, Ms. McCollum. We are going to go to Mr. Schiff.

Mr. SCHIFF. Mr. Chairman, I wanted to, at the outset, thank our witnesses for all the work in this area, and I want to thank you, Mr. Chairman, for calling this hearing. Considering this is a threat, both the President and Senator Kerry acknowledged it was the number one threat facing the country, and this hearing is long overdue and extremely important.

I also wanted to ask the Chairman to consider having a hearing on a bill that Chris Shays and I introduced some time ago, the Omnibus Nonproliferation and Anti-Nuclear Terrorism Act of 2005. We sampled a lot of your colleagues and some of you here on the panel to try to get the best ideas about how we could comprehensibly deal with this threat.

A lot of what you talked about today is contained within a bill and we would love an oversight hearing on the bill or a potential markup. And in particular, Ms. Holgate, I want to thank you for all your input and being a sounding board for us in a lot of the ideas that we were bouncing back and forth.

I have just a couple of questions, or actually I have a million questions that I wanted to ask you before I have to run off and vote. Mr. Woolsey, if a bomb went off tomorrow in Washington, DC, a nuclear bomb went off tomorrow, who would be your lead suspect?

Mr. WOOLSEY. I suppose it would be al-Qaeda, with an uncertainty about the source of the weapon. The two most likely ones now, I would think, would be first of all a smuggled and paid-for old Soviet suitcase nuke, or possibly already something from North Korea.

If the North Koreans have only two or three weapons, they probably would not start selling yet. But if they have half-a-dozen or more, and some scenarios suggest that they could conceivably have more than that now, they might well sell one. Their main exports today are heroin, counterfeit currency, and ballistic missiles, and there is no reason why they wouldn't sell fissile material.

Mr. SCHIFF. And your conclusion is exactly the same that I reached, and that means that we are either both right or we are both wrong. But I want to ask you a little bit where that conclusion leads. I think the number one suspect would be al-Qaeda. The only question might be who helped them, whether it was North Korea or someone else.

But I think if you ask the American people that question that they might say North Korea would be the culprit, or Iran would be the culprit, and there seems to be a lack of appreciation for the fact that al-Qaeda is the number one nuclear threat.

And I think that if that is an accurate conclusion, then that ought to lead to some consequences in terms of our allocation of resources. If that is the most likely threat, then it calls into question why we spend far more, for example, on national missile defense than we do on the more immediate threat of nuclear terrorism, vis-a-vis, al-Qaeda.

Let me ask one other question because I think that is all the time we have, but next month we have the review of the NPT. I really think that this is an incredible opportunity for us to lead, and nobody else can lead in our absence, and in fact the absence

of our leadership is going to be generated to a discussion of why Israel has a bomb and other things like that.

The bargain of the NPT that served us well for decades is breaking down. I don't think we can allow countries to develop a fuel cycle and be all confident that we can prohibit them from getting a bomb. What should the United States be trying to achieve for the NPT review?

Ms. HOLGATE. I will jump in. I think because of where we are in the preparation for that, and the lack of leadership that has been proposed so far in the U.S. Government, our expectations have to be very modest.

Right now the Government policy appears to be damage limitation. That is obviously not the right answer, but we are not going to be able to have the full scale solutions to the fuel cycle challenges that you mentioned with just a month before that begins, or less than that.

There is a modest proposal I think that is achievable, however, and that is some kind of a reference in the materials to the need to get highly enriched uranium out of commercial use.

It is now used as you well know in research reactors, and in power plants, and isotope production, and all kinds of legitimate things around the world, but for many of those things other substitutes are available, and in many others, they simply need to be shut down and alternatives developed on a much faster time frame.

But to get that notion of a global norm against highly enriched uranium in commerce I think would be an achievable and a huge benefit. That would allow the IAEA to cease what it is doing now. It has to fund highly enriched uranium research reactors when countries ask for it.

This just happened in Nigeria with a Chinese-supplied reactor. The current attitude is, "It is peaceful, and it is safeguarded, and it must be okay." We have got to change the underpinnings that allow that to happen.

Mr. LEVI. Let me pick up the review conference issue. I think that leads separately into two things. The first is what do we need to do about the NPT, and the second is what do we do about the NPT review conference.

I tend to have some substantial problems with the Administration's approach to NPT, but I do think that they are fundamentally right in adopting a damage limitation strategy for the review conference.

You don't make breakthroughs at a review conference, but you solidify what you have done. And the failure of leadership is a failure to do this, getting the proposals there that can be finalized at the conference.

Mr. ROYCE. We have less than a minute to the vote, and so I am going to adjourn this Committee, but not before thanking our distinguished panelists for making the trip here to Washington, DC to testify today, and we appreciate it very much. We stand adjourned.

[Whereupon, at 3:17 p.m., the Subcommittee meeting was adjourned.]