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THE STATUS OF UNITED STATES STRATEGIC FORCES

HEARING

BEFORE THE

SUBCOMMITTEE ON STRATEGIC FORCES

OF THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ONE HUNDRED TWELFTH CONGRESS

FIRST SESSION

HEARING HELD
MARCH 2, 2011

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THE STATUS OF UNITED STATES STRATEGIC FORCES

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON STRATEGIC FORCES,
Washington, DC, Wednesday, March 2, 2011.

The subcommittee met, pursuant to call, at 3:30 p.m., in room 2118, Rayburn House Office Building, Hon. Michael Turner (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. MICHAEL TURNER, A REPRESENTATIVE FROM OHIO, CHAIRMAN, SUBCOMMITTEE ON STRATEGIC FORCES

Mr. TURNER. Welcome to the first subcommittee hearing of the 112th Congress. I would like to commend Mr. Langevin on his leadership for the 111th Congress and congratulate Ms. Sanchez on selection as our new ranking member.

I would also like to welcome our new members on the subcommittee: Mo Brooks, John Fleming, John Garamendi, Scott Rigell, Dutch Ruppersberger, Austin Scott and Betty Sutton. Glad to have another Ohioan on the subcommittee.

Since we organized at the end of January, our subcommittee has conducted several overview briefings on various aspects of the strategic forces portfolio. Just yesterday, officials from OSD [Office of the Secretary of Defense] Policy and U.S. Strategic Command briefed Members on the administration's nuclear policy and posture.

Today's hearing provides our subcommittee with the opportunity to review the status of U.S. strategic forces. Since last year's strategic posture hearing a number of notable events have occurred, and several new policy documents have been released that affect our Nation's strategic posture and which ultimately frame the administration's fiscal year 2012 budget request.

We will hear from four distinguished witnesses. On our first panel we are joined by General Bob Kehler, the new Commander of U.S. Strategic Command; and Dr. Jim Miller, Principal Deputy Under Secretary of Defense for Policy.

I believe the committee's oversight is further enhanced through additional perspectives outside of the traditional Department of Defense witnesses we usually hear from. Therefore, I asked Dr. Bill Perry and Dr. Jim Schlesinger, the Chairman and Vice Chairman of the U.S. Strategic Posture Commission, to provide their views on our Nation's strategic posture and the changes that have occurred in the last few years. Dr. Schlesinger was unable to join us today. Our thoughts are with him, and I appreciate Dr. Keith Payne filling in for him.

I want to thank each of our witnesses for appearing today and thank them for their service and leadership.

I will keep my comments brief to allow ample time for Members to ask questions; however, I would like to highlight four areas of concern, and I hope our witnesses will address these issues here today.

First, the ink is barely dry on the New START [Strategic Arms Reduction Treaty] Treaty, and administration officials are already discussing further nuclear force reductions. The assumption appears to be that more arms control and deeper cuts to U.S. forces is desirable and puts us further down the path to a "world free of nuclear weapons," a vision the President described in his 2009 Prague speech. We must be careful here. The President admitted in that same speech that this vision is unlikely to be realized in our lifetimes. We should slow down, let the treaty ink be dry, and reassess where we are. Our security requirements should guide the feasibility and desirability of further reductions, not the other way around.

One reason for caution is uncertainty. None of us can predict the future. China is "rapidly upgrading its nuclear capacity, and is trying to reach parity with Russia and the U.S." Russia would have us trade away our missile defenses, conventional forces, and space capabilities to secure another arms control treaty that reduces their tactical nuclear weapons.

In the last few months, NATO [North Atlantic Treaty Organization] has reaffirmed that nuclear deterrence is a core element of alliance security. In the last week, a senior South Korean official suggested the United States reintroduce tactical nuclear weapons on the Korean Peninsula for deterrence and assurance. There are long-term implications of a rush to reduce our nuclear forces that merit thoughtful consideration.

Second, the Nuclear Posture Review and Section 1251 Report made several promises with respect to the modernization of our nuclear warheads, delivery systems and infrastructure. Based on what I have seen thus far for the fiscal year 2012 budget request, I am initially encouraged that the administration appears ready to honor these promises for the upcoming year. But there is much work to be done, and I remain concerned about the long-term commitment to these investments, a responsibility shared by both the administration and Congress. We have been handed the bill of deferred maintenance. We must be sure that these timelines are met and that these promises are kept.

Third, I have seen solid progress in the administration's implementation of the Phased Adaptive Approach, PAA, for missile defense in Europe and a significant improvement in their engagement of Congress from where we were a year ago. This work is commendable. I met with NATO Parliamentarians and NATO officials just last week, and I was pleased to see how far the missile defense discussion in Europe has advanced from just 3 years ago.

Some of us remain concerned, however, about the Department's hedging strategy for defense of the homeland in case the long-range threat comes earlier or technical issues arise in the development of a new SM–3 interceptor. I came away from our PAA hearing last December believing that the Department's hedging strategy was

hollow. I hope our witnesses can discuss the progress being made to add detail to the hedging strategy outlined in the Ballistic Missile Defense Review.

Lastly, I would ask that our witnesses discuss what they see as the key challenges and opportunities in national security space. I am particularly concerned about the health of our space industrial base and our export control policies, and finding the right balance between protecting our national security interests and strengthening our industrial capacity.

It goes without saying that these are challenging economic times, and I am certainly committed to working with the Department to identify efficiencies and better ways of doing business. With that said, we are a Nation fighting two wars, and it is our subcommittee's responsibility to ensure our strategic forces are kept viable in both the good years and the bad.

I want to thank you again for being with us today, and I look forward to your testimony. And with that, let me turn to my ranking member, Ms. Sanchez, for her opening comments.

[The prepared statement of Mr. Turner can be found in the Appendix on page 39.]

STATEMENT OF HON. LORETTA SANCHEZ, A REPRESENTATIVE FROM CALIFORNIA, RANKING MEMBER, SUBCOMMITTEE ON STRATEGIC FORCES

Ms. SANCHEZ. Thank you, Mr. Chairman. Thank you so much, Chairman Turner. I look forward to working with you and all the members of our subcommittee, and I know that we can accomplish a lot this year.

I would also like to recognize and thank Mr. Langevin for his strong and his steady leadership on this subcommittee in the last Congress.

And I want to join Mr. Turner in welcoming our witnesses to our first—this is our first, right?—our first strategic forces hearing of the 112th Congress. And we look forward to hearing from the general and from Dr. Miller to examine the strategic posture of the United States and our strategic forces, including our nuclear weapons programs, our missile defense systems, and our military space programs.

I have already had an opportunity to meet with you and I am sorry, General, that you were a little delayed today, and we didn't get a chance to talk, but I am sure that we will get to talk privately about some of the issues that we might have.

I would also like to thank Dr. Perry and Dr. Payne, who provide their views in the context of the recommendations made by the Congressional Commission on the Strategic Posture of the U.S. And I am also sorry that the Secretary could not join us today.

In April 2009, President Obama committed to working toward a world free of nuclear weapons, and last year the administration took several important steps to implement progress toward that long-term vision and to provide guidance with regard to our strategic forces.

