

[H.A.S.C. No. 111-2]

**PREVENTING WEAPONS OF MASS  
DESTRUCTION PROLIFERATION  
AND TERRORISM**

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HEARING

BEFORE THE

FULL COMMITTEE

OF THE

COMMITTEE ON ARMED SERVICES  
HOUSE OF REPRESENTATIVES

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

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HEARING HELD  
JANUARY 22, 2009



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# CONTENTS

## CHRONOLOGICAL LIST OF HEARINGS

2009

	Page
HEARING:	
Thursday, January 22, 2009, Preventing Weapons of Mass Destruction Proliferation and Terrorism .....	1
APPENDIX:	
Thursday, January 22, 2009 .....	51

### THURSDAY, JANUARY 22, 2009

#### PREVENTING WEAPONS OF MASS DESTRUCTION PROLIFERATION AND TERRORISM

##### STATEMENTS PRESENTED BY MEMBERS OF CONGRESS

McHugh, Hon. John M., a Representative from New York, Ranking Member, Committee on Armed Services .....	2
Ortiz, Hon. Solomon P., a Representative from Texas, Committee on Armed Services .....	1

##### WITNESSES

Allison, Dr. Graham, Commissioner, Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism .....	8
Graham, Hon. Bob, Chairman, Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism .....	4
Talent, Hon. James, Vice Chairman, Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism .....	6

##### APPENDIX

###### PREPARED STATEMENTS:

Graham, Hon. Bob, joint with Hon. James Talent and Dr. Graham Allison .....	57
Skelton, Hon. Ike, a Representative from Missouri, Chairman, Committee on Armed Services .....	55

###### DOCUMENTS SUBMITTED FOR THE RECORD:

[There were no Documents submitted.]

###### WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING:

[There were no Questions submitted during the hearing.]

###### QUESTIONS SUBMITTED BY MEMBERS POST HEARING:

Mr. Forbes .....	73
Ms. Shea-Porter .....	75
Mr. Wilson .....	74



**PREVENTING WEAPONS OF MASS DESTRUCTION  
PROLIFERATION AND TERRORISM**

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HOUSE OF REPRESENTATIVES,  
COMMITTEE ON ARMED SERVICES,  
*Washington, DC, Thursday, January 22, 2009.*

The committee met, pursuant to call, at 10:05 a.m., in room 2118, Rayburn House Office Building, Hon. Solomon Ortiz presiding.

**OPENING STATEMENT OF HON. SOLOMON P. ORTIZ, A REPRESENTATIVE FROM TEXAS, COMMITTEE ON ARMED SERVICES**

Mr. ORTIZ. Good morning. Welcome to this hearing this morning.

And the statement that I am about to read will be entered for the record. Chairman Skelton is a little under the weather, and he couldn't be here. But I want to welcome our witnesses and all our old committee members and new committee members to this great committee.

"Good morning. I would like to start by welcoming my colleague, Representative John McHugh from New York, to his first hearing as ranking member of this committee."

Congratulations, sir.

"I would also like to extend a warm welcome to Senators Bob Graham and Jim Talent," a former member of this committee—James, so good to see you, and welcome to this committee—"and to Dr. Graham Allison."

Thank you, sir.

"Thank you all for being here today and for your hard work on the Commission dealing with the prevention of weapons of mass destruction (WMD) proliferation and terrorism.

"This committee was instrumental in the creation of the Commission in the 9/11 bill, and the Commission's recent report could not be more timely. This committee authorizes the bulk of key U.S. nonproliferation programs, and our Subcommittee on Terrorism and Unconventional Threats, chaired by Adam Smith, also looks broadly at issues of terrorism and counter-proliferation. We will begin the annual process of reviewing these programs when the budget is released this spring.

"The risks associated with the proliferation of WMD, particularly the risk that such weapons could fall into terrorist hands, are some of the gravest threats facing our country. Since the end of the Cold War, the world has experienced a new era of proliferation.

"In the last eight years alone, North Korea has tested a nuclear weapon and expanded its nuclear arsenal; Iran has rapidly developed capabilities that may enable it to build nuclear weapons; au-

thorities uncovered a far-reaching nuclear nonproliferation network run by Dr. A.Q. Khan of Pakistan; nuclear arms rivalries have intensified in Asia and the Middle East; changes in civil nuclear power programs have challenged the nonproliferation regime; the spread of biotechnology has increased the availability of pathogens and technologies for sinister purposes; and dangerous chemical, nuclear, radiological, and biological materials have remained poorly secured throughout the world.

“At the same time, terrorism has spread around the globe, and Pakistan has experienced rapid political change and internal economic and security challenges while terrorist safe havens have grown in its border areas.

“Yet, United States policy and strategy have not kept pace with the growing risks associated with WMD proliferation and terrorism and have failed to fully address the serious WMD concerns raised by the 9/11 Commission. Nonproliferation and threat reduction programs and activities have been under-resourced and remain too narrow in scope; engagement with other countries and international regimes on WMD threats has been insufficient; and the interagency process has lacked the leadership, coordination, flexibility, and innovation necessary to effectively address these threats. This must change.

“This committee has already taken a number of important steps on United States nonproliferation and threat reduction programs that have moved these programs in the right direction. However, there are additional opportunities to address WMD threats.

“The United States must do what we can to secure and reduce WMD and vulnerable WMD-usable material around the world, and to reduce the risk that such dangerous weapons and material could ever fall into terrorist hands. However, while we must do more, the fact remains that we inevitably will be required to make difficult assessments of risk in order to prioritize our efforts. I look forward to the Commission’s recommendations in this regard.”

[The prepared statement of Mr. Skelton can be found in the Appendix on page 55.]

Mr. ORTIZ. And now let me yield to my good friend, the ranking member of this committee, Mr. John McHugh.

**STATEMENT OF HON. JOHN M. MCHUGH, A REPRESENTATIVE FROM NEW YORK, RANKING MEMBER, COMMITTEE ON ARMED SERVICES**

Mr. MCHUGH. Thank you very much, my good friend Solomon Ortiz.

And although the words he read were from the chairman of the full committee, I know he wishes me his personal best as well.

Do you not?

The record will show he does. I will need that later in the year.

But, Mr. Chairman, I have a very extensive statement. And simply because this is a very, very important issue, I would ask unanimous consent that that formal written statement be entered in its entirety in the record. And let me just try to summarize a bit.

First of all, in spite of his absence here today, obviously we wish Chairman Skelton a quick and speedy recovery from what I understand is hopefully a relatively minor but very bothersome affliction.

But nevertheless, we all owe him a great deal of gratitude for calling this hearing and providing what I think is an important forum for an incredibly important issue.

And, in that regard, I want to join with my good friend, Mr. Ortiz, in wishing our words of thanks and welcome to our panelists here today, two of whom are what we still fondly look at as congressional colleagues, Senator Graham and, of course, my good friend and former House member, Jim Talent.

And, Dr. Allison, thank you, as well, for being here and for placing your considerable talents and your intellect against what is one of the most pressing issues this Nation faces.

As my good friend from Texas, Mr. Ortiz, noted, this is a timely hearing. Recent U.S. sanctions placed on individuals and private companies from Europe and Asia who were involved in the A.Q. Khan nuclear proliferation network should remind us all of the willful intent of actors around the world to proliferate WMD capability.

We learned on September 11th there is a clear and dangerous, frightening nexus between WMD proliferation and terrorism. As I said, this is not new. For the last seven to eight years, we have known the harsh reality that Al Qaeda seeks weapons of mass destruction to inflict the maximum amount of human suffering, geopolitical disorder, and economic damage.

We have remained unyielding in our efforts to prevent Al Qaeda from planning and executing a successful attack in the United States. However, this statement is not made without caution. Despite our best efforts, I concur with the Commission that, as they put it, our margin of safety is shrinking, not growing.

This week, we mark a new Administration. As such, we all have a new opportunity to work in a bipartisan fashion to develop a comprehensive and, I hope, concrete strategy to ensure we have a diverse set of tools to counter WMD threats. This strategy must include nonproliferation efforts but also look more broadly at all other efforts—technology investments, missile defenses, emergency response capabilities, and interagency and international coordination efforts—that could prevent and limit the damage caused by WMD proliferation and terrorism.

This Commission's reports serve as a foundation for this approach. There are many issues that lie before us—Russia's recent actions; the miscalculations that could trigger a nuclear confrontation between Pakistan and India; Iran; North Korea—the kinds of things that face us each and every day and must be confronted in new and material ways.

Before concluding, I want to mention another congressional commission, the United States Strategic Commission established by this committee. They are examining our strategic posture. Their recent interim report was issued in December and highlighted the need to maintain a secure, reliable deterrence force for the foreseeable future, but also design a nuclear program that contributes to decreasing the global dangers of proliferation.

I see a natural complement to these two bodies, our distinguished panel here today and that of the U.S. Strategic Commission. Work could be instrumental in bringing together a bifurcated approach, as it has been in the past, for a better path to the future.

And, gentlemen, Dr. Allison, I would be interested in your thoughts on this possible eventuality.

Again, I commend you and your fellow commissioners and staff on your work to address these complex issues.

And, Mr. Chairman, with that, I yield back.

Mr. ORTIZ. Thank you, sir.

We are very honored to have three distinguished witnesses before this committee today, and they have done a great job. And I hope we can learn a lot from you today.

And I guess this morning we will start with you, Senator Graham. Thank you so much, sir, for the work that you have done, you and your members of your committee and members of your staff. So we will begin with your statement whenever you are ready, sir.

**STATEMENT OF HON. BOB GRAHAM, CHAIRMAN, COMMISSION  
ON THE PREVENTION OF WEAPONS OF MASS DESTRUCTION  
PROLIFERATION AND TERRORISM**

Mr. GRAHAM. Thank you very much, Mr. Chairman, Congressman McHugh, and the other outstanding, distinguished members of this committee.

I would like to introduce one other person, who is the executive director of our Commission and led us with great intelligence and occasionally discipline when required, Ms. Evelyn Farkas.

Mr. ORTIZ. Welcome.

Mr. GRAHAM. I am accompanied today, as you have said, by my good friend and a person who, frankly, I did not know well during our period of service in the Senate but have now come to appreciate his intelligence and dedication to the security of this Nation. And I know that much of his wisdom came from his service on this committee.

And then Graham Allison, who is a true national treasure. I doubt that there are more people than the fingers on one hand who know as much about this subject as does Graham Allison. And he was a tremendous contributor to our Commission.

Mr. Chairman and members, you created this Commission, and we appreciate the opportunity that you have given us to serve. Our charge was to assess our current policies as they relate to the proliferation of weapons of mass destruction and terrorism and then to make recommendations as to how we thought we could further secure our Nation. You gave us six months to accomplish this significant task.

I am pleased to report that our bipartisan Commission, appointed by the leadership of the Congress, was unanimous in the recommendations that we will be submitting to you today. Our full report is available in book form, and I notice you have those at your desk. And I hope that you will have an opportunity to read further of our analysis and our recommendations.

Our report was conducted through a staff of more than two dozen professionals from the intelligence, military, scientific communities, all of whom gave us great insight and a depth of experience on these issues. We conducted more than 250 interviews with other officials and nongovernmental (NGO) experts. We held eight major Commission hearings and one public hearing.

We visited the Sandia National Laboratories in Albuquerque and also met with officials in the United Kingdom, Vienna at the International Atomic Energy Agency (IAEA), and in Russia.

We had planned to visit Pakistan, a country to which we give considerable emphasis in this report. We were at the airport in Kuwait awaiting a flight to Islamabad when we were informed that the hotel in which we were going to spend the night, the Marriott, had just been destroyed by a suicide bomber. That brought the significance of what we were doing into sharp, very personal focus.

Unlike some of the reports that we have heard in the recent past, such as the 9/11 Commission, the Iraq Study Commission, there has been, thanks to God, no weapon of mass destruction used against U.S. interests or in the world by terrorists to date. Therefore, there is no trail of evidence of how that particular event evolved, no tangible ability to then analyze and assess causation. We are talking about an event that has not yet occurred and which it is, we think, within our capability, within your responsibility to take steps to mitigate the prospects that will occur.

Our report attempted to be as direct and as honest as possible. And, as I said, these were the unanimous conclusions of our Commission. Let me state three of our most significant conclusions.

One, our margin of safety is shrinking, not growing. Although the United States has done many things to try to increase our security, we are not operating alone. We are operating on a field against adversaries who, in our judgment, in conjunction with changes in technology, have been moving at a pace faster than our efforts to control them.

Second, the Commission believes that, on the current trajectory, it is more likely than not—more likely than not—that a weapon of mass destruction will be used in a terrorist attack somewhere in the world by the end of the year 2013. That is not only our assessment, but the assessment of the United States Intelligence Community.

And third, as we have concluded, it is more likely that that attack will be with a biological weapon than with a nuclear weapon, given the wider availability of biological materials and know-how.

As we learned, the world is at risk. It is at risk because of a new era of proliferation of weapons of mass destruction. The fast pace of development in the biological field, nuclear proliferation, a coming nuclear energy renaissance, and a nascent arms race, nuclear arms race in Asia, all conspire to increase the risk to the United States and the world.

While the mandate of the Commission was to examine the full sweep of the challenges by the nexus of terrorist activity and proliferation to all forms of weapons of mass destruction—chemical, biological, radiological, and nuclear—we opted to center the Commission's finding on those two that we felt had the greatest likelihood of mass deaths: biological and nuclear.

Our report does not sugarcoat this threat, but we are not helpless. We believe that our recommendations, if promptly adopted, will increase the margin of safety for America and the world.

It is my pleasure to introduce my colleague, Senator and Congressman Jim Talent, who will discuss those recommendations which will increase our margin of safety.

[The joint prepared statement of Mr. Graham, Mr. Talent, and Dr. Allison can be found in the Appendix on page 57.]

**STATEMENT OF HON. JAMES TALENT, VICE CHAIRMAN, COMMISSION ON THE PREVENTION OF WEAPONS OF MASS DESTRUCTION PROLIFERATION AND TERRORISM**

Mr. TALENT. Thank you, Mr. Chairman. And I want to thank Mr. McHugh for your kind words, and our chairman here on the Commission, Senator Graham, who just did an excellent job of pulling us all together behind this report.

I thought when I agreed to serve on this Commission as the vice chairman that it certainly could be no more difficult than getting the kind of consensus you often get here on the committee and we often got when I served on it. And then I found out we have nine very strong-minded people who are experts in this field, and trying to get them all to agree to one thing is difficult. And Senator Graham did a great job of getting us there.

I know when I was in your position I wanted to get to the question time as quickly as possible. I am going to be brief for that reason and also because Dr. Allison is going to talk about much of the part of our report that is in your jurisdiction. I have a couple of comments about the threat and then about the biological recommendations and about Pakistan, and then I will yield to Dr. Allison.

First of all, we have had a lot of questions about why 2013. Well, it is our best belief, based on the interviews, the review of the material, the travel around the world, that this is a near-term threat, not an intermediate-term or long-term threat. And that is one of the things we wanted to emphasize.

We all know that this town tends to constantly defer the important in the name of doing the urgent. And the point of our report is this is both important and urgent. This is not something that may happen 10, 15, 20, 25 years from now. This is a near-term threat. And with everything else that you have to do—and we know what you have to do—we strongly recommend that you keep this as a first-year priority, as you have done, by the way, in your oversight and refining and expansion of your Cooperative Threat Reduction (CTR) efforts.

We know that the terrorists want to get these weapons. We know that they have tried to get these weapons. And we know that they are sophisticated enough, organizationally, to develop the capabilities. They don't have to become some new order of organization in order to get weapons of mass destruction, particularly biological, which is one of the reasons we are so concerned about that.

And we also know that their view of the world—and, strategically, they view the world, in many respects, better than we do—is driving them in this direction. They understand that, for their purposes, the world is really a nexus or a matrix of systems—you know, financial, communications, transportation—on which we depend more than they do, and the links of which are very vulnerable to attack. And they also know that, having no national base, the traditional kinds of deterrents don't work against them.

They are also very sophisticated in the concept of asymmetric weapons, which you all deal with all the time. And it is very logical

for them to want to step up the asymmetric weaponry at their disposal and their capabilities in that regard. And the next logical step for them is to get weapons of mass destruction.

Now, the report's recommendations are organized in four areas: biological, nuclear, changing government culture in certain respects, and then citizen participation. I am just going to talk briefly about biological and Pakistan. We had some single-country recommendations, and Pakistan was the most significant of those.

In the biological area, a big concern we have about biological is that it is going to be easier for them to develop the capability not only to attack with biological but then to repeat the attack. They can get the nuclear capability, but, as you know, because of the bottleneck of nuclear materials, it is hard for them to get enough to put together more than one bomb. But once you isolate a pathogen and you are able to develop it and weaponize it, it is relatively easy to develop more than one weapon. And that gives them the capability to potentially hit the same city two or three times in a row. My concern is that they might be able to kill an American city doing that because they just terrify people so they won't live there anymore. That is another reason we think they may be going in the direction of biological.

Now, there is a number of things we need to do with biological. Our government regulates the high-containment laboratories through three different agencies and a number of different regulatory schemes. And we recommend unifying it with one agency and having one single set of regulations that everybody can understand; and working with the life science community to create a greater culture of accountability and security within that community, as already exists in the nuclear science community.

We note in our report that the nuclear age began with a nuclear explosion. So everybody in nuclear science got it. You know, this is a technology that, if it is abused, can be very destructive. Everybody in life science, on the other hand, is in it for the right purposes. They are all working very hard to develop new cures, to make life better, and they are just not as conscious of the danger that that technology will be abused.

We believe that the very act of this Congress passing a kind of regulatory reform that you did in the intelligence area, for example, although it would be much smaller, is going to raise awareness within that community, and that is going to be very helpful.

Internationally—and this is the piece that you all have direct jurisdiction over—we need to expand CTR and apply it more to biological. You have taken some good steps in that direction. We have to secure these materials and these scientists around the world better than we are doing. Again, the government has been making progress, you all have been making progress, the Department of State has been making progress, but more needs to be done.

Pakistan, as we know, it is an epicenter of everything that concerns us. It is a nuclear power. It is expanding its nuclear weaponry. It is a center for terrorism activity. It is a government that has definite characteristics of instability that may be penetrated by the terrorists. And it is also involved in a tremendous competition with India, which raises the prospect of a nation-state perhaps

using nuclear weapons. So that has to be a priority of American foreign policy and defense policy.

In terms of your jurisdiction, the military is doing a tremendous job of working on eliminating safe havens and going after the terrorists in various areas in Pakistan. That needs to continue. And also we know that the Department of Defense (DOD) is appropriately talking in terms of using smart power or soft power to complement the hard power already at its disposal. And that is a very good thing.

We talk a lot about it in the report, about the need for the civilian agencies of national power, the State Department and the other agencies that possess various capabilities, to go through the kind of examination and culture change that you all helped shepherd the military through beginning in the late 1940s and then through Goldwater-Nichols.