First on the nuclear forces, the President announced his Nuclear Posture Review in April last year, which outlined a plan to reduce the role and the number of nuclear weapons, while committing to

maintaining our nuclear deterrent to reliably defend our country and our allies. And so that blueprint addressed the most pressing threats, I think, to U.S. security, the spread of nuclear weapons to other countries and to terrorists, and I know I worked quite a few years now being on this committee in trying to move part of that forward.

But I am concerned that programs that underpin the maintenance of our nuclear deterrent and urgent nonproliferation efforts didn't receive the fiscal year 2011 requested level of funding in the House-passed continuing resolution. And I know that myself and some of my fellow Democratic colleagues submitted to Chairman Ryan a letter talking to him about the concerns of those cuts and stressing the importance of strengthening this country's nuclear threat reduction efforts, especially with the work that is carried out at Lawrence Livermore, Los Alamos, and Sandia National Laboratories. I think those are very important efforts in order to bring down the risk of nuclear terrorism, and I think it also helps us to maintain a strong deterrent.

So I am pleased that the administration, in particular, completed and that the Senate passed the New START Treaty with Russia. I think that was, of course, one of the most important things that we had on our list. It has been able to reset, I think, our relations with Russia.

You know, I have a lot more in my opening statement, Mr. Chairman, but I do know that votes are coming up, and so I will submit the rest of it for the record. But I had already expressed to Dr. Miller yesterday some of my concerns and my questions. And I hope that I will get to talk to the general, too, and hopefully with our 5 minutes today we will get more information out of the both of you. So thank you for being with us. And with that I look forward to the discussion.

[The prepared statement of Ms. Sanchez can be found in the Appendix on page 42.]

Mr. TURNER. Thank you. That certainly is very kind of you.

Each of our witnesses will receive 5 minutes to give a summary of their opening statement, and we will then proceed for Members' questions, and then we will go to our second panel. The committee has received your full written statements and, without objection, those statements will be made a part of the hearing record.

We will begin with General Kehler. The floor is yours.

STATEMENT OF GEN. C. ROBERT KEHLER, USAF, COMMANDER, UNITED STATES STRATEGIC COMMAND

General KEHLER. Chairman Turner, Ranking Member Sanchez, members of the subcommittee, thank you for the opportunity to present my views on United States Strategic Command's missions and priorities.

I am privileged and humbled to appear today for the first time as Commander of Strategic Command. I am also pleased to appear with Dr. Jim Miller, a great colleague, with whom I look forward to working in the coming years.

Today's national security landscape is marked by protracted conflict, constant change, and enormous complexity. We are facing a significantly different operating environment than those we have

experienced in the past—an operating environment that is characterized by extraordinary technological advances; rapid changes in the number and type of actors; and hybrid combinations of strategies, tactics, and weapons.

Of the threats we face, weapons of mass destruction clearly represent the greatest threat to the American people, particularly when pursued or possessed by violent extremists or state proliferators. To deal with this environment demands faster, more comprehensive awareness; strategic thinking; flexible planning; decentralized execution; rapid innovation; and unprecedented information sharing.

Our mission remains clear: To detect, deter and prevent attacks against the United States, and to join with the other combatant commands to defend the Nation should deterrence fail. STRATCOM's [United States Strategic Command] first priority is to deter nuclear attack on the United States and our allies. As we implement the New START Treaty, we are committed to maintaining a safe, secure and ready nuclear deterrent. We are also the strongest possible advocates in favor of the investments that are needed to sustain and modernize the nuclear triad and the nuclear weapons complex that underpins it.

While nuclear deterrence is our number one priority, STRATCOM also has broader responsibilities in the 21st century. Ongoing operations demand our full commitment as well. So, in partnership with the other combatant commands, our next priority is to improve our plans, procedures, and capabilities to address regional problems, especially where those problems and capabilities cross regional boundaries. STRATCOM's activities to synchronize plans and capabilities for missile defense, ISR [intelligence, surveillance and reconnaissance], electronic warfare, and combating weapons of mass destruction are helping to bring unity of effort to regional operations and increased effectiveness to our overall investment.

Another priority is to improve our capabilities and operating concepts in the important civil and national security areas of space and cyberspace. Space is increasingly contested, congested, and competitive, and its importance to the United States goes far beyond national security. Ensuring uninterrupted access to space and space-based capabilities, improving our awareness of objects and activities in space, and enhancing the protection and resilience of our most critical systems are all essential objectives. Achieving those objectives demands continued investment to improve space situational awareness and to sustain our critical space capabilities while we also pursue increased opportunities with allies and commercial partners.

Our greatest challenge in cyberspace is to improve our ability to operate and defend the DOD [Department of Defense] network at network speed, and to make our critical activities continue even in the face of adversary attempts to deny or disrupt them. STRATCOM and its sub-unified command, USCYBERCOM [United States Cyber Command], are working hard to improve our organizations and relationships, enhance network situational awareness and protection, increase our technical capacity, and develop the human capital we need as we look to the future.

We have much to do, but we also know today's fiscal environment demands that we must maximize both mission effectiveness and taxpayer value. We will continue our efforts to identify every possible place where we can become more efficient as we work to become even more effective.

Finally, we are committed to taking care of our warriors, our government civilians, and our families. To this end we will fully support the efforts of the services to properly train, equip, support, and care for our men and women, and we will work diligently to ensure a safe and positive work environment.

Mr. Chairman, great challenges lie ahead, but so do great opportunities. The men and women of STRATCOM perform their difficult mission with remarkable skill and dedication every minute of every day. I am proud to be associated with them and look forward to working with you and the committee as we address the important national security issues.

Thank you again for this opportunity, and I look forward to your questions.

[The prepared statement of General Kehler can be found in the Appendix on page 45.]

Mr. TURNER. General Kehler, I want to apologize to you for all the conversation going on here, but I am trying to do the logistics of our votes, and this is what I have come up with: if this is acceptable hopefully to you guys, I am going to hand the gavel to Mr. Lamborn, who is going to preside while Dr. Miller gives his statement. Ms. Sanchez and I are going to go vote and return. During the period of the debate on the motion to recommit and the vote on the motion to recommit, we will ask our questions. Anybody else on the subcommittee is certainly welcome to return with us to hear the answers to those. We will then go and vote for the two votes that are remaining, and then when this subcommittee reconvenes, they will have their opportunity to ask their questions.

With that, I will be seeing you in a moment. Thank you.

STATEMENT OF HON. JAMES N. MILLER, PH.D., PRINCIPAL DEPUTY UNDER SECRETARY OF DEFENSE FOR POLICY, U.S. DEPARTMENT OF DEFENSE

Dr. MILLER. Chairman Turner, Ranking Member Sanchez, as you depart, and members of the subcommittee, thank you for the opportunity to testify this afternoon. It is a great pleasure to join the new Commander of U.S. Strategic Command, General Bob Kehler.

As Chairman Turner alluded to, just over a year ago, DOD submitted to Congress the Ballistic Missile Defense Review and, soon thereafter, the Nuclear Posture Review. And along with the Office of the Director of National Intelligence, we recently submitted the first-ever National Security Space Strategy to complete the congressional requirement for a space posture review.

My prepared statement summarizes the progress that we have made in each of these areas, and I will just touch on the highlights in each area.

On nuclear issues, the administration has made significant progress over the past year, including ratification and entry into force of a New START Treaty and an updated investment plan for nuclear modernization. A key contribution of the New START Trea-

ty is its verification regime. The U.S. and Russia will exchange initial New START databases no later than March 22nd, and this information will help us to better track the status of Russian strategic offensive arms. The treaty, as you know, allows each side to conduct up to 18 on-site inspections per year. These inspections will begin after April 5th, and our instructors are ready to go.

DOD's fiscal year 2012 budget reflects our commitment to sustain and to modernize our strategic delivery systems, and is the front end of an investment of some $125 billion over the next 10 years. This includes sustaining the current *Ohio*-class submarines and continuing R&D [research and development] on a replacement submarine; sustaining the Trident II D–5 missile; preparatory analysis for a follow-on ICBM [intercontinental ballistic missile] capability to be fielded in the 2030 time frame; developing a new dual-capable Long-Range Standoff missile; upgrades to the B–2 to enhance its survivability and capabilities; and finally, the development and fielding of a new long-range nuclear-capable penetrating bomber, with funding starting in fiscal year 2012.

As you know, the National Nuclear Security Administration, part of DOE [Department of Energy], has proposed spending about $88 billion over the next 10 years to sustain our nuclear arsenal and to modernize infrastructure. The NPR [Nuclear Posture Review] identified a number of NNSA [National Nuclear Security Administration] facilities that are decades old and must be upgraded or replaced to ensure the reliability of our nuclear arsenal.

And as the committee is aware, and as Ranking Member Sanchez alluded to, the House-proposed budget bill, H.R. 1, would cut NNSA funding in fiscal year 2011 by about 10 percent from the President's request. Proposed cuts include over $600 million from the nonproliferation program, over $300 million from nuclear weapons activities, and over $100 million from nuclear naval reactors. If enacted, these cuts will delay needed investments, they will drive up program costs, they will reduce our ability to engage in nonproliferation, and they will set back our efforts to implement the Nuclear Posture Review.

As we look to the future, Conventional Prompt Global Strike systems offer the possibility of being able to defeat time-urgent regional threats with rapidly executed high-precision attacks without having to use nuclear weapons. Such capabilities would increase the options available to the President.

DOD is currently focusing in particular on conventionally armed long-range missile systems that would fly a non-ballistic trajectory, so-called boost-glide systems. Such systems could steer around countries to avoid overflight, and have flight trajectories clearly distinguishable from an ICBM or SLBM [submarine-launched ballistic missile]. Such systems would not be considered to be "new kinds of strategic offensive arms" for purposes of the New START Treaty, and so would not be accountable. DOD has proposed investing about $2 billion between now and 2016 for research and development of these types of systems.

Turn now to missile defenses. As you know, the U.S. is currently protected against limited ICBM attacks, with 30 ground-based interceptors at Fort Greely, Alaska, and Vandenberg Air Force Base in California. The President's fiscal year 2012 request pro-

vides a substantial investment in the defense of our homeland to ensure it remains viable over the long term.

As Mr. Turner alluded to, the United States must also be well-hedged against the possibility of rapid threat developments or unexpected technical delays in U.S. missile defenses. The Department is in the process of finalizing and refining its hedging strategy, and I look forward to briefing this subcommittee on results soon at a classified level.

Since the President's announcement of the European Phased Adaptive Approach in September 2009, the administration has made substantial progress on implementation. We are on track to deploy all four phases of the EPAA [European Phased Adaptive Approach] and on time. The USS *Monterey,* a guided-missile cruiser equipped for ballistic missile defense, is due to depart next week on March 6th from its home port in Norfolk, Virginia, for a 6-month mission, and this is the start of Phase 1 of the EPAA.

I want to say just a couple of words about missile defense cooperation with Russia. Our approach on this topic starts from our conviction that NATO must be responsible for defense of NATO territory, and Russia should be responsible for defense of Russian territory. Our concept is to operate our respective missile defense systems independently, but to cooperate by steps such as sharing sensor data to improve the ability of both systems to defeat missile attacks by regional actors such as Iran. As President Obama has stated, this cooperation can happen even as we have made clear that the system we intend to pursue with Russia will not be a joint system, and it will not in any way limit the United States' or NATO's missile defense capabilities.

U.S. space capabilities allow our military to see with clarity, communicate with certainty, navigate with accuracy, and operate with assurance. And to meet our requirements in space, DOD is requesting about $26 billion in fiscal year 2012. This includes $3.7 billion for satellite communications, $1.8 billion for missile warning, $1.7 billion for a GPS [Global Positioning System] constellation, and a number of other investments.

There are currently more than 22,000 trackable man-made objects in space of 10 centimeters or more, and many tens or hundreds of thousands of smaller objects, but potentially large enough to damage a satellite, and to deal with this increasing congestion in space, DOD is taking a number of steps. We are expanding sharing of space situational awareness data to increase transparency and cooperation. We are looking at how to transform the Joint Space Operations Center at Vandenberg Air Force Base, California, into a combined space operation center operated with international parties, and the administration is currently closely evaluating the European Union's proposed International Code of Conduct for Outer Space Activities as a potentially useful set of guidelines for safe activity in space.

Finally, the United States is developing a range of capabilities, plans, and options to deter, defend against, and, if necessary, defeat efforts to interfere with or attack U.S. or allied space systems. And I would like to make clear that while U.S. responses to interference or attack on space systems must be proportional and in ac-

cordance with the law of armed conflict, our responses would not necessarily be limited to the space domain.

So in conclusion, reducing strategic risks to the United States and sustaining key U.S. strategic capabilities are long-term challenges that will require support from a succession of administrations and Congresses. Success will clearly require developing and sustaining bipartisan consensus on key issues, and I am very pleased to have the opportunity today to continue that engagement, and I look forward to your questions. Thank you.

[The prepared statement of Dr. Miller can be found in the Appendix on page 72.]

Mr. LAMBORN [presiding]. Thank you, Dr. Miller, and thank you, General Kehler, for your testimony. We know your time is very valuable, and so we thank you for your patience and flexibility while we go over and vote and then come back, because we do want to hear your responses to our questions. So we will be in recess until Chairman Turner returns.

[Recess.]

Mr. TURNER [presiding]. Well, thank you for your patience during votes. We are hoping to keep this efficient and moving. That is why we are doing this in shifts. And I appreciate you gentlemen giving us your patience.

What we will do is the ranking member and myself, we will ask our questions. I think we should have about 15 or 20 minutes. And then we will go for the next two votes and then return with the other Members for the purpose of addressing additional questions, and then turn to our second panel.

I obviously have questions for both of you. Dr. Miller, I will start with you. In my opening statement I made a broad construct of the issues that I am concerned about, and I want to give you an opportunity to respond to those. I basically put them into three categories for the purposes of this question.

I am very concerned, I think as are others, that the President's concept of a world without nuclear weapons or going to zero can be a pressure for driving policy instead of the real threat or deterrent assessment driving policy. Now, that is not to say that the concept of a world without nuclear weapons or the concept of zero is not something that we all would aspire to, and it is certainly not to say that there isn't room for the types of reductions that we have seen in New START or issues of trying to look to what is an appropriate shape of our strategic posture. But ensuring that those two things are disconnected, that we don't have the pressure of going to zero driving these issues, is a concern, I think, that many people have.