And one of the things we wanted to say to you all is you need to look and work with your counterparts in the Committee on Foreign Affairs about whether DOD ought to develop this capability or whether DOD ought to help the Department of State and the civilian agencies develop this capability. The danger is that, because they need the capability to complement the traditional military power that they exercise, and if the civilian agencies are slow in developing it, that the Department may just develop it because they need it. So, by default, it will be resident in the Department. And maybe that is the right policy, but maybe it isn't, and the policy ought not to be made by default.

But we think it would be great if the rest of the government looked at what has happened with the military, look at what is happening with intelligence, and pursued the same kind of culture change. And we think Pakistan is a great test case, a great place to begin that. Because, without the tools of smart or soft power, we are not going to succeed in Pakistan. We believe that very strongly.

Mr. Chairman, I think I am going to end my comments now and yield to Graham Allison, whose work and expertise in this area is known and is going to discuss CTR and the whole nuclear side.

[The joint prepared statement of Mr. Talent, Mr. Graham, and Dr. Allison can be found in the Appendix on page 57.]

Mr. ORTIZ. Dr. Allison.

**STATEMENT OF DR. GRAHAM ALLISON, COMMISSIONER, COMMISSION ON THE PREVENTION OF WEAPONS OF MASS DESTRUCTION PROLIFERATION AND TERRORISM**

Dr. ALLISON. Thank you very much. And it is a great honor to have an opportunity to appear before the committee again. And it was a great honor to be chosen to serve on this Commission with the great chairman and vice chairman.

I submitted some brief comments for the record, but let me try to summarize my points very briefly under three headings: first, some good news; secondly, some bad news; and then thirdly, an inconvenient question.

So, the good news. January 1st—to put this in perspective, January 1st was the 17th anniversary of the collapse of the Soviet Union. January 1st, 17 years ago, the Soviet Union disappeared. Emerged Russia and 14 newly independent states, with about

15,000 nuclear weapons left outside of Russia and about 15,000 weapons inside Russia, under conditions of chaos, corruption, confusion. So the question, how many of those 30,000 nuclear weapons have been found loose somewhere in international markets in the 17 years since then? And the unbelievable answer is zero—zero.

If you want to see how unbelievable it is, go back and read the transcript of “Meet the Press” in December 1991 when the question was asked of the then-Secretary of Defense, whose name was Dick Cheney, what is going to happen to the nuclear weapons in the Soviet Union if the Soviet Union unravels. And he said, quote, “If they have about 30,000 nuclear weapons and they are 99 percent effective in controlling them, which is more than you could expect, that would leave 300 weapons loose.” And he said, with the confusion and chaos of the time, it is hard to imagine FedEx would do better than them.

So how has that happened? I would say a whole lot of factors, but, among those factors, a crucial element has been the strong support of this committee and the Congress for what became Nunn-Lugar and the Cooperative Threat Reduction programs. Success always has a thousand fathers and mothers. And if tomorrow we found a dozen weapons somewhere in the world that were loose, nobody who has worked on the program would be shocked. But I think, remarkably, as a combination of great work by the Russians, lots of imaginative actions by Americans authorized and funded by this committee, and a big chunk of grace and good fortune, in any case, something that was almost unbelievable that would have changed our world if it had happened didn’t happen.

So I would say the good news is this is not something about which we should be fatalistic. This is something about which we have actually focused on it before, we have done some things, those things have had effect. That is point one.

The bad news: As Senator Graham has already said, a major finding, bottom line, of this report is that the likelihood of a successful WMD terrorist attack over the period ahead is growing, not shrinking. Now, that seems unfair, and, as Senator Talent has explained, we have certainly been doing more things. You have funded more programs. More people have been more active. So how can it be that the problem is getting worse? And we say there are two factors that I mention in my testimony.

First, an adverse trend line in which science and technology is relentlessly advancing and enabling more and more people with the capacity to kill massively in a form that only states could have done previously. So that is the trend line that is just there externally.

And secondly, ineffective policies, ineffective policies that leave North Korea with ten bombs’ worth of plutonium, rather than two at the beginning of the century; Iran with 5,000 centrifuges, rather than zero at the beginning of the century; Pakistan having tripled its arsenal as the state became more at risk.

So the bad news is the likelihood, we believe—and this was nine quite diverse Republicans and Democrats on the Commission—unanimously agree that the likelihood of an attack has been growing, not shrinking.

So the inconvenient question, finally, that I have been troubled about lately—so this is not the Commission report but my own reflection as I have been thinking about this after—as all of us have watched the collapse of the financial system, which this time last year people were assuring us was stable and successful, I think most of us have taken a pause from time to time to say, “Do we really understand the systemic risk in global systems on which we are dependent?” I certainly have been thinking about that.

And if I ask myself, is the global nuclear order more stable or less stable than the global financial order was this time a year ago or two years ago, it looks to me like in the same zone and, therefore, to be extremely troublesome.

So I will stop with that.

[The joint prepared statement of Dr. Allison, Mr. Graham, and Mr. Talent can be found in the Appendix on page 57.]

Mr. ORTIZ. Thank you so much.

This is scary, to put it one way.

And I know that the Commission’s report highlighted the need for increased attention on regional WMDs’ proliferation and terrorism in nations in Asia and the Middle East and a comprehensive strategy for such issues, particularly in Pakistan, Iran, and North Korea.

Now, if you could elaborate a little bit on what type of strategy does the Commission recommend, for instance, for Pakistan, for Iran, for Korea, would these be new strategies that maybe have not been tried before? Maybe you could elaborate a little bit on that, if you will.

Mr. GRAHAM. Mr. Chairman, thank you.

One of the things that the Commission attempted to do was to not micromanage how these policies should be carried out. There are going to be very able people now in positions of responsibility in the Congress and in the executive branch, and it is your challenge to view the facts as they are in time and make tactical judgments. So our recommendations are what we hope are at the strategic level, primarily focusing on what goals we wish to accomplish.

In the case of North Korea and Iran, our statement is that the goal of the United States policy should be the elimination of their nuclear program and its ability to become weaponized. And then we made a series of general suggestions of how to get to that objective: that we should be prepared to engage directly with North Korea and Iran; that, in that engagement, we should have both incentives and disincentives to offer; we should not take off the table, at any point, the use of force in the event that diplomacy failed. We think it is very important that neither of those states, in the case of North Korea, are able to continue to expand their weapons program, which, as Dr. Allison said, eight years ago had two bombs and today has the capability of ten; and, in the case of Iran, had zero nuclear capability eight years ago and today is on the verge of enough material to make its first bomb.

If either of those two countries were to go nuclear, one, they would in and of themselves be threatening. North Korea is seen as a significant threat to our allies, South Korea and Japan. It also would likely trigger a regional escalation of nuclear capability. In the Middle East, if Iran goes nuclear, it is almost inevitable that

Egypt, Turkey, Saudi Arabia will seriously consider and likely attempt to acquire nuclear capability. So the world will become a much more destabilized and dangerous place if that occurred.

In the case of Pakistan—and let me say the obvious: None of these recommendations are easy. If they were easy, they would have already been accomplished. But, in the case of Pakistan, it is the intersection of every bad thing you would want in terms of the likelihood of a weapon of mass destruction falling into the hands of a terrorist.

We think that we have to fundamentally change our approach to Pakistan to one of beginning to focus on building the institutions that will stabilize the country and begin to drain off some of the enmity that is currently being evinced towards the United States and Western culture generally.

We don't think you can solve Pakistan within the boundaries of Pakistan. Again, as Dr. Allison said and as Vice Chairman Talent underscored, a big part of Pakistan's danger is its 60-year, 4-war relationship with India. India and Pakistan, as well as China, are all rapidly increasing their nuclear arsenals. Soon they could well be the third, fourth, and fifth largest nuclear states in the world. So, to solve Pakistan, you have to look regionally.

I personally think that the pending appointment, if it has not already occurred, of Richard Holbrooke to be the envoy to that region of the world is a very positive development and that he will take that broad perspective of what we need to do to begin to stabilize Pakistan and initiate policies that will reduce its current center role as a site for weapons of mass destruction and proliferation.

I will just conclude with the unhappy statement that virtually every person—intelligence, military, political—who has studied this issue has come to the conclusion that the most likely place that the next terrorist attack will be launched will be from the Federally Administered Tribal Areas (FATA), those uncontrolled territories between Pakistan and Afghanistan, again underscoring the centrality of Pakistan in terms our efforts to avoid this global catastrophe.

Mr. TALENT. Mr. Chairman, as Senator Graham said, we don't want to get really into the tactics on the ground in foreign policy because Presidents have to have discretion to respond to events, and also there were some areas where, frankly, we just really couldn't get a consensus in terms of tactics. And Iran and North Korea were that.

But we anticipate direct engagement by the new Administration and said, look, if you do that, your goal should be elimination of their nuclear weapon program in their entirety; you should negotiate from a position of strength and be prepared to use direct action.

And I am a believer—and Dr. Allison may want to talk about this. He talks a lot about the importance of having credible, significant carrots and credible, significant sticks. Because, to me, it is just common sense that if you want somebody to do something, you would be prepared to give them good things if they do it and make them understand bad things will happen if they don't. And that is probably the best chance we have to consistently follow that policy over time.

With regard to Pakistan, we recommend continuing to eliminate the safe havens, which we are doing; expanding what are basically CTR efforts to secure the nuclear and biological materials, which we have done some of but need to do a lot more; and that we engage actively tools to defeat the extremist ideology. And here again, we are referring to the tools of soft power.

And I think of it in these terms. I want Presidents to have options. So when the new President is considering what to do about Pakistan, it would be great if he had the option of saying, "Well, let's use our resident capability of effectively communicating messages about our intentions to the people of Pakistan so as to cut off terrorist recruiting there." And I am really glad we have that capability resident in the ex agency. And I think that the Department of Defense can either develop that capability or be a huge help, as it can this committee, in assisting the Department of State in developing that capability; also building, you know, local economic and grassroots institutions, which requires the same kind of capabilities.

Mr. ORTIZ. Would you like to add something, Dr. Allison?

Dr. ALLISON. Just briefly, one of the strong lines in the report, I think probably written by Chairman Graham, is that if you map weapons of mass destruction and terrorism, all roads intersect in Pakistan. So I would say that is a big takeaway.

Secondly, to agree with Senator Talent, we, in part because we couldn't agree among ourselves and in part because we didn't want to be micromanaging, retreated to what is the normal commission style and sometimes even Congressional style, which is stating ambitious objectives and then turning it over to somebody else to figure out how to do it.

And I think the hard and unpleasant fact is that the hand that the new Administration will inherit with respect to North Korea is a country that has ten bombs' worth of plutonium and has conducted a test. So it is perfectly appropriate to say North Korea should eliminate these, and that should be our objective, but it is where it is. So facts on the ground have advanced.

In the case of Iran, our objective should be that Iran would eliminate all of its enrichment activity. But, unfortunately, Iran has crossed already ten red lines that we said they couldn't cross before. It manufactures centrifuges. It operates centrifuges. It operates them in a cascade. It enriches uranium. So those are facts that will be extremely difficult to erase.

And in the case of Pakistan, I would say the most troubling thing for me is that it has essentially tripled its arsenal of nuclear weapons over this period, as the state has become increasingly fragile and shaky. And, yes, of course, they should have fewer nuclear weapons, and they should be stable. Over to Holbrooke, I would say, you know, good luck.

We should notice that the history moves on. And once it has moved on, our opportunity to intervene often is among shrunken options that are less attractive than what we would have wished or hoped or maybe even would have been available if we had acted earlier.

Mr. ORTIZ. And I just have one more short question for you. I think, in my personal opinion, we are focused in two wars that we

are fighting now, and there was a tendency by some not to engage those countries who were identified as being terrorists or groups that were terrorists.

Do you think that we have done enough diplomatically? Should we do more? Should we engage those countries to see if we can win them over? What is your idea?

And then I will yield to my good friend from New York.

Mr. GRAHAM. I think one of our most fundamental recommendations—and it certainly falls into the category Dr. Allison just described of where we identified a big problem and a goal, recognizing the enormous difficulty of achieving it. In my assessment, we have been fighting the war on terror by fighting the symptoms of terror: the suicide bomber, the people who blew up the buildings on 9/11.

What we have to start doing is dealing with the root causes of terror. Why are so many tens of millions of people prepared, apparently, to send their sons and daughters to commit suicide on behalf of an extremist cause? What is within our capability of trying to reduce that enmity so that our children and grandchildren don't live in a world of this enormous hatred? I think that is an issue that is worthy of the best minds in the United States Congress to work with the Administration to try to determine what is a strategy.

Now, I personally think that, while it is extremely difficult, it is not an impossible dream. On a smaller scale, it is something that, Mr. Chairman, I imagine you have experienced, as have I, given where we come from. Sixty years ago, our relations in Latin America were truly awful. The Vice President of the United States tried to make a 12-stop visit to Latin America in the 1950s and was so abused in the first 2 stops that he turned the plane around and came back to Washington.

Now, while our relationships in the hemisphere are not perfect, they are dramatically better than they were. And that didn't just happen by accident. We and our neighbors did some things that improved the relations. One of the things, for instance, was thousands of young people from Latin America decided, rather than staying home or going to Europe, they would come to the United States to get their education. And so now the President of Colombia happens to be a graduate of the Kennedy School. So he knows America not by a two-dimensional cardboard cutout image, but by the flesh and blood of the people he has actually dealt with.

I cite that as an example of a major challenge that we, I think, can take pride at the progress that we have made. And I hope that the people who are sitting in your chairs two generations from now will be able to say that we have made some significant progress in improving our relations in the part of the world from which many of our most significant threats are now emanating.

Mr. ORTIZ. Mr. McHugh.

Mr. MCHUGH. Thank you, Mr. Chairman.

And again, gentlemen, thank you so much for being here. Such an extraordinarily important topic.

Dr. Allison, I heard your comments about the nuclear arsenal in Pakistan. I am curious, what is your assessment of the command and control of the security of that arsenal right now?

Dr. ALLISON. I would suggest that the committee would appropriately look at the National Intelligence Estimate (NIE), and you might want to ask that in a closed setting to folks from the Intelligence Community.

But I think, from the public record, what has been said and what I believe and what we say in the report, is that U.S. assistance, as well as Pakistan's own efforts, leave the nuclear arsenal itself in better shape than it was, say, some number of years ago, especially before the A.Q. Khan episodes, with more question marks about the nuclear weapons-usable material in the laboratories at some facilities like the facility that A.Q. Khan was the director of.

That is for the technical systems and for the personal systems in which the Army plays the crucial role. But the counterpart to that, which I think you can get to by logic, is if the state itself becomes shaky or even unstable or perhaps even comes apart, those systems don't magically control stuff. The systems mostly are incorporated in people. And I have told several times at the Commission, I have been extremely interested in this question for a long time and have talked to Musharraf about it three or four times on separate occasions. And the agency had him as a visitor at Harvard for a couple of days. And he said, "Don't worry, everything is under 100 percent control, it is not conceivable that something could be lost."

And on one of these occasions, he had, just two weeks before, come within a second and a half of being assassinated. And the prevention of the assassination was only possible by some technical assistance from the U.S. Government. So I said to him, how likely is it that your nuclear weapons are more secure than the president of the country?

Mr. MCHUGH. Let's take that a step further because I agree with you. While you can assess the command and control of those weapons stockpiled now and assess them to be relatively secure, they really are dependent upon the security and stability of the government.

What we hear from Pakistan is their actions in the FATA have the potential of undermining the stability of the central government. And as we have seen this aggressive and then less aggressive posture, in part that has been driven by domestic politics, as policies are here.

To what extent can we count on the Pakistani Government to rid the FATA of those threats that cause this Commission to say all roads of terror lead to Pakistan, or all roads of potential WMD, without disrupting that balance that would cause the fall of that government and then, down the chain, call into question the security of the stockpile?

Dr. ALLISON. I would say, for my nickel, you are absolutely on the bull's-eye. And when one looks at the complexity of Pakistan and the fragility of the political system—as one of my friends who knows Pakistan very well says, there is only one load-bearing institution in Pakistan, and that is the army.

So the political system is extremely fragile. The differences among people are quite large. The population's views about the War on Terror and even the activities in the FATA is that this is doing Americans a favor. That is not the universal view, but that is the majority view.

So trying to balance, on the one hand, the motivation and cooperation required to prevent Al Qaeda from reconstituting its operations in ungoverned Pakistan, which is totally unacceptable from an American point of view I believe, and without, on the other hand, contributing to the instability in Pakistan has been the dilemma in the policy for some period of time.

Now, as Chairman Graham said—and the Commission debated this at some considerable length—for quite a long time—again, now, this is just from what the newspapers report—for quite a long time, the U.S. did not attack Al Qaeda in ungoverned Pakistan. And only last summer did the Predator program become active again, if we read the newspapers. And since then, there have been quite a lot of attacks, including a number of Al Qaeda operatives killed, including one of my favorites, a fellow named Hatab, who was the head of their nuclear and biological program.

So, is this stressful for Pakistani politics and the society in which one country is operating militarily inside another country without its approval? Indeed, it is. It is extremely. On the other hand, if the alternative is to allow the reconstitution of headquarters and training camps for Al Qaeda, excuse me, that is what happened in Afghanistan before 9/11 and for which we say shame on us. So I think that balance is extremely difficult.

And I think the new President of Pakistan, you know, sort of is struggling with that every day, as is the American Ambassador, as is whoever is going to try to formulate American policy in the next phase.

Mr. MCHUGH. If those attacks, if those attacks are happening by U.S. policy, you would agree you have to be extraordinarily careful not to cause the downfall of this relatively stable government, at least for the moment?

Dr. ALLISON. Absolutely. And, again, the fact is that one can read about things going on in the newspapers. One would wish that there were things that went on about which you wouldn't read in the newspapers. But I would say that is maybe history. I would prefer such a situation, but I think that if and when an attack occurs in a village in Pakistan, killing some foreigners who were there, the Pakistani press reports it and the American press reports it, and it has the reverberations in Pakistani politics that you suggest.

Mr. MCHUGH. One last question for any of the panelists. I remember Henry Kissinger, who was somewhat excoriated during his career, said that the potential of the force of the United States military has to be kept on the table in defending the oil fields, which were critical to our economy and our way of life. And without getting back into that debate, as I read the Commission's report, the ultimate potential of military force must be reserved against Iran and North Korea. Unfortunately, I couldn't agree more. And I say "unfortunately" because that is obviously a place we would prefer not to go.

However, I would be interested in you gentlemen's assessment of how other important nations in that equation, particularly Russia et al., might view that kind of recommendation.

Mr. GRAHAM. If I could use your question to talk about that and the issue of Russia generally, between Russia and the United

States, we control over 95 percent of the nuclear material on earth. So a positive relationship on this issue of security of nuclear material and hopefully a strengthened relationship on security of biological material is critical.

We visited Russia in September of last year. I was concerned that our visit would be terminated because we couldn't get visas to go into Russia. This was shortly after the invasion of Georgia; tensions were high between our two countries. We did get visas.

Then I was concerned that we would meet a very hostile group of Russians. Quite to the contrary. The recurring theme was, yes, we have some serious issues between us—Georgia, North Atlantic Treaty Organization (NATO) expansion, missile defense—but that is going to be the pattern when two large countries are living in the same global space. But we understand that there is one thing that we have in common, and that is a responsibility to our people and to the world to protect all this nuclear material that comes under our control. And they reiterated, we are as committed to this as we were prior to this current set of disagreements. And that statement was confirmed by our embassy and by our United States Department of Energy scientific personnel who are in Russia, whose purpose it is to oversee what the Russians are doing relative to nuclear security.