We had New START, and the Senate made clear that as we looked to issues of further reductions, that we had to look to Russia's tactical nuclear weapons. One of the points that I made when we had our conversation is that when we have a review of our deterrence, we have to have a concept of what we are deterring. We cannot merely do an assessment of our posture without the concept of what are we deterring. That means that we have to both identify who it is that we are deterring, and what their assets are, and what is necessary for deterring it.

I am aware, as we have discussed, that NATO is also undertaking a deterrence review, and I have concerns there as well that we not want a political deterrence review, but a real policy and substantive technical review of both the needs of NATO and the concepts of what exactly we are deterring.

I would like for you to talk about that for a moment on the issues of what are we trying to deter, how do we relate, then, that to our actual strategic posture, and how you see the deterrence review in NATO unfolding.

Secondly, as I discussed in my opening statement, I am very concerned about the concept of the hedge that was identified in the Ballistic Missile Defense Review; that in the Phased Adaptive Approach, there was this concept that the two-stage would be viewed as a hedge. We had a discussion of that in another hearing. I know you have additional thoughts on that, and I would like to hear them today.

And I would also like your thoughts on what other reductions currently are you looking at from a policy perspective? As we take up this issue, as we look at what is currently on the table, what do you see ahead of us?

Dr. Miller.

Dr. MILLER. Thank you, Mr. Chairman.

The President has talked in the past about the next step we intend to take on arms control, so let me start there. And what he has said, and what we stated in the NPR as well, was that we would look for the next bilateral round with Russia that would deal with both deployed and non-deployed nuclear weapons, and both strategic and non-strategic nuclear weapons. As you alluded to, there are not exactly symmetries in each of those categories, but overall there is an approximate parity, and it is a useful basis to think about conducting the next round of negotiations.

In terms of the process that we will undertake prior to starting those negotiations, step one is to do the hard look at our guidance and at the implications of the guidance that comes from the White House, that comes from the Secretary and the Chairman, that goes to General Kehler, and to understand the implications of any revisions in that guidance in terms of what is to be deterred by whom.

As we conduct that work, in parallel, we will be thinking about what types of verification regimes will be appropriate for a negotiation or a future agreement that really addressed the full range of nuclear weapons: deployed, non-deployed, strategic, non-strategic. The implications for verification are significant and would likely go well beyond what we have in the New START Treaty.

Also in parallel, we need to be consulting with our allies, and part of that discussion will be in the context of the defense—I am sorry, the Deterrence Defense Policy Review of NATO that you alluded to. And that conversation, I think, is beginning, is under way, as you saw when you visited. And, from our perspective, it is essential that we continue to stick by the principles that have guided NATO for many decades, including risk sharing and burden sharing, and our understanding that as long as nuclear weapons exist, NATO should be a nuclear alliance—just as as long as nuclear weapons exist, the United States will sustain a safe, secure, and effective nuclear arsenal.

So these activities will be going on to some degree in parallel, but just as was the case with the Nuclear Posture Review, where we reached key conclusions on what we needed for our nuclear posture and what—in terms of numbers and diversity of the force and so on, and then took those results to give guidance to our negotiators, we similarly will get the guidance work done, the assessments done that I talked about for what is required for effective deterrence, including strategic stability, and in parallel deal with the other issues I alluded to, including verification, consultation with allies. We will take the time to get it right.

The timeline that was given by the Senate, as you know, sir, was a year from the Senate ratification for us to come back with a proposal for engaging Russia on tactical nuclear weapons in particular.

With respect to the hedge, I paid attention at our December hearing, and the message was well received that we had not at that point articulated sufficiently how the hedge will work, under what conditions it would be initiated, and what specific responses we would have.

We have done a lot of work on it, and I have to report today that we are not quite there, and I would like to come back and give a detailed classified briefing. I would like to commit to do so in the next several weeks. Some of the potential triggers for invoking the hedge will involve classified information, and so I prefer to do that in a classified setting in any case.

I can talk about the elements, but you are already familiar with those, including the Missile Field 2, the eight additional silos that are being completed. Missile Field 1 is new for this year. We are now going to mothball Missile Field 1 rather than, essentially, eliminate it, which gives the opportunity for deployment of six more interceptors in the future. And I understand that we need to explain in more detail and on a detailed time limit that we have the specific role of the two-stage GBI [ground-based interceptor]. I can tell you it continues to have a critical role in the hedge, and I would just ask your indulgence for several more weeks to come back and give details in a classified setting.

Mr. TURNER. Before I go to General Kehler, just to restate and give you my concern—not necessary for you to respond at this point—but I am very concerned that as we begin the deterrence review, or as we begin any review to look at further reductions, that it be done in the context of, as I was describing, the actual "what is being deterred." We have Russia, we have China, we have Iran, we have North Korea, and any concept of reducing, especially in Europe, the U.S. footprint or the nuclear footprint of NATO as a deterrence must take into consideration Russia and the over 5,000 tactical nuclear weapons that they have that are in the area, because of course NATO is looking to deter Russia. We are looking to deter Russia, and China, and Iran, and North Korea. And I don't think anybody thinks that the current ratio between those tactical nuclear weapons in Russia and what we have at present with NATO is an appropriate ratio. They have overwhelming numbers, and I think the Senate's direction was, "address those numbers." Get Russia to make a concession with respect to the tactical weapons. And we certainly don't want to see just unilateral reductions

on the side of the United States without addressing what is that important issue of the threat of those tactical nuclear weapons.

With respect to the hedge, of course, our continued concern is that with the Phased Adaptive Approach, the coverage of protection to the mainland United States is not to arrive until 2020. That is in the best-case scenario on the evolution of technology. It is possible that the threat could evolve as early, as some intelligence reports say, as 2015. That would leave a significant gap to the United States, and so that is why I appreciate your continued work on the issue of the hedge.

General Kehler, thank you so much for your continued thoughts and, of course, your leadership. One item that we had a discussion on was the—on the triad, of looking to the Navy and the tube reductions of 20 to 16. There is continued discussion in other hearings on the Hill today. I would like your thoughts on the reduction of the tubes and what you see driving that, how you see it affecting our strategic posture, and any other thoughts you have on that.

General KEHLER. Thank you, Mr. Chairman.

First of all, sir, let me say that, in my mind anyway, the discussion of Trident and *Ohio*-class replacement is really a discussion in the context of the need to modernize the entire triad. So first of all, I think it is important for us to recognize that that is one piece, an important piece, but a piece of the decision process that we need to go through.

Second, the issue of the number of tubes is not a simple black and white answer. So let me just comment here for a minute. First of all, the issue, in my mind, is the overall number of tubes we wind up with at the end, not so much the number of tubes per submarine. And second, the issue is, of course, we have flexibility and options with how many warheads per missile per tube. So that is another consideration that enters into this mixture.

Another consideration that is important to me is the overall number of boats and the operational flexibility that we have with the overall number of boats, given that some number will need to be in maintenance, some number will need to be in training, et cetera. So those and many other factors, to include a little bit of foresight here in looking ahead to 20 years from now an anti-submarine warfare environment that the Navy will have to operate in, all of those bear on the ultimate size, weight, shape, configuration of the follow-on to the *Ohio*.