In our report, we made a recommendation that we needed to communicate to the rest of the world that this relationship on nuclear security had not been breached. And we made several suggestions of how we might do that.

One of the suggestions came from a personal experience that I had had in Pakistan as chairman of the Senate Intelligence Committee when we met with representatives of the Pakistani Joint Command and I asked the question, what controls do you and the Indians have in place to avoid an accidental nuclear launch? The answer was, virtually none. There was no and is no equivalent of the red phone that was symbolic of our efforts during the Cold War with the Soviet Union.

So one of our recommendations is that Russia and the United States together could serve a very valuable function for the world to work with Pakistan and India and try to encourage them to adopt those kinds of fail-safe and mistake-containment policies that worked so well for us for the better part of 40 years.

So I think Russia is a very critical part of this equation. And we need to continue to work to see that, whatever disputes we may have, that they don't leak out and infect our common responsibility of nuclear security.

Mr. MCHUGH. Thank you, Mr. Chairman.

Either of the two gentleman, Dr. Allison, Senator Talent?

Dr. ALLISON. Just a quick footnote on Bob Graham's point. As a result of the Bratislava agreement, which was between President Bush and President Putin in February of 2005, so just the beginning of President Bush's second term, they developed a recipe in which the two Presidents took personal responsibility for the nuclear terrorism threat at the top of the agenda.

They agreed on a work plan for securing to a defined level called comprehensive upgrades 75 percent of Russian nuclear weapons and material, which were all the ones they would let us work on,

everything except for the jewel boxes that they work on mostly themselves.

People were identified as the lead responsibility for this issue, including Sam Bodman for the U.S. and his Russian counterpart. And they had to report to the two Presidents every six months on how they were doing.

So, with all of the back and forth in Russia, what then happened? And I would say it is a great good-news story. In December, Secretary Bodman reported, and President Bush then announced, that all the weapons and materials, which are about 75 percent of Russian weapons and materials, in the work plan had been completed over that period of time.

So that is part of the National Nuclear Security Administration (NNSA) activity in particular that this committee has supported and examined and overseen and funded, or authorized. And I would say, again, it is another part of a good-news story as an example.

Mr. MCHUGH. Thank you.

Mr. TALENT. I think you have to distinguish between when we are dealing with countries whose objectives at least basically are similar to ours and those who at least we suspect have objectives that are not similar to ours.

And the traditional tools we have—diplomacy, public assistance, military power, the international regime as it is now constituted—I think if we use those tools effectively and consistently, they are probably good enough in dealing with the first class of countries that basically want what we want at the end of the day, but we may just have difficulty dealing with them. And that is most of the countries, including Russia in the context of this kind of a problem, because they really don't want proliferation of these materials, we think.

But you are going to have some regimes which may have more aggressive objectives or just may be very, very difficult to predict, like the North Koreans or the Iranians. And the burden of our report is that it is clear, in dealing with those governments, we have to expand the options and the capabilities that any President has at his or her disposal to be able to deal with those countries. I mean, diplomacy as traditionally constituted, foreign assistance—I mean, it is fine; it just doesn't do the trick.

And so, for example, we suggest strengthening the International Atomic Energy Agency (IAEA), better funding, better technology because it is being overwhelmed, a range of penalties that effectively shift the burden of proof for a Non-Proliferation Treaty (NPT) violation, so that countries like this have to show the international community that they are complying instead of playing some kind of Perry Mason game over years where, you know, they have a pretense of complying and we accept the pretense because it is hard not to.

And then what we talked about before, developing these capabilities so that a President has the option of saying, in a place like Pakistan, well, look, let's do something about how we are viewed in Pakistan by helping build local institutions of democracy and economics and good public relations campaigns like you all have to conduct every two years if you want to be here, right? I mean, de-

velop those capabilities so that the Pakistani Government can be seen as helping us without becoming less stable.

A theme through the report is that this game is about, in part, increasing resident capabilities so that Presidents have a wider range of options in dealing with the hard cases.

Mr. MCHUGH. Thank you.

Thank you gentlemen.

Mr. Chairman, I will yield back.

Mr. TAYLOR. [Presiding.] Thank you.

We would like to remind the newer members that, by tradition, the chairman and the ranking member are not limited by time; everyone else is.

We will now recognize people in the order that they were here at the gavel, and we will strictly enforce the five-minute rule.

Dr. Snyder from Arkansas for five minutes.

Dr. SNYDER. And of course those of us who are not the chairman or ranking member sometimes wish that that tradition changed, but, you know, we are all supportive of tradition.

I appreciate you all being here. It is great to see you all.

Senator Graham, you look great. You and I had some doctors cut into our chests about the same time some years ago, and I haven't seen you since then. And you look like you have been spending some time in Florida, and that is great.

Dr. Allison, I wanted to ask you, I don't know who Douglas Dillon was. Who is Douglas Dillon?

Dr. ALLISON. Douglas Dillon was the Secretary of the Treasury in John F. Kennedy's administration. And a famous New York investment banker, Dillon Reed, was part of that same family. And they gave a professorship at Harvard, to which I have the great honor to be the Chair, that I have the honor to sit in.

Dr. SNYDER. I think I had to memorize that name in my civics class.

Mr. TALENT. Congressman, if I could say, this is an example of the role Dr. Allison played on the Commission. He was to our commission what the professor was to the other people on Gilligan's Island. You could ask him anything, and he had the authoritative answer.

Dr. SNYDER. Senator Talent, you are taking part of my five minutes now.

Mr. TALENT. That rule, by the way, in the Senate is honored in the breach. Maybe the chairman will give you another 15 seconds.

Dr. SNYDER. I also appreciate all the efforts that Evelyn put into this.

I wanted to ask—and I did read the report. You did not dwell very much on why you did not discuss chemical weapons. You talk about the availability—I think you did probably most detail here today—the availability of nuclear weapons, even the smaller nuclear weapons. Obviously, there are millions of chemical weapons that are out there. I don't think some people would be—I don't want to say dismissive, but I think some people would have included that in the topic.

If you all would respond to that, anyone.

Mr. GRAHAM. First, you gave us six months to do this report. So we had to make some decisions in order to be able to focus our time

and staff resources in sufficient depth to make quality recommendations where we thought necessary.

Second, we felt that the likelihood of a chemical weapon achieving the levels of lethality which a biological or a nuclear could was limited.

Third, we have had a lot of experience with chemical responses. An anhydrous ammonia tank truck falls off the railroad track, punctures, and creates a serious situation in the neighborhood. We know how to respond to that because we have done it over and over and have minimized the consequences. We have never dealt with a nuclear or biological attack and the consequences that that may cause.

So we did not mean to denigrate the importance of chemical or radiological or other possible weapons of mass destruction. We felt we could be of the greatest service by focusing on these two areas that we thought were the most likely to be able to result in massive deaths.

Dr. SNYDER. Another question I wanted to ask, with regard specifically to your comments in the report about Iran, I think you choose your words very carefully and are very clear in the report that you do not want Iran to have any nuclear weapons program.

I take it from the language that you used that you do not have a problem with Iran having a nuclear power program if it has the kind of controls that you envision. Is that an accurate statement?

Mr. GRAHAM. Yes. Although I will say that on the Commission there were people who were concerned about almost any expansion of civilian nuclear because of the potential for perversion.

Dr. SNYDER. But your report specifically only says nuclear weapons.

You mentioned—my time is winding down.

Mr. GRAHAM. And let me say, Dr. Allison uses the term "lease." The arrangement that the Iranians have with the Russians—and we discussed this at some length when we were in Moscow—is that Russia will provide the uranium necessary to operate its civilian reactors. And that is the beginning of an international bank of nuclear material. And then, when the rods are used, Russia will take them back. So, essentially, Russia is leasing the nuclear material to Iran, which we think goes a long way to pacifying the concerns about proliferation into inappropriate areas.

Mr. TAYLOR. The chair thanks the gentleman from Arkansas.

We now recognize the gentleman from Maryland, Dr. Bartlett.

Mr. BARTLETT. Thank you very much.

Thank you gentlemen for your service and for your testimony today.

Dr. Allison, you gave a good discussion of the dissolution of the Soviet Union and the potential availability of nuclear weapons.

General Lebed, before this committee several years ago, told us that there were about 80 of the suitcase bombs developed by the Soviet Union that were loose somewhere. That is also your general understanding?

Dr. ALLISON. This is—it is hard to give a short answer, but this is a topic I have been extremely interested in. I served as Assistant Secretary of Defense in the first term of the Clinton Administration

when, with thanks to Nunn-Lugar and the Cooperative Threat Reduction program that you all authorized, we were dealing with this.

I remember when Lebed made this comment. I have tried to trace this story down. I actually, in the book that I wrote in 2004 called *Nuclear Terrorism: The Ultimate Preventable Catastrophe*, advanced the story somewhat.

My current best belief is as follows: There were such weapons. They were not uniquely identified with a code number, so that they—particularly the ones produced for the KGB. Most of the weapons were collected and destroyed. There may be some of those weapons continued to be missing, but the unbelievable good news is we have been looking for them pretty hard and we haven't found them in 17 years.

So, each year, as it goes by, it seems to me more and more likely that we may have succeeded in doing something that I think we couldn't conceivably succeed in doing. So I am schizophrenic.

Mr. BARTLETT. So that is one potential source of a nuclear weapon for a non-state actor.

Dr. ALLISON. And just one more thing. Excuse me. There was an occasion that, again, I think we report in the Commission, in 2004—it is either in our report or in the 9/11 Commission Report—in 2003 or 2004 in which there were serious discussions occurring among Al Qaeda types about buying four of these weapons, which weapons were never found.

Mr. BARTLETT. Do we know the origin, the destination, and the cargo of all the ships in the North Atlantic shipping lanes?

Dr. ALLISON. No, sir.

Mr. BARTLETT. Okay. I understand that you can buy a Scud launcher on the world's open market. A Scud launcher? I think that is true, that they are available on the world open market.

So now a terrorist can potentially buy a weapon, a nuclear weapon. He can get himself a tramp steamer, and he can have a Scud launcher on deck, and if he throws a tarp over it, you don't know whether it is baled hay or a Scud launcher underneath because you can't see through the thinnest thing like that from space.

So now you are a terrorist and you have this nuclear weapon off our shore. Could we, of a certainty, take out that missile if he fired it at us today?

Dr. ALLISON. I think that none of the missile defense systems discussed do very well against cruise missiles, so—

Mr. BARTLETT. I think the average citizen doesn't understand that. They think we are protected. Thank you for your answer. We certainly are not protected. I think the probability of taking one out is very, very small.

So now you are a terrorist out there with this weapon. What are you going to do with it? You can do two things with it: one, try to drop it on New York City, but, gee, you don't have a very good launcher there, and you don't have much precision; you might miss. The other thing you could do with it is launch it extra-atmospherically and produce an electromagnetic pulse (EMP) laydown.

Which of those, even if you could hit New York City, which of those would provide the most harm to our country? I think, of a certainty, the EMP laydown, because it could take out the whole

Northeast, which would be Katrina in at least an order of magnitude larger.

I am very much concerned, members of the Commission, that we have essentially no ability to protect ourselves against such an attack or to recover in any seemly way from such an attack. Am I wrong?

Dr. ALLISON. No, you are not wrong, but if I could put it in perspective just for a second.

If I imagine a terrorist with a nuclear bomb, let's say he gets one of Lebed's suitcase bombs, and he asked himself, how can I do the most damage to the U.S.? So this is Mr. Osama bin Laden. So he has to think about, how do I get this weapon to the target and how do I explode it.

The number of ways in which illegal things come to New York City or Washington or Los Angeles every day—I have a chapter, actually, in my book, which I will send you, about this where it says, let me count the ways. Okay? Every way that illegal drugs come to your city, that is precisely the same way a bomb could come. As one of my colleagues says, who has been chancellor at the University of California, Los Angeles (UCLA), if you have any doubt about terrorists' ability to bring a bomb to an American city, remember, they could always hide it in a bale of marijuana, which we know comes through American cities. So the most likely track is the same way that illegal people and illegal drugs and other illegal items come to American cities.

The likelihood that the terrorist not only gets this bomb but also a missile, which is now another hurdle—it is not impossible, but—and especially a missile that is an Intercontinental Ballistic Missile (ICBM), so he has to get to the atmosphere—that is another hurdle, not impossible—I say you get further down the chain.

And the last thing to say about missiles is that they have one fatal flaw: They leave an unambiguous return address.

Mr. TAYLOR. The chair thanks the gentleman from Maryland. Now recognizes the gentleman from Washington State, Mr. Smith.

Mr. SMITH. Thank you, Mr. Chairman.

Thank you gentlemen for your work and for this presentation.

We have a lot of programs in this area and a lot of money being spent. And you make a number of recommendations in a bunch of different areas, but I am going to try to narrow that down a little bit.

Two questions. One, where are we spending money on counterproliferation or nonproliferation or any of these things that you took a look and said, you know, that is not really working, that is not helping, that is an area that we can shut down and put the resources in a different direction?

And second, what are the one or two areas—and you mentioned about a dozen different ideas in a number of different departments, from the Department of Health and Human Services (HHS) to Homeland Security, Defense Threat Reduction Agency (DTRA), a lot of places—but what are the one or two where you are saying, that is where we are getting the most bang for our buck?

Sorry, I am a little back from the microphone. Let me try that again.

So the two questions are: one, what are the areas where we are spending money that we shouldn't be, it isn't really working? And, two, what are the one or two areas where you go, this is really working?

Because the bottom line here is there is no magic solution to this problem. I mean, when you think about the number of biological weapons that are out there, the number of people who are working on them, we cannot wrap our arms completely around this problem, either on the biological or the nuclear side.

But there are some things that are working better than others, I am sure. And it would be helpful for us on the committee to know, you know, if you only have one place to put it, here is the place to put it because it is really making a difference.

Mr. GRAHAM. One of the things that this committee recognized when it passed the same bill that contained our commission was that there isn't anybody who has the responsibility of answering the two questions that you have just asked.

Your directive was that there be a person in the White House whose sole responsibility was the issue of weapons of mass destruction and proliferation. That is a position which has gone unfilled, in large part over a debate as to whether that position should be Senate-confirmed or traditional White House staff directly responsible solely to the President.

We think, and one of our recommendations is, that position needs to be created and it needs to be filled. I am pleased to say that candidate Barack Obama indicated his support for that proposition. When that is in place, when that person is in place, we should have someone who can look specifically at the question.

Now, in answer to your question, I would say that one area that cries out for greater attention is the biological area. We have been focused largely on nuclear. And I have looked at the authorization list from this committee, and it is a big list, almost two billion dollars, heavily oriented towards the nuclear side of the equation. Our conclusion was the greater threat is biological.

Mr. SMITH. And is there a particular place right now that is doing biological work, an agency or entity where we should be focusing those resources?

Mr. GRAHAM. Well, there are lots of places which are currently doing it, and that may be both part of the solution and part of the problem, is the lack of clarity of accountability for this effort.

I don't think it is appropriate for us to be telling the next President or telling the Congress which agency is most competent to do it. But we would say you ought to decide on somebody.

Mr. SMITH. Senator, I think it is appropriate for you. I mean, you spent six months studying this, and you are very, very smart people. I think it is perfectly appropriate for you to say, this agency works better. If it is not in the report and it is a conclusion you couldn't get to, that is fine. But it seems to me like, right now, you are the guys who would know best.

Mr. GRAHAM. Well, you know, I think that this is essentially a science issue, and, therefore, I would personally be inclined to try to put it into the agencies such as the Centers for Disease Control (CDC) with mandates to come up with better procedures to quickly

identify the nature of the attack, to establish systems to report that an attack is under way.

Here in the Washington, D.C., area, for instance, there probably are, what, 25 or more hospitals. If each one of those hospitals had 5 or 6 people come in over a 24-hour period with a particular, rather exotic symptom, they might think, well, 6 people happened to get sick. But if they knew that the same number had come up at 24 other places, they might say, this is more than just a series of coincidences; something systemic is happening.

We don't think we have the capability, and I believe that an agency like the CDC would have the potential to assign the responsibility to figure out the science and the means of applying the science at an operational level.

Mr. TAYLOR. The chair thanks the gentleman from Washington State. Would now recognize the gentleman from Virginia, Mr. Forbes.

Mr. FORBES. Thank you, Mr. Chairman.

And thank you gentlemen for being here. And as has been mentioned, we appreciate your expertise and knowledge. This is an incredibly complex area.

Senator Talent, in your opening remarks, you addressed the date issue, the 2013, and indicated to us that people had asked you why you picked that particular date. Was there some calculus that went into 2013? Or was 2013 simply, as you kind of indicated, to show that it was quicker rather than later? Or did 2013 have a significance?

Mr. TALENT. It was not like we had a piece of intelligence, classified or unclassified, saying, oh, they are planning something now that is going to happen in 2013.

But it was our evaluation, if you look at the acceleration of the availability of this material, if you look at what we do know about their intentions and the increasing priority that they are giving to this, that the probability rises above 50-50, we think, within the next 5 years.

And, obviously, it is an estimate based on, you know, the experience we each had and the material we reviewed. But it is an estimate and a belief that is reflected pretty comprehensively within the Intelligence Community, as the Director of National Intelligence's (DNI's) comments a couple of weeks after we issued the report indicate.

Mr. FORBES. And I don't want to press you on this. I am just trying for my own understanding. But there was basically some calculus that you used, whatever that calculus might have been, to get 2013 as opposed to 2011 or 2015, I would take it? Is that a fair statement?

Mr. TALENT. Yeah. I mean, it wasn't so precise. Could we have said four years or six years? Yeah, I mean, it is just a gut. You have to pick a point. And we knew it was near-term, and we picked 2013.

Mr. FORBES. In that calculus, however vague it might have been or specific, does the probability of such attack increase as you go further out in terms of the date? So, in other words, is it more likely in 2015 than in 2013? Was that a part of this?

Mr. TALENT. Yeah, because the trends are not going in the right direction. So, unless they are reversed, which we think it is very possible to do, or unless there are changes, either because of some conscious policy or something happens that is a break for us, then we are not going in the right direction. So, yeah, I do think it increases.

Now, I think what is hard to say about that at any given time—and, to me, the wild card in this—people say, why haven't you been attacked? And I think we have made a lot of progress in the Intelligence Community, because—I have been talking about resident capabilities—I think those capabilities are growing in that community. And my hope is that that this trend, this growing capability will increase. In other words, the rate of growth will get faster and faster.

So, to answer Mr. Bartlett's question, what is our defense against the terrorists doing this? It is true we don't have the passive defense, but we are getting better and better at finding out that that is the plan and getting them before they can do it. And I don't know how fast that capability will grow.

Mr. FORBES. Nor their capability or our capability, either one. But I think whatever it is, this complex mixture of good and effective carrots and sticks that you were talking about, at some point in time, if you guys come back on January 22, 2017, and we haven't had an attack, we will say we had a good mix, as opposed to not having a good mix.

Take that same calculus back to January 22, 2001, if you would. If you use that same calculus, what would you have picked as a date when you might have had an assumption that we might have had a weapons of mass destruction attack? Did you ever look at that particular calculus? If you did, what would that date have been?

Mr. TALENT. We certainly didn't formally. I think we might each have a gut. I don't know that I would even want to hazard a guess because we didn't look at that systematically. And we have tried to be—you know, you walk a line with this sort of thing between you want to be very direct, never say anything that you don't believe, but at the same time not speculate too much because, in a subject like this, that will cause a bunch of the speculation and comments and consequences that may be negative.

So I don't know that I would want to hazard a guess, but Dr. Allison might. I mean, he has been studying this for a long time.

In other words, you know, what would you have said as of 2001, I guess he is asking.

Dr. ALLISON. I think the question—our answer is there is not a well-established scientific methodology for picking more likely than not or 51 percent as opposed to 42 percent; similarly for the time frame.

So I think, in January of 2001, people who had been studying terrorism—the center that I run at Harvard, we had published four books on this subject—were predicting that there would be a major terrorist attack on the American homeland. That was not an uncommon view in some parts of the U.S. Intelligence Community but was certainly not the broad consensus view.

And, actually, when I had been assistant secretary of defense, I had written a memo on "A Hundred Horribles" in which a 9/11-like attack with airplanes was just above the halfway mark. So there are a lot of things worse than that.

In the period since then, we also know that at least one biological terrorist attack on the New York subway was in train and was interrupted.

Mr. FORBES. Doctor, I am sorry, my time has expired. If you could just give me that in writing.

Mr. TAYLOR. The chair thanks the gentleman. The chair now recognizes the gentlewoman from California.

Ms. TAUSCHER. Thank you, Mr. Chairman.

I want to thank my colleagues, Senator Graham, certainly Senator Talent, and my old friend Graham Allison, for your very diligent work.

As the chairman of Strategic Forces over the last couple of years, I have led many congressional delegations, working on our area of jurisdiction. We have the National Nuclear Security Administration, the NNSA; we have missile defense. And, certainly, the last couple of trips we have taken, I think, have been very informative, certainly going to Pakistan in September, where we met with General Kiyani and General Kidwai, who are nominally and specifically in charge of the army and the nuclear weapons complex in Pakistan.

And to direct my comments to my great colleague, the ranking member, we have a lot of work to do. We have done a lot. Certainly, in early 2000 when India and Pakistan came to blows over Kashmir, the United States directly intervened, with our friends at the NNSA, to make sure that they had the kind of nonproliferation and other things that we have in the United States to assure that their stockpile would be safe.

But there is nothing we can do about the political instability in Pakistan. And, ultimately, that is the way we safeguard these weapons, is to make sure that that country has political stability. And no one can assure us, certainly in the short term, that it will.

In December, I led another congressional delegation to Russia, where we have an enormously complicated relationship. As I said at the time, especially in the intervening time since Georgia, you can't go back to business as usual, but we have business to do.

And this is a very illuminating hearing. We have a lot of different critical issues to work on. But what I want to specifically ask the members of the Commission is that the Strategic Arms Reduction Treaty (START), which, as you know, expires at the end of 2009, has been enormously valuable in the verification process. And with the kind of relationship we have with Russia right now, which is not the best, but with the new Administration that promises more engagement, what you recommend is something that I have recommended, which is that we extend START for the short term.

What I am really interested in understanding is, would you say that we just push START forward as START is? Should we work to do what we call sometimes a better START or a START Plus? And where are those areas that you think we should concentrate on?

And secondly, if you can briefly touch on the question of the Comprehensive Test Ban Treaty (CTBT), which I have advocated for a long time that we ratify. And can you please just describe what you think the benefits of ratifying the CTBT would be?

Thank you.

Dr. ALLISON. Just briefly, I think Ronald Reagan's mantra was "trust but verify." And there was a bit of peculiarity in which we have been interested in less verification than the Russians. I regard that as odd, from my history as an old Cold Warrior.

So I would say, even though there is a lot of—or some of the elements of the verification system may have been outmoded and we may be able to move on, I would say keeping it more or less is better, and especially if one worries about scenarios in which our relationship with the Russians may be worse rather than better.

With respect to going beyond START and Strategic Offensive Reductions Treaty (SORT), I would think moving another significant step to some number like 1,500 or even 1,000 would make good sense in the next round of START Plus.

And with respect to CTBT, I think the debate that got aired over that in the Senate needs to be re-examined because the mechanisms for verifying that people are complying with the Comprehensive Test Ban Treaty have improved significantly.

And I think when people look at them, they would judge, as I believe that there is a strong view of—this is not a Commission view, but a broad view—that CTBT would actually constrain other people a whole lot more than it does us and, therefore, would be to our advantage.

Ms. TAUSCHER. On the way back from Pakistan, we stopped in Vienna to see Secretary General ElBaradei. And I think the issue of nuclear fuel banking, something that I have advocated for a long time, is now coming to fore, certainly between Russia and Iran. But clearly the IAEA is underfunded, has been chronically underfunded for a very, very long time.

Chairman, can you talk briefly about what you think we can do to gain international consensus to increase their funding, give them a bigger mission and more teeth?

Mr. GRAHAM. Well, first, the United States needs to be certain that it is meeting its obligations. I, at one time, was Chair of the Nuclear Subcommittee of the Senate Environment and Public Works Committee, which has jurisdiction over things like the Nuclear Regulatory Commission (NRC). And we hadn't paid our dues to the IAEA for several years. That has now been overcome.

But one of the tendencies that the international community has gotten into is that, rather than deal with the base budget of the IAEA, we do all these special assessments whenever there is a new problem. That is a very unstable financing for an organization that has to make long-term commitments. You have to be able to—

Mr. TAYLOR. Senator, I am sorry, but we are trying to adhere to the five-minute rule. Could you supply the rest for the record?

Mr. GRAHAM. I would say that this committee would be well-served to take a serious look at not only the amount of funding for the IAEA, but the way in which we have gone about funding and how the United States can lead the international community in strengthening both of those components.

Ms. TAUSCHER. Thank you.

Thank you, Mr. Chairman.

Mr. TAYLOR. The chair thanks Mrs. Tauscher.

The chair now recognizes the gentleman from South Carolina, Mr. Wilson.

Mr. WILSON. Thank you, Mr. Chairman.

And thank you, Commission members, for being here today.

Senator Graham, I particularly appreciate all of you trying to alert us to an event that has not occurred. It is so frustrating, but it is so important that we celebrate hopefully a non-event.

And, additionally, I want to thank Senator Talent for his explaining the urgency of what we are facing.

And then, Dr. Allison, as a fellow Cold Warrior, I appreciate your referencing the 17 years of success in nonproliferation with Russia and the 14 now-independent states. And so there can be success. And we should be ever vigilant, as Congressman Bartlett pointed out, but, to me, that is a real extraordinary success.

But my concern, and you all referenced it, is biological terrorism. Given the information in the report, should pharmaceutical companies sharing toxins such as botulinum with Iranian scientists and Iranian universities reconsider their relationships? And further, should the United States do more to discourage a relationship between pharmaceutical companies and Iranian researchers?

Mr. GRAHAM. I guess the answer is yes. We think that one of the most significant components of this escalating biological threat is when the capability to produce pathogens falls into the hands of rogue states and terrorist organizations.

And the United States has some controls in terms of the transmission of materials and scientific knowledge, but given the reality of what is happening, they are not sufficient to the challenge.

Mr. TALENT. If I could add to this, and this would be responsive to a question Mr. Smith had that I was going to answer but the time ran out.

The biological area here in this report, I think, is the lowest-hanging fruit in the report for the Congress. And we need better, more consistent, more unified regulations. And this area ought to be within a single agency. I think the Commission would say the Department of Health and Human Services (HHS) or the Department of Homeland Security (DHS); you guys decide. I probably would prefer DHS, except I don't have confidence in DHS's ability to do anything. But, I mean, if they could do something, this is probably something they ought to do.

And we need changes within that research community and their approaches, certainly, which is the thing that you are mentioning as well.

Mr. Smith also mentioned, what don't we need? We recommend collapsing the staff of the National Security Council (NSC) and the HSC, among other things, because we think that all they are generating now is meetings with these dual staffs.

Mr. WILSON. And when you mentioned regulations, would these regulations include barring pharmaceutical companies from doing business in the United States so long as they have a relationship as currently exists in Iran?

Mr. TALENT. We don't have that specific recommendation. But one of the reasons why I pointed out before, I think, legislation as opposed to executive action—and this is so important—is because I think this will be a big piece of legislation. It will be a vehicle for a lot of considerations, you know, what might we do in a lot of areas to make different agencies sensitive to these concerns.

And the very fact that Congress takes this in hand and legislates on it is going to make all the different agencies, foreign and domestic, aware that this needs to be a priority.

But, no, we don't specifically recommend that.

Mr. WILSON. And the Biological Weapons Convention (BWC) of 1972, does it have sufficient safeguards against providing toxins to hostile nations?

Mr. GRAHAM. The answer to that question is no. We describe that treaty as being anemic. It is now almost 40 years old. It is badly in need of major revision and strengthening. We make some recommendations as to the direction that we think that strengthening should take. But it is not serving our interests in a world in which biological advancement is moving at flank speed with a 40-year-old instrument to try to control it.

Mr. TALENT. It is too weak, and countries don't pay attention to it anyway. We endorsed the decision to withdraw from the protocol because of the verification issues. But we encourage voluntary and strong compliance with the convention and new agreements, as well.

Mr. WILSON. Thank you very much.

Mr. TAYLOR. The Chair thanks the gentleman. Now recognize the gentleman from New Jersey, Mr. Andrews.

Mr. ANDREWS. Thank you, Mr. Chairman.

Thank you gentlemen for your service to our country, both in this endeavor and prior to it. We very grateful to you.

I would like to focus on the area of fissile material in secured or unsecured storage areas and also the issue of blending down and converting highly enriched uranium (HEU) to low-enriched uranium (LEU), which is discussed, I think, on page 58 of the report.

And on page 58 of the supporting appendix, you make reference to the Baker-Cutler review process in 2001. And there is a discussion of a need to upgrade that review now, given the new dynamics that we face.

Of this committee were to lay out a set of criteria or benchmarks for a new Baker-Cutler review, what questions should we ask? What should the criteria be that we measure our progress against in that area?

Mr. GRAHAM. Well, I am going to defer to Dr. Allison for most of the answer because of his extensive expertise.

But I would say that, in my opinion, number one is to dramatically increase the focus on biological. I said yesterday that, on a scale of zero to ten, I think we are doing about an 8.5 job in terms of securing nuclear material inside Russia. We are doing a dramatically poorer job, maybe in the nature of a one, as it relates to biological.

Mr. ANDREWS. Senator, how might we compel that increase and focus on biological? What would we do to make that happen?

Mr. GRAHAM. Well, I think, first, maybe, as the Baker-Cutler Commission did, it brought focus to the issue of nuclear security; something analogous to that that would give specific focus to the issue of biological security.

Mr. ANDREWS. Thank you.

Dr. ALLISON. I had the great honor to serve on the Baker-Cutler Commission, and I think it did, with Howard Baker and Lloyd Cutler, a terrific job.

One of the things that it emphasized is that if highly enriched uranium is blended down to low-enriched uranium, it can be made into a fuel rod, used in a civilian nuclear reactor, and then effectively burned up.

And most people don't realize, but if we take the lights here, of the electricity that is powering our lights today here in the U.S., nuclear produces about 20 percent of the electricity. Half of all that electricity is low-enriched uranium rods from Russia that used to be high-enriched uranium, some of which were part of bombs or others of which could be made into bombs. So there has been this deal for 500 tons of HEU to get blended down.

We say in the report that you reference that we should incentivize another—there is another 300 tons of excess HEU sitting there. Getting it blended down in Russia or blended down and back into the markets seems to me to be a very good place to go, with respect to the nuclear piece.

And I think wherever there is highly enriched uranium or plutonium, that is stuff from which people can make a bomb. Wherever that highly enriched uranium becomes low-enriched uranium, it can't be made into a bomb. So I would say the logic of the case we have both seen working in the HEU deal that currently operates. It concludes in 2013, as the report says, and could be extended and should be.

Mr. ANDREWS. Thank you. And we would be very interested in your suggestions for the biological Baker-Cutler review the Senator mentioned, as to what questions we might ask and what criteria we might put into the statute to require that review to be properly focused.

Senator Talent.

Mr. TALENT. I think we recommend, probably in this order, the kind of domestic regulatory reform we are talking about, so we establish a model internationally and show we are taking the lead. And then we recommend calling an international conference of the major bioscience powers to begin putting in place the kind of comprehensive regime that we already have in the nuclear area.

The big strategic change we want with Baker-Cutler is moving Russia, our relationship, from a donor-recipient relationship to a partnership relationship. That strategically is what we think needs to happen so we can extend—

Mr. ANDREWS. How probable do you think that change will be five years from today? Will it happen or not?

Mr. TALENT. Well, Senator Graham really is one of our Russia experts. It was our opinion, in talking with them, that whatever the issues we have in other areas—and we have other issues—that they do want to cooperate with us in this, that they see this as consistent with their national interest.

Mr. ANDREWS. That is welcome news, indeed.

Mr. GRAHAM. And I believe that, as Russia has become economically stronger, they are unsettled by this donor-recipient relationship. And for their own national pride and now with the capability to match that pride, they are ready to be approached about a partnership rather than a philanthropy.

Mr. ANDREWS. Thank you very much.

Mr. TAYLOR. The chair thanks the gentleman. The chair now recognizes the gentleman from Colorado, Mr. Lamborn.

Mr. LAMBORN. Thank you, Mr. Chairman.

I have a very short and then a longer question.

The short question is, on page 63 of your report, you say that Iran could acquire sufficient HEU to build a nuclear bomb within 6 months to 2 years, or 24 months. This report is dated December 2nd, which is a month and a half ago. Can I conclude from that that your range now would be 4½ months to 22½ months?

Mr. GRAHAM. Yes.

Mr. LAMBORN. Okay. Thank you.

My longer question is, you also state on the next page, under recommendation number five, that such engagement with both Iran and North Korea—but I want to concentrate on Iran because they are in a different posture than North Korea, obviously, not having already gone nuclear, where direct intervention becomes much more problematic. But, in the case of Iran and North Korea, you say, “Such engagement must be backed by the credible threat of direct action in the event that diplomacy fails.”

Can you elaborate on what you mean by “credible threat of direct action”? And how important is this to happen before Iran goes nuclear?

Mr. GRAHAM. As I commented on earlier, the consequences of Iran going nuclear and of North Korea continuing to add to its warehouse of nuclear materials is unacceptable—unacceptable in the risk that they singularly would each represent and unacceptable in the consequences within the regions in which they live, the rapid escalation of the number of weaponized nuclear states.

And so we suggest a strategy which is a layered strategy, starting with engagement incentives and disincentives, but always reserving that, if those all fail, that direct action is a very difficult but necessary step to avoid the other alternative, which is a nuclear Iran and a North Korea with enough material to not only launch an attack but survive an attack and start another attack, which is potentially its capability in the foreseeable future if they continue along their current course.

Mr. TALENT. Direct action is a threat of force of some kind, as Senator Graham said.

Mr. LAMBORN. Thank you very much.

Mr. TAYLOR. Does the gentleman yield back?

Mr. LAMBORN. Yes, thank you, Mr. Chairman.

Mr. TAYLOR. Thank you very much, sir.

The Chair now recognizes the gentleman from Rhode Island, Mr. Langevin.

Mr. LANGEVIN. Thank you, Mr. Chairman.

And I would like to thank the members for their testimony and the hard work that you have put in in putting this report together.

This is an issue that I have devoted a great deal of time and attention to, and I share many of the concerns that you raised in the report. I also, in particular, reached the same conclusion that you do, that a biological attack is probably the most likely event that we need to worry about in the near term.

Let me put it in these terms. I look at these issues in terms of prevention, detection, and response as the best way to deal with them. And as much as I would like to get into all of them, let me look at the prevention, the detection issue first.

And I know we have touched on some of these already, but, in terms of a biological attack, can you identify perhaps the single greatest thing that we could do in preventing a biological attack, outside of interagency cooperation, which is something I am going to ask about as well?

There is a glaring vulnerability on the biological front that we are not doing that we need to do. In particular, now, on the interagency issue, in your report you rightly conclude that interagency coordination is a necessary step in combating terrorism, both at home and abroad. Could you elaborate on the ways interagency coordination can be improved upon?

And you recommend that President Obama should designate a White House principal adviser for WMD proliferation and terrorism and restructuring the National Security Council (NSC) and Homeland Security Council, which I agree with. But what do you believe should be the qualifications of this adviser, and how will this adviser work to actively improve interagency coordination?

My next area in terms of response, in terms of detection, obviously we want to try to push those rings out as far as possible. The first would be the deployment of biological sensors. I think most people would be surprised and disappointed to learn that we only have sensors deployed right now in about 30 major U.S. cities, and they are very human-dependent, and that it would take days to collect the samples and then analyze those samples to know even if a biological event had occurred. And we need to put more resources into deploying the next generation of sensors that would be real-time and require little to no human interaction.

So can you comment on the state of our ability to detect and then also the current state of, say, our public health system and our ability to monitor, for example, pharmacies and emergency rooms to know that an event is actually occurring? And at what level are we, in terms of the resources we are putting into that type of thing of a system, and how much more do we need to put into developing such a detection system?

Mr. TALENT. Okay. We have just been talking, Congressman. I will do the biological piece first and then defer to the chairman and Dr. Allison.

The most important thing on the biological side of it, we believe, is to get a handle and create incentives within the life science community to keep a handle on the potential misuse of dual-use technology.

Now, you have studied this. You know that the high-contaminant laboratories, some of them are not regulated at all. If they don't receive federal funds and they don't deal with agents on the select agent list, they are not regulated at all. Those that are are regu-

lated by three different agencies, HHS, DHS, and Agriculture, if it is an animal-science-type lab. A lot of those animal pathogens can be turned into pathogens that can be used against people.

So they are regulated by three different agencies, different kinds of regulatory requirements. We say get them under one agency, probably DHS or HHS. The labs have safety protocols and security protocols. Let's combine those so we have one laboratory security protocol which is uniformly followed.

Let's get into the curriculum, when scientists are going through school, that, look, security is important. And do some common-sense things. Get a Nobel Prize laureate to chair a commission and speak out about the importance of being security-conscious in the life science community. And then organize international bioscience powers and try to get them to do the same thing. I mean, we really just have not done what we needed to do in this area.

You mentioned sensors. We made an executive decision, the chairman did and I agreed with him, that we would not go heavily into consequence management. Because the problem in this kind of report is saying something without trying to say everything, right?

So we didn't get—we had testimony in New York about the sensors, and I agree, personally, that we need more of that. Because the quicker we can establish there is an attack, the better we can manage the consequence of it and maybe get attribution. So I completely agree. We didn't get heavily into that.