At this point, Mr. Chairman, I am not overly troubled by going to 16 tubes. As I look at this, given that we have that kind of flexibility that I just laid out, given that this is an element of the triad, and given that we have some decision space here as we go forward to decide on the ultimate number of submarines, nothing troubles me operationally here to the extent that I would oppose a submarine with 16 tubes. I understand the reasons for wanting to have 20, I understand the arguments that were made ahead of me, but as I sit here today, given the totality of the discussion, I am—as I say, I am not overly troubled by 16.

Now, I don't know that the gavel has been pounded on the other side of the river yet with a final decision, but at this point I am not overly troubled by 16.

Mr. TURNER. Twenty tubes met STRATCOM's strategic requirements?

General KEHLER. Yes, sir.

Mr. TURNER. A troubling aspect that we have is if 20 met the requirements, and now we are looking at 16, does 16 meet the requirements? And how was it determined that 20 to 16 meets the requirements?

General KEHLER. Well, I can't comment on, sort of, the acquisition decisions that went on in the background. I don't know what those decisions were. But the difference between 20 and 16, there was also a different number of boats in play. And so the overall difference, as I went back and looked at this, was not that significant in terms of tubes.

Mr. TURNER. So you are saying 16 will meet STRATCOM's requirements?

General KEHLER. Sixteen will meet STRATCOM's requirements, given that we are sitting here 20 years in advance. It certainly will meet our operational requirements given the size of the tube, the performance of the D–5, the ability to upload the weapons, because at the end of the day here, the question is, will we be able to deliver sufficient weapons with the platforms that are available? And this would meet our requirements just depending on the weapon upload.

Mr. TURNER. And we look forward to reviewing the analysis that says that the difference is sufficient.

General KEHLER. Yes, sir.

Mr. TURNER. Ms. Sanchez.

Ms. SANCHEZ. Thank you, Mr. Chairman.

Thank you, General, thank you, Doctor, for being before us.

I am going to be going to South Korea in a few weeks, and so I am sure I am going to be asked a lot of questions. A South Korean press report this week indicated that National Security Council WMD [weapons of mass destruction] czar Dr. Gary Samore left open the possibility that the U.S. might introduce tactical nuclear weapons on the Korean Peninsula if South Korea makes such a request.

The NSC [National Security Council] deputy spokesman clarified it afterwards to say that our policy remains to support a non-nuclear Korean Peninsula, and that there was no plan to change that policy; that tactical weapons are not necessary for the defense of South Korea, and that we have no plan or intention to return them.

Would you clarify what our policy is with regard to forward-based tactical nuclear weapons, and is the administration planning on increasing the number of deployed tactical nuclear weapons?

Dr. MILLER. Ma'am, the policy of the administration is to continue to have the ability to forward-deploy both tactical nuclear weapons and strategic nuclear weapons in the form of fighter aircraft, dual-capable aircraft, and in the form of bombers.

With respect to Korea, the clarification of the statement is exactly right. Our policy remains to support a non-nuclear Korean Peninsula, and the other elements that you discussed are exactly right as well.

What I would like to add—and this is based on past and ongoing conversations with our South Korean allies—is that the U.S. nuclear umbrella remains firmly over South Korea, and neither side believes that on-peninsula deployments are necessary to sustain that deterrent.

Ms. SANCHEZ. Thank you, Doctor.

As I stated in my opening comments that New START was what I believe is a real change and a reengagement, if you will, with Russia. I asked you this yesterday, Doctor, but maybe for the record, and, General, if you have any comments, where do you see us making further progress with the Russians and—with respect to arms reduction, and also with respect to missile defense—considering at least in the times that I have been over there in recent years, they have been very anxious about our whole issue with respect to missile defense, even with the phased approach that we have come—again, I understand that phased approach was not because of how they viewed this. But can you talk a little bit about this engagement in Russia, and what are the positives, where do you see us going, and what we could do as Congress-people who work on these subjects to enhance that relationship?

Dr. MILLER. Let me take a cut and see if General Kehler wants to come in as well. In addition to the internal planning that we are doing currently to think about future steps in arms control with respect to Russia and all the elements that I described in responding to Chairman Turner, under the auspices of the Tauscher-Ryabkov group headed by, on our side, Under Secretary of State Ellen Tauscher, we are initiating discussions on the future basis of strategic stability. Discussions are just getting under way. We don't expect them to result in a negotiated agreement. But what we do want to engage the Russians on is what do things look not just in the 2010s and so on, but in the 2020s and forward, and what will be the basis of deterrence in the future.

They clearly have expressed concerns about the future course of our missile defense deployments, and we have, in all venues, come back with a clear statement that we will not accept any limitations quantitatively, qualitatively, geographically, or otherwise. And so this is part of a conversation about how to sustain strategic stability over the long term, and I think it is an important conversation both with Russia, and different qualitatively and quantitatively, but also very important with China. We have not yet had the same sort of positive response in terms of willingness to have this discussion vis-a-vis China, and we continue to ask for that.

On missile defense cooperation, as I said in my statement, we have made clear that we don't see moving forward with a joint system, but see moving forward with the possibility of cooperation on separate systems. And with respect to NATO, our concept is that NATO would defend NATO, Russia would defend Russia, and we would look for opportunities to cooperate that would be mutually beneficial.

The Bush administration first proposed the possible use of radar data from two Russian radars, one in Armavir and one in Qabala. We have looked at those and a couple of others as well, and we think that, in fact, some early-warning data from those radars could potentially increase the ability, improve the ability of our

Phased Adaptive Approach to intercept missiles into Europe. It is also possible that sensors from the United States and from our NATO allies could improve the ability of Russia to engage a missile headed toward it from Iran.

So sharing of sensor data, I think, is the most promising initial area. In principle, it is possible that one side could intercept a missile that is headed for the other. If you look at the geography of a launch from Iran, or elsewhere for that matter, the Middle East, there are some trajectories that head towards Europe that pass over Russia, and some, conversely, that would pass over Europe on its way to Russia.

So we will look to engage with them on those issues, and a foundational activity that we have proposed is to do a joint analysis that looks at the architectures and how each side's sensors and so forth could assist in the ability of the other side to conduct missile defense intercepts.

Our next meeting with them I will co-chair in just a couple of weeks, and we will look to move the ball forward on these issues. We think it is in both the U.S. and Russian interests to have some real cooperation in this area.

Ms. SANCHEZ. Thank you.

General, do you have anything to add?

General KEHLER. Congresswoman Sanchez, I do. I would just add that over the years—since the end of the Cold War in particular, but even prior to that—we have found that there is extraordinary value in having military-to-military contact with the Russians at all levels on lots of issues. We find that those engagements typically lead to better understanding, they lead to less confusion at some times and, as we look to the future, we see a lot of opportunities here that we might be able to engage more with the Russians at a mil-to-mil level on a wide variety of issues.

In addition, as Dr. Miller said, there have been some initiatives. You know, the Secretary of Defense visited China recently and, similarly we see some value there in military-to-military contact.

Ms. SANCHEZ. Thank you.

Because of the time constraints, I am going to hold on to my questions, and maybe we will allow the chance for the others to ask, Mr. Chairman.

Mr. TURNER. Okay. Thank you so much.

We are going to adjourn. Before we do, I do have one issue I want to clarify first with respect to the questions I was asking.

It is my understanding that the NATO deterrence review could recommend a reduction in the U.S. nuclear weapons that are in Europe. I want to make certain I am not walking away with a misunderstanding on that. If the gentleman at this time would correct me if I am mistaken?

Then, coupled with that, my concern being I would expect, and I think the Senate's direction would expect, that if that were to occur, that it would be done in conjunction with a concession or reduction overall in the Russian tactical nuclear weapons. Gentlemen?

Dr. MILLER. Chairman Turner, I would not want to prejudge what the outcome of the review would be. We have views, obvi-

ously, within the administration about its future direction, both its focus and desired outcomes, but——

Mr. TURNER. You would not disagree that it could recommend reductions?

Dr. MILLER. Yes.

Mr. TURNER. And then ergo to my statement, I would hope that would occur within the context of reductions and concessions in tactical nuclear weapons from Russia.

Gentlemen, with that we are going to adjourn for these two votes, and then we will be returning for questions from the other Members. Thank you.

[Recess.]

Mr. TURNER. I call the subcommittee back to order.

We will begin our round of questioning, 5 minutes, to Mr. Lamborn.

Mr. LAMBORN. Thank you, Mr. Chairman. I hope the questions I am going to bring forth haven't already been asked, because I missed some of our meeting with our truncated schedule here.

General Kehler, and hopefully this isn't going to become an issue, but press reports suggest that some in our administration would like to sign on to the European Union's Code of Conduct concerning space. What are the advantages and disadvantages of signing on to such a code, what national security considerations should the Department take into account as it reviews such a proposal, and would this Code of Conduct require any changes in U.S. policy or approaches to space?

And I know you are dealing with STRATCOM right now, but you obviously have an extensive space background when you were in Colorado Springs, and we thank you for your service in that capacity as well.

General KEHLER. Congressman, let me just set the scene for a second. In 1957, there was essentially one object on orbit, and it was Sputnik. Here we are in 2011, and we catalog well over 20,000 objects. It depends on the day whether it is 20,000 or 21,000 or 22,000, but the number is growing. There are objects there beyond what we are able to maintain in our catalog that NASA has estimated probably 10 times the number of objects are there than what we actually see. So this issue of space becoming more congested is a real issue.

There are some rules that exist today, but they are very broad, and our view, at least at STRATCOM, is that it is time for us to embrace this issue in some way. Now, there are caveats that have to be added to this, of course, and there are operational considerations that we would have to make sure that are being taken account of as we go forward.

But my view is that it is time for us to have this engagement. It is time for us to be on the road of looking at what makes sense in terms of best practices. Whether we call that a code of conduct or whether we actually embrace the EU Code of Conduct is something we are working and making our inputs known in the policy world. But fundamentally our view at STRATCOM is that we should be on this road looking to put appropriate rules of the road in place that will help us and will actually help everyone.

This is consistent with our new national space policy, it is consistent with the new National Security Space Strategy, and operationally we think it is consistent with the plans that we have as well.

Mr. LAMBORN. Okay. Thank you.

Now, for either or both of you, when the White House announced the European Phased Adaptive Approach in 2009, it said the new approach was based upon an assumption that the long-range missile threat was "slower to develop." However, several Defense officials, including Secretary Gates and Admiral Mullen, have recently expressed concern about the pace of Iran's ICBM and nuclear developments.

So my question is this: Are you concerned that Iran's missile and nuclear programs are developing faster than the Intelligence Community previously assessed?

Dr. MILLER. Mr. Lamborn, I believe when I testified here in December, I talked through the then intelligence assessment portions which have been made public. I talked about the possibility of an Iranian long-range missile capability by 2015. So, in fact, we have seen Iran continue to pursue its missile program, including through the space launch system Safir and others. We have seen advances in that program, and we have seen them continue to pursue their nuclear program and at least providing the option to go to a nuclear weapons capability and not foreclosing that.

So, I would say if anything since the time of that decision, concerns have been reinforced and to some degree heightened, and that is one of the reasons that we continue to look in detail at what the appropriate hedge should be with respect to missile defense.

General KEHLER. Sir, I would add that in the 30 days I have been in command, the first set of questions that I started to ask about this were, do we have the flexibility to pursue the hedge strategy; and the answer is, yes, we are making progress in sensors. We have made progress in sensors. In fact, the modifications that have been made to some of our early-warning radars are now complete. There are others now in progress to be in a better position sensor-wise to understand and characterize the threat if it were to emerge.

Of course, we are continuing to build GBIs, so there is flexibility there for a decision process that would respond to a hedge. There is work going on for the two-stage GBI. There are other things in trail here. MDA [Missile Defense Agency] is looking at how they would position what they call an IDT [In-Flight Interceptor Communication System Data Terminal], or it is a way to get information to an interceptor that helps the interceptor if it is out of radar ranges, et cetera, et cetera. They are looking at where they might position additional IDTs.

So I think I am comfortable from a military perspective that the pieces are in place that give the decisionmakers an ability to hedge if, in fact, this threat emerges sooner.

Mr. LAMBORN. Thank you both.

Mr. TURNER. Mr. Langevin.

Mr. LANGEVIN. Thank you, Mr. Chairman.

First I want to welcome our witnesses here today. Thank you for your testimony.

Before I begin, I just wanted to mention how much I enjoyed working with my colleague Chairman Turner on the Subcommittee on Strategic Forces in the last Congress. I had the privilege of chairing the subcommittee, and I want to say how grateful I am for the opportunity to continue to serve on the subcommittee this year with you, Mr. Chairman, and, of course, Ranking Member Sanchez, and while also getting a chance to focus more on our national cyber efforts as now the ranking member on the Emerging Threats and Capabilities Subcommittee.

So, with that, let me turn to a cyber question. General Kehler, Dr. Miller, as we all know, STRATCOM has direct authority over the new Cyber Command that stood up last year, as you were talking about in your opening statements, and one of the concerns that we have had is about the proper authorities for the military in cyberspace. We recognize right now that of the range of threats that are facing the Nation, cyber threats are among the most serious.

Clearly the NSA [National Security Agency] and CYBERCOM are both very capable entities for our intelligence and military issues, but many of the threats that we face today as a Nation are to civilian-critical infrastructure, such as our electric power grid or our financial system.

My question is if we were undergoing a cyber 9/11 attack, what is the capacity of the Department to assist with the defense of nationally critical systems, and how is the Department's efforts to work more closely with DHS [Department of Homeland Security] evolving?

General KEHLER. Sir, let me begin by saying there has been a lot of progress made over the last couple of years to bring focus inside the Department for sure regarding cyber. The stand-up of CYBERCOM, by combining other pieces from throughout the Department, has been a big step forward. Getting it to full operational capability, although there is certainly much more to be done, was a significant step forward. Positioning at Fort Meade, which is the center of gravity—center of excellence for the country, really—for cyber-related activities, was a positive step. So there is progress being made.

I believe that the memorandum of agreement that was signed between the Department of Defense and the Department of Homeland Security that begins to outline the relationship between the two Departments in just such a scenario has been particularly significant.