The one area we did say was that we have to get on the ball in dealing with anthrax. We don't have an adequate procedure for getting the Cipro out to people, and you can imagine the panic that is going to happen if people realize they are living in a city where there was an anthrax dispersal and they have 48 hours to get the Cipro, and right now we are mailing it to them.

I mean, so we have issues. But we did not get comprehensively into consequence management.

Mr. TAYLOR. The chair thanks the gentleman. The chair now recognizes the gentleman from Colorado, Mr. Coffman.

Mr. COFFMAN. Thank you, Mr. Chairman.

Let me ask a question on the nuclear side, then on the biological side.

What role, do you think, on the nuclear side, does having an effective missile defense system aid us?

And then, on the biological side, it seems so difficult to contain a biological agent. I mean, and it would seem that it would be more likely used by a non-state actor.

Where is it in terms of the science marrying up with those groups, number one? And number two, I mean, how likely a scenario is that, to be used as a weapon for a terrorist group or non-state actors?

Mr. TALENT. Yeah, we agree with your evaluation, that the use of a biological weapon is more likely than the use of a nuclear weapon. Although, I am always careful, because the nuclear weapon they are trying to get too. And either are very feasible for them.

We didn't get into missile defense because, really, it wasn't at the center of what our mandate was. I always was a supporter of missile defense. I always thought it was a more useful tool in dealing with rogue nation-states, though, than dealing with terrorists. Not

that it wouldn't have some use for that, but simply because they are more likely to use the existence of a nuclear missile and a missile delivery system, either actually use it or use it as leverage in some kind of international confrontation, and that the missile defense would defuse it.

But I think for the reasons that Dr. Allison indicated earlier, the terrorists have a wider range of options that they can use, some of which will not cause them to have a signature in using the weapon.

Mr. GRAHAM. I am now going to express a personal view that is not the Commission's view. It seems to me that we are in the area of missile defense approaching the world as it was during the Cold War. The Soviet Union had no compunction of having its name and signature on a missile that it might launch against the United States. A terrorist who is other than so lunatic that they would be institutionalized, would like to be somewhat clandestine in their form of attack. And therefore I think it is much more likely that they attack in subtle ways that do not immediately identify who is responsible. And thus as we look at the likelihood of a range of occurrences and begin to allocate our resources, I personally would like to see us put more resources on those things that would hopefully detect the non-missile delivery system because that is the one that we are most likely to in reality have to confront.

That is my position, not the Commission's position.

Dr. ALLISON. I agree with Senator Graham's personal position. Again, the Commission didn't take a view on it because since—as we were discussing earlier—there is one big hurdle for terrorists to get or make a nuclear bomb. Then secondly, to get a missile is a whole nother exercise. Third, to get a bomb that can be weaponized so that it fits as the warhead of a missile, that is rocket science. There is a third hurdle. And then fourth, if the terrorists—I am attacking you with a missile, the crosshairs of a launch site appear in an American target within a minute after the launch of a missile. So if I had the choice between something that has an unambiguous return address and a surreptitious or covert delivery system, I think the latter is a lot more attractive.

Mr. TAYLOR. Does the gentleman yield back his time?

Mr. TALENT. If you are Iran and you are considering aggression in the Mideast and you have the missile and a missile delivery system, that is a hedge against defeat in whatever conventional action you may be occurring. An effective missile defense then can diffuse that hedge, if you will. But we are discussing the nation state in the terrorist context.

Mr. TAYLOR. Thanks to the gentleman. The Chair now recognizes the gentleman from Pennsylvania, Admiral Sestak.

Mr. SESTAK. Thanks, Mr. Chairman. This was a great report on what needs to be done. And I am sure the door to the new Administration is already open for it. It won't take much pushing since some of the recommendations are similar. But the conundrum, as you kind of put out, is how to make it happen. So I only had two questions, one international. One is on the domestic aspects of your report.

And, Senator, the reason for that is for you, please, I was struck by what you said during the testimony today that you cannot solve the problems of Pakistan within Pakistan's borders. You must look

regionally to solve Pakistan's problems in this proliferation issue. How then do you sit back—and I know you only had six months, but we have some very good functional recommendations here. However, even when we dealt with, let us say, Pakistan in the report, it was still a functional counter-proliferation regime approach when you looked at anything within the region or even worldwide. Could you comment about how well can you really address counter-proliferation absent taking in regional goals of the other players and of ourselves? And is that a piece that probably by itself makes this maybe less than what you would have desired?

Mr. GRAHAM. My answer is I don't think you can do it effectively just focusing on a single nation state. As an example, the issue of Kashmir, that has been a thorn in the Indian-Pakistani relationship since those two nations were created out of the old English-Indian empire. It is one of the classic cases of kicking the can down the road with the expectation that somehow the problem is going to become less severe. The reality is that in almost all instances it becomes more severe, more ominous, and more universal. So if I were going to advise the new envoy, Mr. Holbrooke, one of the first places I would focus my attention would be on how then to begin to mitigate that controversy because as long as it is in its current state, it going to be a bleeding scab between those two countries. I would also put focus on what I suggest that the U.S. and Russia ought to do together to try to encourage those two countries to develop some protocols that will take them a little bit on less of a hair-trigger use of nuclear in the event of a conflict.

Mr. SESTAK. My second question has to do with domestically and it touches upon your answer. And, Senator, keep in mind that throughout today we heard the words "safeguards," "verification," "accounting," "counting," "missing labs, lab personnel," et cetera. And to some degree, you can only do so much if you don't have the right information. And yet the study—step back—and although my first question had to do with how can you really look at proliferation in the absence of regional goals—is your recommendation by and large to the Intelligence Community—and I know I am doing it short shrift here—is you know what, we have uprooted—you even quote General Hayden in it—every 18 months to look and see how they are doing and sticking them back in. Let us kind of leave them alone for a while. My question really comes if that is the right issue. You talk about Pakistan, if I could go back. There is 70,000 people involved in the nuclear industry in Pakistan; 8,000 of them are scientists, 2,000 of them are core, but that talent is coming from the universities which is the most radical time they have ever had in their universities. How do we know who is in those labs and what they are doing? Even though we have safeguards over what they have already produced. And my question comes really to you because you were all denied, from my understanding, access to the Intelligence Community in some regards.

For example, according to Mr. Henry Sokolski, a member of your commission, you were not permitted to have access—well, actually you got a single classified briefing on North Korea and the same on Iran and you were denied the access of how Russia is assisting Iran. How can you be certain that your recommendation to leave the Intelligence Community by and large alone, when information

and knowledge is what it is all about in the future, is the right one when you yourself didn't quite gain potentially the access to the intelligence to make that recommendation to us?

Mr. GRAHAM. Well, as someone who has spent a lot of my 18 years in the U.S. Senate in the area of intelligence, I recognize that the President of the United States is the principal customer and consumer of U.S. intelligence information and that he or she is going to be the recipient of the largest volume and the most subtle qualitative intelligence. But I felt that we had adequate access for our purposes. I did not feel that our ability to make the recommendations that we did was constrained by an absence of access to intelligence.

Second, there are a variety of ways in which the Intelligence Community can reform, one of which is what happened in 2004, which was a massive congressional restructuring of the basic architecture of the Intelligence Community. I think now we have got some very good people who have been in place, like Admiral McConnell and General Hayden, and we have another group soon to arrive, Admiral Blair and former Congressman Leon Panetta. I would entrust to them to carry these reforms to the next level.

Mr. TAYLOR. The Chair thanks the gentleman. The Chair now recognizes the gentleman from Arizona, Mr. Franks.

Mr. FRANKS. Well, thank you, Mr. Chairman. I thank all the members of the panel here. I think that the subject that you speak about today is something that perhaps the country underestimates and that your involvement is critically important. I was struck by, Dr. Allison, your comment related to certain timelines passing and reducing our ability to respond and our options. I think that is an extremely important point. Senator Talent, I consider your voice one of the great voices on missile defense in the country. And I actually believe that it is a pertinent issue here today because I believe missile defense has the ability to devalue nuclear programs to the extent that maybe they don't occur, which is how a lot of these other potential nuclear proliferation items—how—the genesis of where they would come from. And I think that we are making some pretty serious mistakes related to Iran in not making sure our missile defense capability in Eastern—in Europe and other places is not there at least as part of the dissuasion to prevent them from having that capability.

Mr. TALENT. It is the calculus that you are trying to affect. I agree.

Mr. FRANKS. And, of course, missile defense is also a good idea if one really is coming. It can be a real encouragement. But with that said, I am struck by Mr. Bartlett's scenario where someone off of our shore would watch either a Scud missile or something like that, whether it was an electromagnetic pulse (EMP) attack or directly on our country. And, Dr. Allison, I am not convinced that terrorists would be that concerned about their identity being known at that point because they can think—there is just a lot of things. And most of the terrorists on the airplane weren't too concerned that we might know their name after the deed was done.

So my question really is this: I understand that the biological threat was emphasized, and I completely agree with that. But I am focusing for a moment on the nuclear issue because I somehow

have this crazy notion in my mind that terrorists would like to see one of our cities in nuclear flames or some type of EMP attack just for the spectacular nature of it. And with that said, I am not sure that I will focus on Iran. Your own report says just how much time does the world have to seek this full clarity about Iran's past and present nuclear program and decide what to do. Experts such as David Albright of the Institute for Science and International Security (ISIS) have underscored that the timeline for Iran's acquisition of sufficient highly enriched uranium to build a nuclear bomb is ominously short. It ranges from only six months to two years.

I guess the bottom line is this: How much time do we have related to Iran gaining a nuclear capability which they could give to terrorists? How much time do we have to ascertain their capability? And will anything short of either a direct military intervention or the conviction in their minds that that will occur be enough to dissuade them?

And I will start with you, Senator Talent. And if there is time, I hope you all take a shot at it.

Mr. TALENT. We don't have a lot of time. I think the report reflects that the threat of direct action has to be on the table and the inference from that is that without the belief that the—the credible belief that will be the use, the various diplomatic issues won't work and I think that is based on inference, Iranian intentions. I said at the beginning of the hearing, these groups are trying to acquire these weapons for a reason because in the context of their goals and the globalized world, this is an asymmetric weapon of enormous power for them and to the extent that you can diffuse the effectiveness of a weapon, however you do it—and I would agree with you that missile defense is a key thing. We don't address that in the report. To the extent you diffuse the effectiveness of the weapon, you undermine their reasons for trying to get the weapon and make it less likely that they will do it. So I certainly agree with your analysis in that regard. And this is our feeling regarding Iran, without going into the tactics of how it could be done or the likelihood of being able to accomplish it.

Mr. FRANKS. Anyone else? How much time do we have and what short of direct military intervention will dissuade Iran or at least the conviction in their minds that that will occur?

Dr. ALLISON. Iran today probably has enough low-end enriched uranium (LEU)—if not today, in a month or two months—which, if it were run back through the Natanz centrifuges, could produce enough highly enriched uranium (HEU) for its first bomb. So they have already got into that zone. What we should rightly worry about is a covert Natanz that we don't know about and can't identify, which is doing the same thing. Because how likely if you were the manager of the Iranian nuclear program is it that you would put all your eggs in one basket under the lights of international inspection. I think not very good.

Mr. FRANKS. So what is your recommendation that we do about it? What is your recommendation that we do?

Dr. ALLISON. So if you try to work through the military options, one of the things for sure, you can't destroy targets that you can't identify. So trying to get to Iran in a negotiation in which you have got lots of carrots and lots of sticks making as credible as possible

that those include a military option, even though it is not a very good option, is where I would go.

Mr. TAYLOR. The chair thanks the gentleman. The chair now recognizes the gentleman from Virginia, Mr. Nye.

Mr. NYE. First of all, Senator Graham, I just want to thank you and your fellow panelists for the work and the judgement that you have obviously applied to this report. Senator Talent, I particularly appreciate your comments today on the use of soft power and the need for a greater focus on that in our time going forward, not least because I spent a considerable amount of time working with the U.S. Agency for International Development (USAID) in both Iraq and Afghanistan on democratic and economic development. And I agree with the findings in the report that Pakistan is indeed a nexus of threat and that to a large degree that threat will be centered in these Federally Administered Tribal Areas (FATA) of Pakistan.

What I would like to ask you, Senator, and the other panelists if you wish to comment, can you please give us your assessment after going through this process of both the capability and the inclination of the new government in Pakistan to work with us and be helpful in perhaps taking a more proactive look at those FATA areas in terms of applying soft power, trying to neutralize these threats?

Mr. TALENT. Officially, of course, they have the—in terms of using soft power in place of threats, that is a different issue. I think one of the things we have got to do with soft power and the tools of smart power or soft power is to create a greater sense within the Pakistani government first and other governments in similar circumstances that these kinds of tools are very helpful, and one of the goals of the use of soft power would be to communicate the intention that this is a good thing that is going to help reinforce them and their government and lead to better relationships. So that is one of the mindsets we have to create. I don't think it is there yet. I don't think—because I just don't think we have been effective in doing this. And you have had personal experience with this. We have had to use these tools or tried to use them in Bosnia. We have had to use them in Afghanistan. Now we need them in Pakistan. At what point are we going to decide this is a capability we have to have organically someplace that Presidents can deploy effectively and quickly like they deploy the capabilities that this committee oversees routinely through all three of the services.

Mr. GRAHAM. My sense is that the new government in Pakistan very much wants to create a new beginning for the country with one of its goals is to keep the country unified. I think one of the real, at least a possibility, is a splintering apart of Pakistan and with those northwest territories being likely the first to secede from the nation. A part of the reason is the fact that they feel in that area that they have not received the kind of attention and schools and hospitals, economic development that other parts of the country have. So I believe that the new government is going to make a special effort to demonstrate that it has value to those parts of the country in order to tamp down any secessionist aspirations.

Now, what is going to be the capability of the government to do that? That is yet to be tested.

Dr. ALLISON. Let me just say I am pessimistic.

Mr. NYE. Thank you for your candor. I will yield back the remainder of my time.

Mr. TAYLOR. The chair thanks the gentleman. The chair now recognizes the gentleman from Virginia, Mr. Wittman.

Mr. WITTMAN. Thank you, Mr. Chairman. Senator Graham, Senator Talent, Dr. Allison, thank you so much for all of your effort that went into this report. I think it is very, very telling. I did want to focus again on Pakistan. You do speak about some positive things going on there. You speak to President Zardari's remarks after the Marriott bombing in Islamabad, that the war on terrorism is their war. You also speak to the tribal leaders uniting, organizing against Al Qaeda both in the FATA and the North-West Frontier Province (NWFP). One thing that you have left out that I am curious about, and that is the feelings of the Pakistani Army, General Kiyani, and what General Kiyani's feelings are about this effort, about our efforts there to counter terrorism in the area to try to secure those tribal regions. I see that as a critical link with this. Obviously there is always this dynamic there between the government and the army. I want to know where do you believe General Kiyani is with this and, as you know, General Hamad there too sometimes has a little bit different feelings than General Kiyani.

Can you give us some of your overview about how you see that dynamic coming along and where that leads Pakistan in this effort?

Mr. GRAHAM. Again, I think that is a relationship that is yet to be fully tested. The general has made the right statements as to his desire to be subservient to the civilian government and function within the democratic framework. But we have had one small test when the civilian government said they would send the head of the intelligence agency to India to help with the Mumbai investigation and then the military rescinded the right of the head of the Inter-Services Intelligence (ISI) to go. That was not an encouraging sign. As Dr. Allison said, the military has in Pakistan been the only load bearing part of the society and whether they are going to be willing to see themselves as a load bearing unit carrying affirmatively the weight of democracy and protecting it is going to be one of the several key questions as to the future of Pakistan.

Dr. ALLISON. I agree with him entirely, the two comments made. I think that Kiyani in terms of his history has had a reasonable relationship with the U.S. And I think what is hard to appreciate is the turbulence from the cross currents of the environment in which they are operating. If you were to wake up some general in Pakistan in the middle of the night and say what is going on in Afghanistan, they would think what is going on in Afghanistan is negative for Pakistan and that it has something to do with Americans and Indians being in cahoots surrounding them. So if you listened to the noises after the Mumbai bombing for two weeks of universally denying Pakistani engagement of even LTs when there was one of the terrorists whom they had captured. So I would say that the—I feel very uncomfortable about the extent of which they

and we inherit the same—have the same picture of what is going on.

Mr. TALENT. And I would just add—and these two gentlemen are more expert on the Pakistanis than I am. But that situation is extremely fluid. Dr. Allison referred to cross currents. You get a leadership that is in an unstable situation like that, where they are worried about staying in power personally or their personal fortunes, they are not spending a lot of time on the long-term efforts to secure nuclear material. They are just thinking about surviving day to day. And I think that is a huge part of the problem.

Mr. WITTMAN. One quick follow-up question. Are there things that the U.S. can do to try to encourage general Kiyani in a productive way to sort of mirror the efforts there? At least President Zardari has indicated the direction he would like to see things go.

Mr. GRAHAM. I think a part of that is for the United States not to be as fixated on relations with the military as it has been in the past. And that is not just a comment for the last eight years. It goes back much further than that. We have got to give more recognition to the civilian government in order to domestically enhance its credibility as the responsible party.

Mr. TAYLOR. The chair thanks the gentleman. The chair now recognizes the gentleman from North Carolina, Mr. Kissell.

Mr. KISSELL. As everyone has said, thank you for your time and efforts. And I have got—we have covered some pretty broad ranges—a couple of just specific questions. And in anticipating a biological attack, what agent or range of agents would you think might be used and what would be the degree of danger amongst those particular choices?

Mr. GRAHAM. I think most of the experts would say that today the answer would be anthrax. It is the most available. It is the one that has been weaponized to the greatest degree. Now anthrax has a number of problems, one of which is effective dissemination. It has been tried in two or three instances, particularly in Japan. And the technical problems of getting it out there in a way that it can kill a lot of people were not resolved, thankfully.

The second problem is that anthrax is not communicable person to person. So its ability to multiply is much less. Our concern, as we talk about in the report, is that there are a lot of in some cases new and some others old pathogens that are being regenerated. For instance, in 1918 there was an influenza attack that killed up to 40 million people worldwide. That influenza has been extinct for most of the last 70 years. It has just been recreated in a laboratory. If that were to get out with the reality that we have almost no anecdotes today to that strain of influenza, it could kill a lot more than 40 million people.

So today it is anthrax. Tomorrow it is likely to be one of these more communicable and more newer or recently resuscitated pathogens.

Mr. KISSELL. We talked about Russia and hopefully since the cooperation, does Russia feel threatened that it might be attacked in this way?

Mr. GRAHAM. The answer is it is very concerned about being attacked nuclear and that is part of the reason we have had such good cooperation. It is not just all a matter of their good feeling to-

wards us. They recognize their self-interest, particularly some of the incidents that have occurred in Chechnya and the fact that they have a massive non-ethnic Russian population immediately to their south that is concerning them. But given the way they have dealt with biological, very weak security and a much less willingness to involve not just the United States, but the international community in efforts to enhance that security, we tend to—would tend to lead me to believe that they don't put as high a priority on the possibility of a biological attack as our report does.

Mr. KISSELL. And my last question. I grew up in the 1950s and the 1960s in the Cold War and the concept of mutually assured destruction, MAD. Dr. Allison, you kind of alluded to this a couple of times, that trail back to where the missile came from. The states that we are most concerned about, does the concept of mutually assured destruction affect them whatsoever and especially in terms of how they might actually be trying to control these weapons?

Dr. ALLISON. A very good question and if we take North Korea, which I would say is the most troublesome for me because Kim Jong-il has demonstrated he would sell and build a nuclear reactor in Syria when we told him he can't do that, every red line that President Bush laid down for him he stepped over. So what is deterring him from selling a nuclear bomb to Osama bin Laden? The answer is I worry about that every day. So if we had developed an adequate nuclear forensics capability so that we could credibly identify his fingerprints on that bomb and if we were prepared then to explain to him that a bomb that was made in North Korea, even if it was delivered in a boat by Osama bin Laden, would be treated by us precisely as if it had been put on a missile and shot against Los Angeles. I think he has got the idea in his head that if he were to launch a missile with a nuclear weapon against Los Angeles, North Korea would be erased from the map.

So that is MAD with respect to identifiable sources. The question is could we extend that idea in the nuclear terror space. I have been a strong advocate of trying to do so. One of the areas in which our investment pattern has been woefully inadequate is in developing that nuclear forensics capability.

Mr. TAYLOR. The chair thanks the gentleman. And I now recognize the gentleman from Florida, Mr. Rooney.

Mr. ROONEY. Thank you, Mr. Chairman. Gentlemen, thank you for your testimony. And, Senator Graham, I think it is a great honor for me that the first question I ever ask as a Congressman on a committee is to you, having worked in Senator Connie Mack's mailroom in the early 1990s and getting to ride the elevator with you and you knowing the mascot of my high school, Benjamin Buccaneer. I have always been a big fan of yours. So my question is basically just a follow-up with some of the things that have been touched on early with regard to an issue unfortunately that wasn't discussed directly in your report, and that is with missile defense.

You testified earlier that Pakistan and India didn't per se have safeguards in place, no red phone-type system. Does a missile defense system with either the United States spearheading it or another country or a series of alliances, does that have any role in that India-Pakistan—I guess it would be your opinion because it is not in the report. Do you think that a missile defense system has

any role in that area of the world, and if we have any obligations there with regard to keeping, you know, the global community safe?

Mr. GRAHAM. First, Mr. Congressman, I want to congratulate you for your election and you are going to be representing a wonderful part of our State in America and I know that your constituents are in good hands. Congratulations. And it is an honor to try to respond to your first very good question.

I would personally doubt that an investment in missile defense in the India-Pakistan region would be very productive. The reality is that the imbalance of population, with India having over a billion people and Pakistan about 150 million, plus or minus, has created on the Pakistani side the military doctrine that they have to go nuclear quickly because they cannot defend themselves against a land attack.

So I don't think that the existence of missile defense as we know today would be much of a restraint. I think what we have got to do is to work on the relationships between those two countries and try to get them to back down on the hair-trigger nature of their current military posture because Pakistan will have some justifiable basis for greater conflicts if they are not going to be overwhelmed by an Indian infantry assault.

Mr. TALENT. For follow up, Congressman. I don't want to interfere with your agenda. To me this points to a larger strategic reality that implicates the overall work of this committee. The stabilizing nature of American power and influence, to the extent that the world believes with some confidence that the United States is capable of taking the lead with other nations, of dealing swiftly and effectively with major threats to the international order, it stabilizes—whether that is through missile defense or some other tool. And to the extent that they begin to lose that confidence, we have destabilization, which is part of the danger, reason why we are afraid of a nuclear cascade.

Now let us switch to a different venue. With North Korea in possession of nuclear weapons, what do the Japanese do? If you are the leader of Japan—and of course they have a history of non-nuclear tradition—you have to consider whether you need to develop a nuclear deterrent on your own. Well, what is the reason they have it? And part of it is their tradition and part of it is their confidence that the United States—the umbrella of American power, if you will, is capable of dealing with that in some productive fashion.

So one good way to look at this and maybe try and achieve a constructive kind of agreement is to say on the question of missile defense I am a strong supporter. As an operational question, what capability do we need? But to help achieve something that strategically we all believe we have to sustain, which is the confidence in American leadership and power around the world, I agree with you, I think missile defense is a useful and flexible tool, particularly when dealing with nation states.

Thank you, Mr. Chairman. I yield back.

Mr. TAYLOR. Thank you very much.

The chair now recognizes the gentleman from New Mexico, Mr. Heinrich.

Mr. HEINRICH. Thank you. Thank you, Mr. Chair. I want to kind of return for just a moment to something that Mr. Nye brought up earlier and that is the role of soft power or smart power, particularly in Pakistan and in the Federally Administered Tribal Areas. And I didn't see—I read your recommendations regarding additional support for education and commerce efforts and particularly in that portion of the country, but I didn't see a lot of confidence or faith in the current government in Pakistan to be able to impact that on the ground. I wondered if you—where do we get the ball rolling there? How do you start that process of—you know, we are at three percent literacy for women in that region of the country. You would think there is no place to go but up from here, but how do you get that process going?

Mr. GRAHAM. I think first in terms of the U.S. role is for the United States to decide that is important to do, which is not a posture that I believe we have been in historically in our relations with Pakistan. We have with the host nation and with other members of the international community attacked these kinds of problems elsewhere in the world with some considerable success. It is not going to be easy to do it in that area of Pakistan in large part because the security is so fractious. But the fact that it is hard doesn't mean that it is not important and in this instance we think urgent to make the very best effort that we can. In the ideal world it would be with the leadership of the Pakistani government and our support. In a less than perfect world, it may be more direct action by the United States.

Mr. TALENT. I look at smart power as maybe a very significant refinement, if not an entirely new platform, a very significant upgrade to the traditional tools of diplomacy and foreign assistance, which are effective in some context, but frankly just not in others and I also see it as a more targeted tool. So I think I would maybe restate your question, if I could, to say, okay, let us say we have determined that improving literacy in Pakistan is an important way of messaging America's benign intentions. Okay? What we need is a capability for a President to be able to say right now here is the poll numbers in the area of FATA about American intentions, which is, like, way down. Now, six months from now, I want it to be three times what it is now, just as we might say this to one of our political consultants. Right? Now, I want the capability for the President to be able to say that and do that and maybe that includes improving literacy or maybe it is health care. So maybe what we do is figure out what the people in that area want the most and try and be helpful in delivering that to them. But you see how this is more targeted and in the context of a more—of a direct American goal and integrated in the rest of foreign policy. The problem is whereas if you need littoral combat capability in DOD, you target—tell the Navy that, they figure what they need, they get the capability. We don't have that mechanism in civilian agencies to do this. So Presidents are left with we can recommend these things broadly. You can't. President Obama has got to figure out how to try and do it. And right now I just don't think we have the capability to implement his directive in that regard. So he holds the bag for something he really doesn't have any authority to do.

Mr. HEINRICH. I have a second question that is on a markedly different subject and I will direct this to Dr. Allison. And I was very intrigued by the discussion regarding the lack of protocols between India and Pakistan should those countries find themselves at odds. And it occurred to me our Nation has gone to great lengths over time to make sure that our nuclear assets are secure from the sense that—just basically from very basic things, like an accidental or an unplanned ignition, and we do that through our technology and to great success. And obviously the Russians have done the same thing, judging from at least the lack of an unplanned ignition. I am curious, do India and Pakistan have the same—do they have the technical capabilities in place today to make sure that there is not something as basic as an unplanned ignition?

Mr. TAYLOR. Dr. Allison, if I may. We have two additional—

Dr. ALLISON. I will answer no.

Mr. TAYLOR. That is a great one. Okay. And if it requires further, if you could do it for the record, please, sir. The chair thanks the gentleman.

The chair now recognizes the gentleman from Maryland, Mr. Kratovil.

Mr. KRATOVIL. Thank you very much, Mr. Chairman. I want to go back to the first question that was asked by the chairman. I understand the Commission didn't want to bind the incoming, now the new President with particular recommendations as it related to Iran and North Korea. The counter to that obviously is we are in a sense looking to you for guidance on how best to deal with that issue. So without binding anyone, my question is—and perhaps, Dr. Allison, this is best towards you—what are the carrots—we know what the sticks are essentially—but what are the carrots that you think we should be using in dealing with North Korea and Iran, and I gather from all of your recommendations that we should be using various carrots and sticks seems to imply that you do believe in direct dealings with Iran. So the question is, what specific carrots do you suggest and do you—did the Commission unanimously agree that direct talks with Iran based on success with—some success with North Korea is appropriate?

Dr. ALLISON. The Commission did not have a consensus on this. Actually we had some quite strongly different views. There were some people who strongly supported the view of the Bush Administration in the first term or I would say John Bolton's views, which are the solution to the problem in North Korea and Iran is regime change and the only problem is we don't know how to do that. But in any case, that is our objective and that is the problem we should work on. We should isolate them, we should not negotiate with them. And if they do things in the meantime that we don't like, like, for example, go from having two bombs worth of plutonium to ten bombs, we should blame them for that.

So I am not giving, I think, the most charitable interpretation of that view, but you might gather I disagree with it. There is an alternative which says this is a lousy regime, it is a horrible group of people. They do starve their own people, the North Korean regime. But in any case, a North Korean regime that has two bombs worth of plutonium and no tests is hugely better than one that has ten bombs and has conducted a test. As one of my colleagues likes

to say, challenge them to conduct their first tests with two bombs and then tell them that you can't do that again. So two bombs and ten bombs in a test are two totally different worlds.

What Bush inherited is a totally different threat than what he is leaving to his successor. So in the North Korean case, if one were prepared to live with a miserable regime, but nonetheless not to threaten regime change to the regime and one were able to persuade the Chinese to exercise leverage, because the only people that have really powerful leverage with the North Koreans are the Chinese, I would say that is our best hope for trying to get that rolled back. And at this stage, I would say it is not a very great hope.

In the Iranian case, again what is it that the Supreme Ayatollah is most concerned about in Iran? It is the preservation of the regime. That is his responsibility. What is it that we say we want to do? Change the regime. Now, actually in the second term, as the negotiations developed a bit, we backed off of that somewhat. But I would say the combination of carrots and sticks for Iran would stop Iran short of a nuclear bomb, stop Iran short of highly enriched uranium. How much further can I get them back? Well, again it depends on how much I can give and how much I can threaten. But I think that hand is going to be extremely difficult. When they had zero centrifuges, it was plausible that you might stop them with zero centrifuges. When they had one cascade or two, it is possible that you might stop them with that. At this stage, I worry that even if they were to erase Natanz they already have the know-how. And what I worry about is the covert Natanz, not the one that exists. So I would say the Iranian case is quite difficult, but it would include, I believe if we are going to be successful, acknowledging that a regime that we don't like, we are going to live with because a lousy Iranian regime with no bombs is terrible, but it is a lot better than that same regime with nuclear bombs.

Mr. KRATOVIL. Mr. Chair, do I have any time remaining?

Mr. TAYLOR. Forty seconds, sir.

Mr. KRATOVIL. What country should we be most concerned about in terms of the bioterrorism threat? In other words, where are the safeguards that you suggest we need most lacking? What countries?

Mr. GRAHAM. Pakistan would again be at the top of the list. But with the biological, it is becoming a very rapidly expanding set of countries. For instance, India, Malaysia, Indonesia, Brazil are all—Cuba—developing substantial biological capabilities. That is why our recommendation is that one of the immediate steps that the new Administration should take would be to convene a conference of exactly those countries as well as the more traditional first world countries with biological capability to start from the premise that we all are at risk. The world is at risk by this and that we share a common responsibility to try to take those steps that will begin to turn that line that Dr. Allison talks about on another trajectory.

Mr. TAYLOR. The chair thanks the gentleman. The chair now recognizes the gentleman from New York, Captain Massa.

Mr. MASSA. Thank you, Mr. Chairman. Senator Graham, it is a pleasure to be with you again after years of being apart. And I am

too honored that my first question in the hearing would be directed to yourself. These are relatively straightforward. So if you will bear with me. I understand from your testimony and is it in fact the position of the Commission that the threat of biological and chemical warfare attacks against the United States from rogue nations or individual terrorist is a higher threat than those of concentrated nuclear attack, am I understanding that correct?

Mr. GRAHAM. A threat to the world, it is more likely that somewhere in the world a biological device will be used than it is—that it will be a nuclear device.

Mr. MASSA. And both you and Senator Talent with literally decades of combined Senate experience have witnessed the expenditure of tens of billions if not hundreds of billions of dollars on an anti-ballistic missile nuclear defense shield that has come under several names from Star Wars to its current environs, both in fixed missile defense as we have in the Aleutian Islands, and as the Navy and Air Force's versions for mobile. Would you agree that we have expended if not hundreds, at least tens of billions of dollars in that effort?

Mr. GRAHAM. That is a statement of fact, yes.

Mr. MASSA. So is there any situation that your Commission is aware of by which the current emphasis on strategic ballistic missile defense as it occurs today and we are spending money on today can address the potential imminent threat of chemical or biological terrorist attack as you have seen and studied in your six months of this Commission? Are the two matched up in any way at all that one could defend against the other? Specifically, for instance, anthrax.

Mr. GRAHAM. The answer is I guess it is technically feasible that a missile could have on its nose a biological weapon.

Mr. MASSA. Is it probable in your opinion?

Mr. GRAHAM. Is it—I would think that it would be unlikely that the biological weapon, which we think is the more likely to be delivered, would be delivered on a missile, beginning from the fact that the group that we are most concerned about are the terrorists and I think for them access to a reliable delivery system through a missile is highly unlikely.

Mr. MASSA. In that the power of this body is publicly seen as being a largely controlled national treasury, the power of the purse, we are in command of nothing except a small portion of the authority of the budget, do you believe it is appropriate that as a body we examine or reexamine the national allocation of funds to the strategic missile defensive initiatives to more accurately match the threats that you have described here today?

Mr. GRAHAM. As I said to an earlier question, I think that we need to have at some point in the Federal Government, Congress or the executive branch, a capability of looking at our threats, assessing what it is going to take to mitigate or eliminate those threats, and then allocating resources against some sense of prioritization, putting the most effort on those that are the most likely.

Mr. MASSA. Dr. Allison, you embody quite literally decades of experience on this subject. We are going to be spending tens of billions of dollars during my two-year term here on strategic missile

defense. Do you believe that money could be better spent in protecting us from the biological threats that you have discussed here today?

Dr. ALLISON. I believe that both nuclear terrorist threats and biological terrorist threats are greater threats to America than is the delivery of a warhead by a missile against Americans. So in the hierarchy of threats I have no question in my mind that terrorist attacks not using missiles are a greater threat than missile attacks.

There is a second question, which is how much money should we spend on defense altogether, and I tend to be mostly conservative. So I pretty much want to cover all the bets. But in terms of priorities I would focus on the greater threats to us, and I think under the current situation in which we spend, I think the current missile defense budget is nine or ten billion dollars on missile defense annually and we spend a small percentage of that on higher ranking threats doesn't make sense.

Mr. MASSA. Thank you, Mr. Chairman. I yield back the balance of my time.

Mr. TAYLOR. The chair thanks the gentleman. The Chair now recognizes the gentleman from South Carolina, Mr. Spratt. And again I want to thank you, gentlemen. We are going to wrap it up after Mr. Spratt's questions.

Mr. SPRATT. Thank you very much for your excellent testimony. I got here late, but I heard the gist of it all, and I have been doing my homework sitting here as you testify. And I think you have made an enormous contribution. You are asking for your charter to be renewed and extended. If you did that, would you use it to focus on biological threats or to more fully focus on the traditional concerns we have had over nuclear weapons and radiological dirty bombs and things of that nature? Is there any particular purpose you have in mind for the extended term, Mr. Chairman?

Mr. GRAHAM. I appreciate your asking that question, Congressman Spratt. We would—our goal, if we are asked to extend beyond submitting the report, is going to be educational. We believe the American public needs to understand the implications of what we think the risk assessments are and the need to urgently move to the steps that we have outlined to reduce that risk. So our principal activities would be things like we are doing today, responding to requests by individuals and committees of the Congress on this issue. We also have and will do briefings of the appropriate new executive officials who will have responsibility on this matter, and we will respond to requests from universities and other groups who would like to learn more. We think that last point is particularly important in light of what Senator Talent has emphasized, and that is the importance of developing within the scientific and academic community this culture of security for biological materials that is inadequate today.

Mr. TALENT. Could I add one word, Congressman, to that? I agree with everything that Senator Graham said. And we would do all of this with respect to the broad range of recommendations in the report. We tend to emphasize biological because one of our goals is to raise the visibility in that area because we think it hasn't been visible enough.

Mr. SPRATT. When you say to raise it, the level of education, are we talking about awareness, too, on the part of those who are able to synthesize DNA and constitute a real threat of unknown genomics? Is that part of your purpose, too, to go to try to begin some process for self-restraint on their part?

Mr. GRAHAM. The answer is yes. And we wouldn't be doing this alone. As an example there are now some 20 research universities which have come together to encourage this greater sense of common purpose in the use of particularly biological materials. It is being chaired by the President of Pennsylvania State University, Graham Spangler. And we would work with groups like that in supporting their efforts, as well as groups similarly who are involved in other aspects of our effort.

The book that we have published that I believe you have, whatever royalties come from that book are going to go to an American foundation which is working with the education and health care systems in Pakistan. We think that is the kind of thing that we would like to be able to continue to support.

Mr. SPRATT. We have had a program in the past that has had different names and different shorter names as well as acronyms. But it is a city-to-city—nuclear cities program, IPP, International Police. And I have forgotten what that even stands for. But it is all about engaging scientists from the nuclear, as well as the biological realm, keeping them constructively engaged instead of allowing them to take their talents elsewhere and pedaling them to the highest bidder, including some people who are up to no good.

Is this programs still working? It has been criticized in the past because the labs were taking a substantial share off the top in order to administer the program. A lot of people question whether or not it was achieving its intended purpose. Do you think it still has a role to play?

Mr. GRAHAM. Let me just answer that in one context and that is Russia, where there was great concern when the Soviet Union collapsed that there would be thousands of scientists from its large nuclear industry that would drift off into the hands of bad people. When we were in Russia in September, we asked about that question and they—and our effort, which was to provide alternative employment for those scientists. They said in the nuclear area they thought it had been highly successful. And frankly now that Russia was recovering and has more economic capability of its own, our program is beginning to retreat with victory. There has not been a similar effort on the biological side, and that would be an area that we would hope to encourage. Because we think that the way that terrorists are likely to become biologically capable is not when the terrorists becomes a biologist, but when the biologist becomes a terrorist and brings their expertise to the table of destruction.

Mr. SPRATT. We went to Vektar together some years ago. You have probably been so many times you have forgotten that particular trip. I remember looking over the shoulder of one of the biologists there in the lab and he was working on a project and he was connected by the Internet with Chapel Hill doing the same sort of work in sponsoring that particular program.

Time is just about up. Let me ask you two last questions. In raising the level of awareness to the—

Mr. TAYLOR. Mr. Spratt, if I may. We have three votes on the House floor. I am going to yield the chair to you and you can stay here as long as you want. But I am going to go try to make those votes. Okay?