There is more work to be done. If you are asking on any given day, what is the capacity of the Department to be helpful, there are capabilities the Department has. How the capabilities are wielded in terms of relationships elsewhere in the government and sort of defense support to civil authorities and all of the relationships we have carved out elsewhere in our military, those steps are still, many of them, in progress. So those are high on our to-do list to continue to work our way forward.

Certainly the SECDEF [Secretary of Defense], Secretary Lynn, has become a real leader in all of this area. He has been very vocal about our need to go forward. And I would tell you, while progress has been made, there is much more to do.

Mr. LANGEVIN. I agree. My concern is that were there a cyber 9/11 attack under way, that we haven't worked these things out yet, and although we might have the ability to stop it, we don't yet have the authorities worked out as to how that would happen. And my concern is the left hand wouldn't know what the right hand is doing, and we would be doing great danger, putting the Nation at great risk, by not having those authorities in place.

General KEHLER. Sir, I would just add, my view of this is that some of those are now in place. The MOA certainly helps us a great deal, but they are not all in place. I think I would describe this as still very much a work in progress.

Mr. LANGEVIN. Let me go to another question before my time runs out.

General Kehler, Dr. Miller, yesterday in our science and technology posture hearing on the Emerging Threats and Capabilities Subcommittee, Secretary Lemnios, head of the DOD Research & Engineering, brought up some of the more promising emerging technologies in the field of hypersonics and directed energy, from new efforts to Prompt Global Strike, to Airborne Laser. Both of these topics have strategic ties.

Can you comment on what work is being done to evolve these technologies into operational concepts and systems under USSTRATCOM, and what makes the Department view these technologies as potential game changers?

General KEHLER. I will make a comment, and then Dr. Miller may want to say something as well.

But from a STRATCOM perspective, sir, first of all, on directed energy, of course, some work continues in terms of directed energy and missile defense efforts. That has been curtailed significantly, but we have some interest in what is residual in that activity.

Regarding hypersonics, of course, we also have development efforts under way for what we are calling Conventional Prompt Global Strike, and there is some promising work that has gone on, and more to do, that would perhaps give us a real advantage here in small numbers for specific targets to give to the President some options to go after some kinds of targets conventionally that we do not have that option today. So both of those are very promising to us from those two standpoints, sir.

Dr. MILLER. If I could just add very briefly, as I mentioned before, the Department is spending about $2 billion over the next 5 years on the hypersonics, in particular on the Conventional Prompt Global Strike boost-glide vehicle, and we do see a lot of promise there from a policy and operational perspective.

With respect to lasers, with the conclusion that the Airborne Laser didn't have real operational utility given its limitations, it and other activities went together into a laser R&D program that is $100 million a year-plus, and there are a number of promising technologies across a range of applications, including missile defense and others.

If I could add just very quickly on the earlier question, and I apologize for doing this, but I just wanted to add to General Kehler's answer on cyber that, in addition to having the authority to protect its own networks, that the Defense Department is assigned responsibility for working with the defense industrial base,

one of the 18 critical infrastructure categories, and we are working closely with DHS now to look at how the capabilities of the Department can be brought to bear to support DHS in protection of other critical infrastructure.

As you know, but I just want to have on the record, the President does have emergency authority to direct DOD to defend the Nation as part of the defense support to civil authorities against a cyber or any other attack. We are in internal conversations in the administration now about how to do that more effectively and whether new authorities and legislation is needed, and look forward to joining your subcommittee and the other Emerging Threats and Capabilities Subcommittee in a couple of weeks with General Alexander to discuss.

Mr. LANGEVIN. Thank you. Well, I am encouraged by that answer.

Both of you, I want to thank you for your testimony, and I look forward to following up, particularly on the directed energy issue as well.

As I have often said, with the growing threats that the Nation faces from ballistic missile issues, we are not adequately going to be able to defend the Nation with kinetic weapons alone. The game changer will really come through directed energy, and the more we can do to support that work, the better.

So thank you both for your testimony, your work and, with that, I yield back.

Mr. TURNER. I just want to echo what Mr. Langevin just said. Great comments.

Mr. Larsen.

Mr. LARSEN. Thank you, Mr. Chairman.

Dr. Miller, the first question is for you. You may not be able to answer it. It may make you uncomfortable. But this gets back to South Korea. We know the conservative politicians there have for some time wanted to reintroduce tactical nuclear weapons to the peninsula, so we know recent DPRK [Democratic People's Republic of Korea] actions haven't driven that desire out of the blue from some elements of South Korean politics. But I guess what is shocking to me is that a White House official both believes that we would reintroduce and encourages such a request of tactical nuclear weapons to the peninsula.

So my question is, what was he thinking?

Dr. MILLER. Obviously I can't answer that first person. I did have a chance to talk to Gary Samore, and I can tell you that he is fully on board with the clarification that was issued, and he was fully on board with the fact that I commented and intended to also say and make absolutely clear that the U.S. nuclear umbrella continues to extend to South Korea, and that neither side believes that that requires the deployment of tactical nuclear weapons on the peninsula. I can tell you he is 100 percent behind what the clarification of this policy is.

Mr. LARSEN. Did anybody tell Samore he should say less? Because he ought to.

Back to something you might be able to answer directly, speaking for yourself. It has to do with the Global Threat Reduction Initiative. The 2010 appropriation was over $300 million; the fiscal

year 2011 request was over $550 million. Obviously, this increase for funding reflects the administration's success in securing promises from former Soviet bloc countries to remove and return highly enriched uranium by 2012.

But we are in this continuing resolution world right now, and I would like you, if you can, help us understand what would happen to our efforts in Belarus, Poland, Vietnam and other countries and their ability to follow through on these 2012 commitments, and help them follow through on these 2012 commitments if, in fact, we ended up with something less than what the administration requested for 2011?

Dr. MILLER. Mr. Larsen, we would have to make some very, very difficult choices. What I would like to do, if I can, is take this for the record and come back and give you specific answers, given that we are partway through the year in execution at a lower level than we had hoped, and I would like to describe what have been the effects so far and then what would be the consequences if it continued for the duration of the year.

I can give some general comments, but I think it would be preferable to give details on it. I would be happy to do it on a country-by-country basis and to answer very swiftly.

[The information referred to can be found in the Appendix on page 117.]

Mr. LARSEN. That would be great, and I think it would be very helpful, because it is not so much that it is this administration's policy, it is just a generally good idea to get to these countries and get our hands on this HEU [highly enriched uranium], get it behind a good lock and then destroy it. I am very concerned we are not going to be able to do that, much less than what happens to the 2012 request as we move forward in the appropriations process.

General Kehler, again, congratulations. It has been an exciting 30 days for you, I am sure. But something that we have on this committee considered over the last several years, and, Mr. Chairman, I was going to ask the ranking member, too, we might want to either do a hearing or do something in a different setting on the space situational awareness. We have been tracking that and pressing that for the last several years for a lot of reasons.

Given what is in the budget for 2012, what are the most important steps that you can tell us about here that you are taking with regards to space situational awareness?