Mr. SPRATT. Hit the road.

Mr. TAYLOR. I want to thank you, gentlemen, for a very, very strong and sobering report.

Mr. MCHUGH. Mr. Chairman, before you yield, would you yield to me? And we are going to see what devastation Mr. Spratt can create by himself. But I want to add my words and I am sure there will be none. Great appreciation to you and your fellow commissioners, particularly to our two former congressional colleagues. I hope we can have the opportunity, particularly in the classified setting, to submit some questions that in my mind arose during the discussion.

And in an editorial comment in closing, I would say when we are talking about ballistic missile defense (BMD) or the likelihood of chemical versus biological, I will agree with Dr. Allison—he didn't put it in these words—but we better learn very quickly how to walk and chew gum because we have got to be prepared to meet all those level of threats. And your report has helped us to focus on that and I commend and thank you for it. With that, I would yield to the acting chairman, the acting gentleman from South Carolina, Mr. Spratt.

Mr. SPRATT. [Presiding.] Two quick questions. In raising the level of attention to the biological threat which has tended to be backburnered in the past, I don't think you mean to leave the interpretation that we can let up our efforts in the nuclear area in particular.

Dr. ALLISON. Agreed.

Mr. SPRATT. That is an affirmative nod on the part of the two of you, I take it.

Mr. TALENT. We agree, Mr. Chairman.

Mr. SPRATT. And secondly, we have spent about the same amount of money on all of these programs, even though the content of what we have been spending it for has changed from year to year. About \$400 million for Nunn-Lugar, altogether the Cooperative Threat Reduction (CTR) is about two billion dollars. Do you think this is adequate particularly in light of your new found concern for biological weapons? Are we spending enough here to—

Mr. GRAHAM. In my assessment, the answer is no. And two areas—I will not repeat the biological, but I will return to an earlier question. We have been underfunding our key international agency on the nuclear side, and that is the International Atomic Energy Agency, and have been providing much of the funding in a very unstable set of small project funding. We need to reevaluate what we are—what we want the IAEA to be able to do for our benefit and what the resources are going to be required to do that. And then we need to lead the international community to provide those resources.

Dr. ALLISON. If I could briefly. I agree that the answer is no. I think—if I could recommend, I would say President Obama in the campaign said that he was going to develop a plan over the first four years of his Administration to assure that on the nuclear front

all weapons and all material everywhere in the world was locked down to a satisfactory standard. I would suggest you might challenge the Administration to come forth with that plan and a strategy for accomplishing it and saying money is not the constraint, tell us what money you need for those purposes. I don't think it is a lot more money, but I think it is somewhat more money. And I think, secondly, the flexibility to use the money in particular ways they should be challenged to say if there is some constraint that Congress is now putting on the spending of the money that is preventing you from accomplishing that objective, come back and tell us about that.

Mr. SPRATT. We will be in further touch with you. Thank you very much for your good work and for your excellent testimony today. We greatly appreciate it.

Mr. GRAHAM. Thank you very much, Mr. Congressman. And on behalf of the three of us and the other members of the Commission, we express our deep gratitude for the opportunity to present this report to such an important committee of the Congress.

[Whereupon, at 1:05 p.m., the committee was adjourned.]



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**A P P E N D I X**

JANUARY 22, 2009

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**PREPARED STATEMENTS SUBMITTED FOR THE RECORD**

JANUARY 22, 2009

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House Armed Services Committee

Chairman Ike Skelton

Opening Statement

Hearing on Preventing Weapons of Mass Destruction Proliferation and Terrorism

January 22, 2009

“Good morning. I’d like to start by welcoming my colleague, Representative John McHugh from New York, to his first hearing as Ranking Member of this committee. I’d also like to extend a warm welcome to Senators Bob Graham and Jim Talent and to Dr. Graham Allison. Thank you all for being here today – and for your hard work on the Commission dealing with the Prevention of Weapons of Mass Destruction (WMD) Proliferation and Terrorism.

“This committee was instrumental in the creation of the Commission in the 9-11 bill, and the Commission’s recent report could not be more timely. This committee authorizes the bulk of key U.S. non-proliferation programs, and our subcommittee on Terrorism and Unconventional Threats, chaired by Adam Smith, also looks broadly at issues of terrorism and counter-proliferation. We will begin the annual process of reviewing these programs when the budget is released this spring.

“The risks associated with the proliferation of WMD, particularly the risk that such weapons could fall into terrorist hands, are some of the gravest threats facing our country. Since the end of the Cold War, the world has experienced a new era of proliferation.

“In the last eight years alone, North Korea has tested a nuclear weapon and expanded its nuclear arsenal; Iran has rapidly developed capabilities that may enable it to build nuclear weapons; authorities uncovered a far-reaching nuclear nonproliferation network run by Dr. A.Q. Khan of Pakistan; nuclear arms rivalries have intensified in Asia and the Middle East; changes in civil nuclear power programs have challenged the nonproliferation regime; the spread of biotechnology has increased the availability of pathogens and technologies for sinister purposes;

and dangerous chemical, nuclear, radiological, and biological materials have remained poorly secured throughout the world.

“At the same time, terrorism has spread around the globe, and Pakistan has experienced rapid political change and internal economic and security challenges while terrorist safe havens have grown in its border areas.

“Yet U.S. policy and strategy have not kept pace with the growing risks associated with WMD proliferation and terrorism, and have failed to fully address the serious WMD concerns raised by the 9-11 Commission. Nonproliferation and threat reduction programs and activities have been underresourced and remain too narrow in scope; engagement with other countries and international regimes on WMD threats has been insufficient; and the inter-agency process has lacked the leadership, coordination, flexibility and innovation necessary to effectively address these threats. This must change.

“This committee has already taken a number of important steps on U.S. non-proliferation and threat reduction programs that have moved these programs in the right direction. However, there are additional opportunities to address WMD threats.

“The U.S. must do what we can to secure and reduce WMD and vulnerable WMD-usable material around the world, and to reduce the risk that such dangerous weapons and material could ever fall into terrorist hands. However, while we must do more, the fact remains that we inevitably will be required to make difficult assessments of risk in order to prioritize our efforts. I look forward to the Commission’s recommendations in this regard.”

**Statement of Senator Bob Graham, Chairman,  
Senator Jim Talent, Vice-Chairman, and  
Dr. Graham Allison  
of the Commission on the Prevention of Weapons of Mass Destruction  
Proliferation and Terrorism  
Before a Hearing of the House Armed Services Committee  
January 22, 2009**

Thank you, Chairman Skelton and Congressman McHugh for this opportunity to address the House Armed Services Committee.

As you are aware, House Resolution 1 of 2007, the legislation that established the Commission, wrote into law some of the main recommendations of the 9/11 Commission report. The 9/11 Commission determined that “[t]he greatest danger of another catastrophic attack in the United States will materialize if the world’s most dangerous terrorists acquire the world’s most dangerous weapons,” and found that preventing the proliferation of such weapons warranted “maximum effort.” Accordingly, Congress created a follow-on commission to address the grave threat that the nexus of international terrorism and the proliferation of weapons of mass destruction poses to the security of the United States and the world. The Congress asked our Commission to assess the U.S. government’s current activities, initiatives, and programs aimed at preventing WMD proliferation and terrorism, and to lay out a clear, comprehensive strategy for the President and Congress—including a set of practical, implementable recommendations.

The nine Commissioners—five Democrats and four Republicans—were selected by the majority and minority leadership of the House and Senate. The mandate of our Commission was broad and the timeline short—only about six months from start to finish. The Commissioners were determined to produce a consensus, bipartisan report, and we succeeded in doing so.

Early on, the Commission decided to focus its inquiry and recommendations on nuclear and biological weapons because these two categories of WMD have the greatest potential to cause massive casualties.

We began by conducting a survey of existing U.S. government policies and programs to prevent WMD proliferation and terrorism, including interviews with more than 250 government officials and outside experts, as well as research trips to Sandia National Laboratory in New Mexico and to London, Vienna, and Moscow. In September we were on our way to Islamabad, Pakistan, to gather information for our report when the Marriott Hotel where we planned to stay was blown up in a terrorist attack, killing sixty people, only hours before our arrival. This shocking incident brought home to all of us the reality and immediacy of the terrorism threat emanating from Pakistan.

The bottom line of the Commission report is that, despite our prevention efforts to date, our margin of safety against WMD terrorism is shrinking, not growing. Indeed, we believe that unless urgent preventive action is taken, a terrorist attack involving a weapon of mass destruction—nuclear, biological, chemical, or radiological—is more likely than not to occur somewhere in the world in the next five years.

Our report concludes that although an incident of nuclear terrorism would be catastrophic, a biological attack that inflicts mass casualties is more likely in the near term because of the greater availability of the relevant dual-use materials, equipment, and know-how, which are spreading rapidly throughout the world. Accordingly, we argue that U.S. government efforts to combat bioterrorism should place a greater priority on preventive measures, in addition to enhancing existing U.S. government efforts in the areas of response and consequence management.

## **Pakistan**

Pakistan is a major focus of our report because of its terrorist networks, history of instability, and nuclear arsenal of several dozen warheads. Indeed, were one to map terrorism and WMD today, all roads would intersect in Pakistan. Not only does that country have a history of unstable governments, but parts of its territory—the Federally Administered Tribal Areas (FATA)—are currently a safe haven for al Qaeda and other terrorists. Moreover, given the tense history of Pakistani-Indian relations, including a series of wars over Kashmir, India and Pakistan’s buildup of nuclear weapons is exacerbating the prospect of a dangerous nuclear arms race in South Asia that could lead to a nuclear conflict.

Pakistan is a U.S. ally, but many government officials and outside experts believe that the next terrorist attack against the United States—possibly with weapons of mass destruction—is likely to originate from within the FATA in Pakistan. The Commission agrees. As a major nexus of proliferation and terrorism, Pakistan must top the list of priorities for the next administration. The Commission recommends that the President and Congress pursue a comprehensive policy that works with Pakistan and other countries to (1) eliminate terrorist safe havens through military, economic, and diplomatic means; (2) secure nuclear and biological materials in Pakistan; (3) counter and defeat extremist ideology; and (4) constrain a nascent nuclear arms race in Asia.

#### **Biological Threat and Recommendations**

For those of you who are not familiar with the biological weapons issue, these weapons are disease-causing microbes (chiefly bacteria and viruses) and toxins (poisonous substances produced by living creatures) that have been harnessed for the purpose of incapacitating or killing humans, livestock, or crops. The process of turning a natural pathogen into a WMD begins with acquiring a sample of a disease-causing microbe from a natural source, such as a sick animal, or stealing it from a laboratory or culture collection. Because most pathogens and toxins are not effective weapons in their natural state, they must be processed or “weaponized” and then combined with a delivery system to make them capable of being dispersed as an aerosol cloud that is capable of producing large numbers of casualties.

Although no states admit to possessing biological weapons, about a half-dozen countries are suspected of pursuing such programs in secret. Biological weapons may also be attractive to terrorists because of their potential to inflict mass casualties and to be used covertly. In addition, as demonstrated by the anthrax letter attacks of fall 2001, even small-scale attacks of limited lethality can elicit a disproportionate amount of terror and social disruption.

At present, given the difficulty of weaponizing and disseminating significant quantities of a biological agent as an aerosol cloud, government officials and outside experts believe that no terrorist group has the operational capability to carry out a mass-casualty attack. But they could develop that capability quickly if they were able to recruit technical experts with experience in national bioweapons programs. Accordingly, the Commission concluded that the United States should be less concerned that terrorists will become biologists and far more concerned that biologists will become terrorists.

In addition to the current threat of bioweapons proliferation and terrorism, a set of over-the-horizon risks is emerging, associated with recent advances in the life sciences and biotechnology and the world-wide diffusion of these capabilities. One area of intense activity, based on the availability of automated machines that can synthesize long strands of DNA, is known as “synthetic genomics.” By piecing together large fragments of genetic material, scientists have been able to assemble infectious viruses. As DNA synthesis technology continues to advance, it will soon become feasible to synthesize nearly any virus whose DNA sequence has been decoded, such as the smallpox virus, which was eradicated from nature in 1977. The only way to rule out the harmful use of advances in biotechnology would be to stifle their beneficial applications as well—and that is not a realistic option. Instead, the dual-use dilemma associated with the revolution in biology must be managed on an ongoing basis.

The Commission divided its biological recommendations into domestic and international measures. On the domestic side, we call for: (1) conducting a

comprehensive review of the domestic program to secure dangerous pathogens to ensure that this program is effective without harming life-saving research or international collaborations, (2) developing a national strategy for advancing bioforensic capabilities to help trace the source of the pathogen used in a bioterrorist attack, (3) tightening U.S. government oversight of high-containment laboratories that work with the most dangerous pathogens, and (4) promoting a “bottom-up” culture of security awareness in the life sciences community.

In addition, despite our mandate to focus on prevention, the Commission stresses the importance of enhancing the nation’s capabilities for rapid response to prevent biological attacks—particularly with anthrax, considered the most likely near-term threat—from inflicting mass casualties. Such enhanced response capabilities can have a deterrent effect by thwarting the objectives of would-be bioterrorists.

On the international side, the Commission calls on the United States to press for an international conference of industrialized and emerging countries with major biotechnology industries to discuss the norms and safeguards needed to keep dangerous pathogens out of the hands of terrorists and to ensure that the global revolution in the life sciences unfolds safely and securely. Second, we recommend that the Department of State lead a comprehensive effort to prevent the emergence of new biological threats, as well as reduce existing threats. This initiative would involve conducting a global assessment of pathogen security, developing a prioritized list of countries where poorly secured collections of dangerous pathogens are at risk of theft or diversion, and devising a comprehensive strategy for assisting these countries to upgrade their pathogen security measures. Third, we call on the U.S. government to help strengthen global networks for epidemic detection and response, which can provide an “extended defense perimeter” for the United States by making it possible to detect and contain outbreaks of contagious diseases, whether natural or human-caused, before they reach U.S. shores.

Finally, the Commission notes that the 1972 Biological Weapons Convention is the legal and normative foundation of international efforts to prevent the use of disease as

a weapon by any government, terrorist group, or individual. As such, the Convention and its member states must play a prominent role in future initiatives to combat biological proliferation and terrorism. We concluded that the U.S. decision in 2001 to withdraw from BWC protocol negotiations was fundamentally sound and that this previous effort should not be resumed; however we believe it is essential that the next administration reaffirm the critical importance of the Convention and lead member states beyond the lingering malaise of the failed protocol negotiations.

History has shown that it is extraordinarily difficult to verify compliance with the BWC because virtually all biological materials, equipment, and facilities are dual-use. This verification problem has been compounded by the spread of advanced biotechnology around the world. The well-intentioned effort by the United States during the 1995–2001 protocol negotiations to promote confidence-building “transparency” was undone by the unrealistic view of European and other allies that compliance with the BWC could be verified by an international organization, and by the determination of Iran, Russia, and others to exploit the protocol to undermine international nonproliferation efforts and the convention itself.

At the same time, we recognize that U.S. policy on biological weapons cannot rest solely on opposition to the BWC protocol. To signal the political importance that the United States attaches to preventing biological weapons proliferation and terrorism, we call on the next administration to send a senior-level U.S. official to address the Seventh BWC Review Conference in 2011. During the two years leading up to the review conference, we recommend that the United States work with allies and other parties to develop new initiatives aimed at achieving universal adherence to the BWC and promoting effective national implementation, especially with respect to the prevention of bioterrorism.

#### **Nuclear Threat and Recommendations**

The world today confronts a growing nuclear risk. Some states seek to acquire nuclear weapons, while others are looking to expand their arsenals. One reason for growing concern about the spread of nuclear weapons is the prospect of a large increase in nuclear power generation to meet world energy demands—the so-called “nuclear renaissance.” Of particular concern is the interest by some states in acquiring a nuclear fuel cycle, particularly Iran’s efforts to build uranium-enrichment facilities and North Korea’s efforts to reprocess the plutonium associated with spent nuclear fuel. If such facilities spread, so will the number of states with the knowledge and capability to produce nuclear weapons. Such facilities would also increase the risk that fissile materials could be diverted to, or stolen by, terrorist groups.

Over the past several years, the United States, Russia, France, and Britain have significantly reduced their arsenals of nuclear weapons. At the same time, however, Pakistan, India, and China have increased their nuclear capabilities, along with the role played by nuclear weapons in their strategic postures.

The emergence of this new kind of arms race in Asia increases the risk of a regional nuclear incident whose effects would be catastrophic, both regionally and globally. Analysts estimate that a nuclear exchange between India and Pakistan that targets cities would kill millions of people and injure millions more. The risk of a nuclear war between the two neighbors is real, given their ongoing dispute over Kashmir and the possibility that terrorist attacks by Pakistani militant groups could ignite a military confrontation – the recent attacks in Mumbai underscore this point.

With respect to the threat of nuclear terrorism, al Qaeda is judged to be the sole terrorist group currently intent on conducting a nuclear attack against the United States. U.S. government officials and leading experts assess that al Qaeda probably does not currently have the nuclear materials or the technical expertise necessary to produce a nuclear weapon. Nevertheless, they warn that the terrorists’ ability to produce such a device could increase dramatically should they recruit just one or two individuals with access to nuclear materials and knowledge of nuclear weapons designs. It is therefore

imperative that national authorities secure all nuclear weapons and materials at the source.

To address the growing problem of nuclear proliferation and terrorism, the Commission made three key recommendations. The first focuses on how to revitalize the nonproliferation regime, which has the Nuclear Nonproliferation Treaty (NPT) and its implementing organization the International Atomic Energy Agency (IAEA) at its core. In recent years, the effectiveness of the NPT has been eroded by the international community's inability to halt the nuclear weapons programs of North Korea and Iran, and by a shortfall in the resources of the IAEA, which has been burdened with an expansion of its existing safeguard functions and a growing mandate.

The Commission recommends:

- imposing a range of penalties for NPT violations and withdrawal from the NPT, including shifting the burden of proof to the state under review for noncompliance; and
- strengthening the IAEA, to include identifying the limitations to its safeguarding capabilities and providing the agency with the resources and authorities needed to meet its current and expanding mandate

We also need to build support for halting the spread of nuclear fuel-cycle facilities and the associated technical information, both of which are key to producing fissile material for nuclear weapons. Our recommendations in this area include:

- ensuring access to nuclear fuel, at market prices to the extent possible, for non-nuclear states that agree not to develop sensitive fuel-cycle capabilities and are in full compliance with international obligations;
- orchestrating an international consensus that there will be no new states, including Iran and North Korea, possessing uranium-enrichment or plutonium-reprocessing capability; and
- discouraging to the extent possible the use of financial incentives for the promotion of civil nuclear power.

The Commission also recommends the expansion and strengthening of other nonproliferation and counterproliferation measures that are not directly related to the NPT. These measures include:

- counterproliferation initiatives, such as the Proliferation Security Initiative and the Global Initiative to Combat Nuclear Terrorism;
- cooperation with other states to promote and maintain a moratorium on nuclear testing; and
- a more stringent international definition of “appropriate” and “effective” systems for nuclear security and accounting.

The Commission’s report also addresses the security of nuclear weapons and fissile materials. Together, the United States and Russia possess about 95 percent of the world’s nuclear material. Since the breakup of the Soviet Union, the United States has spent billions of dollars securing nuclear weapons, materials, and technology in Russia and other former Soviet republics. In recent years, however, the world has changed, and the Cooperative Threat Reduction (CTR) program must adapt to these new realities. The Commission recommends that the new President undertake a comprehensive review of cooperative nuclear security programs in order to develop a new strategy that addresses the worldwide expansion of the proliferation threat and Russia’s transition from being a recipient of CTR assistance to becoming a full partner in these efforts.

In its final recommendation in the nuclear area, the Commission focused with special urgency on the nuclear proliferation designs of Iran and North Korea. We believe that the nuclear aspirations of these two countries pose an immediate and urgent threat to the nonproliferation regime, and that their acquisition of nuclear weapons stockpiles would trigger a cascade of proliferation that could lead to the unraveling of the NPT. For this reason, the Commission believes that the United States, together with other nations, must develop a combination of incentives and disincentives to address these two problem cases and ensure the permanent cessation of all nuclear-weapons-related efforts.

Because of the dynamic international environment, the Commission chose not to address the precise tactics the next administration should use to achieve the strategic objective of halting the nuclear weapons programs of Iran and North Korea. If, as appears likely, the next administration decides to engage directly with the Iranian and North Korean governments, it must do so from a position of strength, emphasizing both the benefits of abandoning their nuclear weapons programs and the enormous costs of failing to do so. Such engagement must be backed by the credible threat of direct action in the event that diplomacy fails.

### **Russia**

One of the most difficult issues facing the next administration will be relations with Russia. Over the past decade, the post-Soviet promise of a democratic Russia has not materialized, and concerns about how Russia is pursuing its interests in Eastern Europe and the states of the former Soviet Union are increasing. Of all of America's interests involving Russia, none is more vital than reducing the risk of the accidental or intentional use of nuclear and biological weapons against our nation and its allies from a source in Russia.

As great powers with sometimes divergent interests, the United States and Russia inevitably will have disagreements. But both governments have a responsibility to prevent their disagreements from interfering with their critical mutual interests—preventing the proliferation and use of nuclear and biological weapons, and keeping WMD out of the hands of terrorists. The two countries also have a common interest in pursuing further strategic nuclear reductions.

To this end, the Commission believes we should emphasize these areas of common interest and work together to prevent WMD proliferation and terrorism. Examples of areas in which the United States and Russia can develop joint initiatives include:

- extending the essential verification and monitoring provisions of the Strategic Arms Reduction Treaty;

- advancing the Global Initiative to Combat Nuclear Terrorism, United Nations Security Council Resolution 1540, and the Proliferation Security Initiative;
- sustaining security upgrades at sensitive sites in Russia and elsewhere, and finding ways to further reduce stockpiles of highly enriched uranium;
- encouraging China, Pakistan, and India to announce a moratorium on the production of fissile materials and to reduce their existing nuclear stockpiles; and
- offering assistance to other nations, such as Pakistan and India, in developing nuclear confidence-building measures like those between the United States and the Soviet Union during the Cold War.

#### **Government Reorganization**

With respect to government organization, we recommend that the next Congress amend Public Law 110-53 to eliminate the requirement to establish an office of the U.S. Coordinator for the Prevention of Weapons of Mass Destruction Proliferation and Terrorism. At the same time, Congress should preserve the mandate to appoint a senior White House advisor whose sole responsibility is to serve as the President's advisor and overseer of the policy nexus between WMD proliferation and terrorism. To be effective, the senior advisor must be seen as speaking for the President by all relevant departments and agencies, as well as the White House. In the view of the Commission, the position of senior advisor should not be Senate-confirmed, as currently required by law, and could be placed within the NSC structure or within the Office of the Vice President, or made the head of a separate White House office.

Another of the Commission's major recommendations deals with the current organization of the Executive Branch with respect to the prevention of WMD proliferation and terrorism. Today, the President's national security policymaking is overseen by two parallel councils: the National Security Council and the Homeland Security Council. Over the past several years, having two separate councils and staffs has caused redundancy and diffused accountability through multiple, often conflicting Policy Coordinating Committees. The Commission proposes to create a more efficient and

effective policy coordination structure by consolidating the NSC and HSC staffs under the NSC framework and eliminating existing redundancies.

The Commission also calls on Congress to reform its oversight structurally to better address intelligence, homeland security, and crosscutting 21<sup>st</sup> century national security missions such as the prevention of WMD proliferation and terrorism. Specifically, we believe that both the House and Senate should establish independent intelligence appropriations subcommittees with authority over the intelligence budget (specifically, both the National Intelligence Program and Military Intelligence Program) and that only the homeland security committees should have jurisdiction over the Department of Homeland Security and its constituent agencies.

Congress should also establish an office to provide technical and scientific advice on cross-cutting national security issues, similar to the Office of Technology Assessment, which served this function for over twenty years, and Congress should work with the next administration to ensure that key aspects of U.S. law are followed with respect to required assessments of nuclear proliferation risks and the relative economic cost of civilian nuclear projects overseas.

With regard to the intelligence community, the Commission recommends that the Director of National Intelligence accelerate the integration of effort among the counterproliferation, counterterrorism, and law enforcement communities to address WMD proliferation and terrorism issues; strengthen expertise in the nuclear and biological fields; prioritize training and retention of people with critical scientific, language, and foreign area skills; and ensure that the threat posed by biological weapons remains among the highest national intelligence priorities for collection and analysis. We also call on the President and Congress to build a national security workforce for the 21<sup>st</sup> century; we need to attract and retain people with critical scientific, technical, cultural and linguistic skills in all agencies.

The Commission also recommends that U.S. counterterrorism strategy counter the ideology behind WMD terrorism. We call on the president to develop a more coherent and sustained strategy and the capabilities for global ideological engagement to prevent future recruits, supporters, and facilitators of terrorism.

Finally, the Commission strongly believes that the next administration must work to openly and honestly engage the American citizen, encouraging a participatory approach to meeting the WMD challenges of the new century. There should not be a wall between the government and its citizens—instead we need citizens to serve in the government and share their knowledge and expertise, and the government to empower citizens to bolster federal, state and local government efforts.

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In conclusion, although the Commission believes that WMD proliferation and terrorism pose an urgent and growing threat to U.S. national security, we also believe that a WMD attack is a “preventable catastrophe,” and that the next administration and Congress can undertake a series of practical and implementable steps that will make us safer. We hope that the House Armed Services Committee can take action at the beginning of the 111<sup>th</sup> Congress on the recommendations specifically pertaining to congressional reform. In addition, we believe that quick action can and should be taken, in concert with the new administration, on the WMD Coordinator, Homeland Security Council, tightening domestic biosecurity, and on a new Pakistan strategy. We pledge to work with you and your staff to develop further concrete steps to implement our other recommendations.



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**QUESTIONS SUBMITTED BY MEMBERS POST HEARING**

JANUARY 22, 2009

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### QUESTIONS SUBMITTED BY MR. FORBES

Mr. FORBES. Clearly, obtaining a nuclear weapon is very difficult but biological weapons are more readily available and require a different and lesser technological skill set and more readily available materials. Based on your studies, what is a possible scenario and how can we undertake a proactive stance today that would prevent this event?

Mr. GRAHAM, Mr. TALENT, and Dr. ALLISON. Our commissioners unanimously concluded that unless we act urgently and decisively, it was more likely than not that terrorists would use a weapon of mass destruction somewhere in the world by the end 2013. We also concluded that terrorists are more likely to obtain and use a biological weapon than a nuclear weapon. On December 2, 2008, the Director of National Intelligence publicly agreed with this assessment.

Possible bioterrorism scenarios range from a domestic lone-wolf contaminating a salad bar in a fast-food restaurant, to small- and large-scale bioattacks by non-state actors, and bioattacks on a catastrophic scale by a nation-state.

Preventing nuclear terrorism is simple in concept: keep terrorists from obtaining highly enriched uranium or plutonium. If they don't have these materials, they will not be able to build a nuclear weapon.

The classic nuclear nonproliferation model—locating, locking down and eliminating loose nuclear materials—is not applicable to the bio threat. This is true for several reasons. First, highly enriched uranium and plutonium do not exist in nature, while virtually all of the potential bioterrorism pathogens are found across the globe. Second, the engineering skills necessary to build a nuclear weapon are highly specialized. The skills needed to produce a bioweapon, on the other hand, are today possessed by graduate students. Lab technicians isolate anthrax, plague, tularemia and other deadly pathogens every day as they treat patients or conduct research in human and veterinary medicine. And every crop-dusting farmer knows the process to spray live biological materials. Third, the equipment needed to produce large quantities of weapons-grade pathogens can be purchased on the Internet for little more than what you would pay for a used minivan. Thus, the pathogens in question cannot be contained, the equipment needed to produce them is readily available, and their application is common knowledge. The false notion that bioweapons can be contained through the same policies as nuclear weapons must be discarded.

Unfortunately, the only thing that nuclear weapons and bioweapons do have in common is that the potential lethality from a properly executed biological attack could rival or exceed that of a nuclear weapon.

Fortunately, there are proactive steps that the nation can take against a biological attack. These actions include continued support and investment in international treaties such as the Biological Weapons Convention (BWC), support for U.N. Resolution 1540, and common-sense security measures for U.S. labs.

U.S. leadership at the upcoming 2011 Review Conference of the BWC is essential. The 1972 BWC outlaws biological weapons, bars parties from providing assistance to anyone seeking them, and obligates governments to take any necessary measures to prevent anyone on their territory from obtaining biological weapons. To be clear, the Commission believes that the U.S. decision to withdraw from the 2001 BWC Protocol negotiations was sound. However, opposition to the Protocol is not a firm basis for U.S. policy. We must lead by promoting a new approach for strengthening national implementation of the BWC. One clear way to convey the importance that the U.S. places on halting proliferation would be for the Obama Administration to send a high-level official to address the Conference.

Between now and 2011, the United States should work with its allies to promote measures that would ensure more effective national implementation of the BWC. The ability of the U.S. to exercise maximum influence to enhance the global effort to avoid the proliferation of biological weapons would be significantly advanced if Congress were to adopt the recommendations of the Commission. This action would position the U.S. as having the gold standard for national security of biological weapons or materials.

These steps are essential, but their adoption and adherence will not stop a determined adversary.

Given the accessibility of the pathogens in question, and the skills and equipment needed to produce them, everyone must understand that there are clear limits to what can be done to *prevent* an attack. In order to deter such an attack, or severely limit its lethality, the United States must develop the capabilities to (1) rapidly recognize a pathogen or biological weapon, (2) treat the population before illness sets in, and (3) be able to vaccinate those who could be exposed in the future. In short, we must develop the capability to prevent a highly lethal pandemic, or a bio attack from becoming a bio-Katrina and causing mass casualties. Our ability to develop these capabilities is not a matter of speculation, it is a question of our nation's budgetary priorities.

As stated in our attached article, "Bioterrorism: Redefining Prevention," we expanded the use of the word prevention when referring to the bio threat. We must pursue all traditional forms of prevention, but America must also be prepared to prevent a bioattack from becoming a biocatastrophe. This is why we strongly support investments in programs that will improve capabilities for rapid recognition, rapid response and rapid recovery. There is no higher priority than properly funding the Biomedical Advanced Research and Development Authority (BARDA) at the Department of Health and Human Services. America must have the capability to produce vaccines and therapeutics rapidly and inexpensively.

Developing these capabilities will require significant logistical and technological advancements. However, within these enormous challenges lies an opportunity for no-regret investments in our national security, economic growth, and technological dominance. The United States has an opportunity to lead the world by innovating how vaccines and medicines are made, so that they can be made more rapidly and less expensively. Improving the infrastructure to respond to a public health crisis (whether an attack or a natural event) is an opportunity to improve U.S. national security and for global American leadership, technical innovation, and economic stimulus.

Mr. FORBES. The Commission did a good job with regards to Iran, Russia and North Korea in terms of state-sponsored WMD. What are your perceptions regarding China and its role in the proliferation of nuclear weapon technology and capability, particularly with respect to non-state entities and countries that we would not consider allies?

Dr. ALLISON. As the emerging superpower and, potentially, a future target, China has an opportunity and vital interest to lead in preventing nuclear terrorism and proliferation. As has been repeatedly demonstrated over the last several years, China is the only party that could plausibly orchestrate the complete, verifiable elimination of North Korea's nuclear arsenal. Further, due to its long history of relations with Islamabad, China has an important role to play in the Pakistani case as well.

Rather than seeing China as a competitor or spoiler, in an effort to bolster the nonproliferation regime and enhance nuclear security globally, we should enlist it as a leading partner in President Obama's ambitious nuclear security agenda.

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#### QUESTIONS SUBMITTED BY MR. WILSON

Mr. WILSON. Given the information presented in the report, should entities sharing select agents and toxins such as botulinum toxin with Iran and Iranian universities, and collaborating with scientists in Iran on the handling and manipulation of toxin[s], reconsider those relationships? Furthermore, should the U.S. be doing more to ensure that entities that have these relationships are not incentivized to continue and/or expand these relationships?

Mr. TALENT. The current regulatory scheme in the U.S. regarding Iran is extensive, and precludes legally sharing select agents and toxins such as botulinum toxin to Iranian universities without extensive oversight and licensing from the U.S. government.

Domestically, aliens from Iran are prohibited from possessing select agents, of which botulinum is one. Within the U.S., select agents are regulated by the Department of Health and Human Services (HHS) and the Department of Agriculture (USDA). The possession and transfer of the toxin is restricted to those people who have (1) received a Security Risk Assessment (SRA), which entails a background check performed by the Department of Justice (DOJ), and (2) are working in a facility that is cleared for select agents and has been inspected by either HHS or USDA. According to the *USA PATRIOT Act* (2001), aliens from Iran, and other countries determined by the Department of State to have provided support for international terrorism, are considered to be restricted persons and are prohibited from possession

of select agents. For export of select agents such as botulinum toxin, the regulatory regime is likewise extensive:

- According to the Treasury's Office of Foreign Assets Control (OFAC), U.S. persons generally may not enter into any transactions, including exports of goods or services, to Cuba, Iran, and Sudan or to foreign nationals from those countries.
- Articles of military significance, of which botulinum toxin would be considered, are subject to export controls that are part of the State Department's International Traffic in Arms Regulations (ITAR). ITAR-controlled items and services may not be exported from the U.S. without a license from the State Department's Directorate of Defense Trade Controls.
- U.S. companies may not engage in export transactions involving persons whose export privileges have been revoked or suspended, or with entities known to have ties to embargoed countries, terrorist organizations, or international narcotics traffickers. There are lists maintained by Treasury and State for this determination.
- Export control regulations prohibit exports of any items when the exporter knows that the items will be used in connection with the proliferation of nuclear, chemical or biological weapons.

Again, the current export regulatory scheme in the U.S. precludes the legal transfer to Iranian universities without extensive oversight. The process does not appear to be currently incentivized in the slightest.

Mr. WILSON. The [Commission] report states that "to counter the threat of Biological Weapons proliferation and terrorism will require concerted action across a continuum that extends from prevention to consequence management." Does prevention include limiting companies which may be involved in the proliferation of Weapons of Mass Destruction from having full access to United States markets?

Mr. TALENT. Detecting companies transferring WMD technology is usually a function of good intelligence and law enforcement work. There are a host of U.S. statutes governing the export of U.S. technology, especially pertaining to weapons of mass destruction, and it has long been the policy of the United States to encourage other states to enact and enforce strong export control laws.

In April 2004, the U.N. Security Council adopted United Nations Security Council Resolution 1540, establishing for the first time binding obligations on all U.N. member states under Chapter VII of the U.N. Charter to take and enforce effective measures against the proliferation of WMD, their means of delivery, and related materials. UNSCR 1540, if fully implemented, can help ensure that no State or non-State actor is a source or beneficiary of WMD proliferation. All states have three primary obligations under UNSCR 1540 relating to such items: to prohibit support to non-State actors seeking such items; to adopt and enforce effective laws prohibiting the proliferation of such items to non-State actors, and prohibiting assisting or financing such proliferation; and to take and enforce effective measures to control these items, in order to prevent their proliferation, as well as to control the provision of funds and services that contribute to proliferation.

If implemented successfully, each state's actions will significantly strengthen the international standards relating to the export of sensitive items and support for proliferators (including financing) and ensure that non-state actors, including terrorist and black-market networks, do not gain access to chemical, nuclear or biological weapons, their means of delivery or related materials. The Commission discussed Resolution 1540 and endorsed adherence via international initiatives like the Global Initiative to Combat Nuclear Terrorism.

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#### **QUESTION SUBMITTED BY MS. SHEA-PORTER**

Ms. SHEA-PORTER. In 2005, the National Academy of Sciences (NAS) issued a report called "Safety and Security of Commercial Spent Nuclear Fuel Storage: Public Report." This report concluded, "Spent nuclear fuel stored in pools at some of the nation's 103 operating commercial nuclear reactors may be at risk from terrorist attacks." Among the NAS findings (Finding 2A),

"Terrorists view nuclear power plant facilities as desirable targets because of the large inventories of radionuclides they contain. The committee believes that knowledgeable terrorists might choose to attack spent fuel pools because (1) at U.S. commercial power plants, these pools are less well protected structurally than reactor cores; and (2) they typically contain inventories of medium- and long-lived radionuclides that are several times greater than those contained in individual reactor cores."

They noted the 9/11 Commission's finding (in Staff Statement No. 16, Outline of the 9/11 Plot, pages 12–13) that Al Qaeda had originally targeted nuclear plants, an indication that 'commercial nuclear plants are of interest to terrorist groups.'

The NAS committee considered many terrorist scenarios and found that spent fuel containment pools were vulnerable to attack. It found that government had not considered the risk presented by a plane flown at high speed and deliberately crashed into a commercial nuclear plant's spent fuel containment pool, which could set off fires and release large amounts of radiation.

According to CRS, spent nuclear fuel is moved from pool storage to dry storage as needed to make room for newly discharged spent fuel from reactors. So there isn't much net reduction in pool storage (except in the case of decommissioned reactors, where all the spent fuel is put into dry storage so the pools can be closed). In the four years since the NAS report, the U.S. has not made progress in converting to a safer method of storage.

My corner of New England has one of these vulnerable nuclear plants. About 1.35 million people in New Hampshire, Maine, and Massachusetts live within 30 miles of Seabrook Station Nuclear Power Plant (located in the Seacoast region of New Hampshire), and 3.8 million live within 40 miles in the Greater Boston area. An attack could be catastrophic, as a fire in the containment pool would lead to an explosion that could take out most of New England and the Canadian Maritimes, depending on the winds, for centuries.

Have you considered this particular type of nuclear threat? Please elaborate. What recommendations do you have to deal with this kind of terrorist threat?

Dr. ALLISON. I share your concern and I address that very threat in my book, *Nuclear Terrorism* (pg. 53–56). To address this vulnerability in a sustainable way, Congress must work to separate politics from science in our deliberations about Yucca Mountain as a permanent disposal site of nuclear waste.