General KEHLER. Congressman, there are two critical components that are continued in this budget that is before you today that will contribute to space situational awareness. One is a way to better fuse the existing data from the existing sensors, make better use of the sensors that we have, and bring that information together out at Vandenberg in what is our Joint Space Operations Center. At the same time as we go down that road, I think we have a great opportunity here to look very carefully with our allies and commercial partners and others to see how they can continue to contribute to that pool of data and our overall understanding of what is there.

Over the last year, or almost two now, STRATCOM has been pursuing a program that was actually recommended by Congress that was originally called the Commercial and Foreign Entities

Program. What that has resulted in now is a much better way to share situational information with other entities, to include commercial partners that have now signed up and are much more freely providing information about their platforms. So that frees up our sensors and our computing power to go after things that maybe we don't know as much about.

So that is very helpful. So it is how the data is exposed, how we make use of it. And how we include partners in all of that, I think, is something that is critically important and something we will need to continue to push. Some of that is contained in this budget.

The other thing is sensors. Even with sharing other information, and even with the better use of the sensors we have, we will need some sensors positioned in other places, and that is contained in the budget as well.

So those two things are in the budget. They are important, both of those, to us. And overall, I think you are right: the issue of situational awareness for space is very high on our priority list. And, by the way, it is for cyberspace as well, and it is not unlike the same issues that we are working for space. So cyber situational awareness, I think if General Alexander was here from CYBERCOM, he would leap up at this point and say, same for cyberspace, because that is a high priority for us in both of these places.

Mr. LARSEN. Just quickly, I gather from your answer that, in fact, we could have a much more complex conversation about this perhaps in a different setting.

General KEHLER. Yes, sir.

Mr. LARSEN. Thank you.

Mr. TURNER. I appreciate your comment on space situational awareness. In fact, this subcommittee has been working on issues of having 101 sessions, if you will, briefings that are not in the context of committee hearings for the purposes of really just straight education and subject matter information for the Members.

Mr. Larsen, I am very proud to say, you get a gold star. I think you have been probably in the best attendance of everybody, and I appreciate that.

Mr. LARSEN. If I may, Mr. Chairman, after last year's markup, I made a commitment to you that I would.

Mr. TURNER. There you go. Wonderful. Space is next Friday, so I am certain your star will not diminish. I look forward to that. Dr. Payne, whom we have next, and Dr. Roberts have both presented at those, and we greatly appreciated their participation.

Gentleman, we are going to end here, but I am going to give you an opportunity if there is anything that you would like to say in closing or to clarify in the discussion, I want to give you the opportunity to add anything to your comments.

Dr. MILLER. I will say three things very quickly.

First, I want to thank you for the opportunity to testify today, and to your 101 sessions, and look forward to having our people continue those and want to be available to answer any additional questions that you and the subcommittee or larger committee have as well.

Second, I look forward to coming back specifically for a classified discussion on hedge and what our thinking is in that regard. We had by chance bumped into the combatant commander for North-

ern Command in the anteroom, and I think we are well aligned on having the conversations—internal conversations—closed down that we need to move forward there.

Third, I want to thank you and the subcommittee and committee for support of both sides of President Obama's vision, including the arms control side, and also including the investments and, again, say that it is critical to this administration that we get the funding necessary to support our strategic nuclear delivery systems and, again, DOD speaking for the DOE funding line, the funding for NNSA to continues nonproliferation and its weapons work as well for fiscal year 2011. Thank you very much.

Mr. TURNER. Thank you.

General KEHLER. Mr. Chairman, just let me add my thanks. We know that the subcommittee has a lot of issues on its plate, and we are pledged to come back at any time that you want to continue these discussions further.

Typically combatant commanders don't say much about investment and needs to support budgets, but I must add my voice to Dr. Miller here. In the first 30 days, I have told my staff that what I wanted to do was get all the way around the nuclear weapons complex. I didn't make it. I got about half of the way through, but I will get through the rest of it within the next couple of weeks.

I must say that my assessment is that the investment that is planned for them is definitely needed, and it underpins all of our other deterrence activities. If the weapons are not safe and effective and secure, I think we don't have a leg to stand on. So I would encourage support for that part of the investment as well, even though that is not directly in our portfolio.

Mr. TURNER. General, thank you for those comments. Thank you both. Thank you for your service.

We will now go to our second panel, which will be Dr. Bill Perry and Dr. Keith Payne.

Gentleman, while you are getting situated, let me begin my welcome to you. I want to provide you a warm welcome to Dr. Perry and Dr. Payne.

As I mentioned earlier, I believe that the committee's oversight is further enhanced through additional perspectives outside of the traditional Pentagon witnesses that we usually hear from. Therefore, I have asked Dr. Bill Perry and Dr. Jim Schlesinger, the Chairman and Vice Chairman of the U.S. Strategic Posture Commission, to provide their views. Dr. Schlesinger, as I stated earlier, was unable to join us today, and I appreciate Dr. Keith Payne filling in for him.

I greatly appreciate also your participation, as we mentioned prior, in our 101 sessions where the committee is doing an overview of this subject matter.

Dr. Perry, I greatly appreciate you being here and all of your service and insight. We look forward to your statement, and I will recognize you now.

STATEMENT OF DR. WILLIAM J. PERRY, CHAIRMAN, CONGRESSIONAL COMMISSION ON THE STRATEGIC POSTURE OF THE UNITED STATES

Dr. PERRY. Thank you. I have a rather extensive written testimony which I have submitted, which I would like to submit for the record.

You know, in 2009, Congress——

Mr. TURNER. Dr. Perry, they are going to turn your microphone on here, I believe.

Dr. PERRY. In 2009, the Congress appointed our bipartisan Commission. We met for a year, and we ended up with a report. We have reported about a year ago to the Congress on that report. It was a bipartisan Commission and ended up with, amazingly, a consensus report with only one exception that had to do with the CTBT [Comprehensive Test Ban Treaty] treaty.

I reviewed the statement that I made to Congress last year, and I stand by that statement, and my written testimony reflects that fact with a few updates, and the updates primarily reflect the new events and, most notably, the Nuclear Posture Review, which was finished since then. So my oral statement, I am only going to highlight a few of the important points.

First, the threat has indeed changed since the Cold War with much less risk of a nuclear exchange, but a greater risk of nuclear terrorism. Therefore, to safeguard our security, we must continue to support the military programs and maintain an adequate deterrence force. At the same time, we need to support those programs that guard us against nuclear terrorism. They fall into two categories, basically: military programs, of which the BMD [ballistic missile defense] program is the primary example, and nonmilitary programs, which are international in nature, which prevent proliferation.

Considering those two different kinds of programs, when I was the Secretary of Defense, I referred to those as the need to lead but hedge; lead in the international programs that prevented proliferation, but hedging by maintaining an adequate deterrence in case stopping proliferation failed.

The leading has been supported, really, by the last five administrations through treaties: the START Treaty, the INF [Intermediate-Range Nuclear Forces] Treaty, the Comprehensive Test Ban Treaty, the Moscow Treaty and, most recently, the New START Treaty.

The deterrence, which is the hedge part of that, was the major subject of the report we wrote. We recommended how to maintain the deterrence in the future. I am happy to report that, in my judgment, the Nuclear Posture Review largely accepted the recommendations that we made in our report.

We argued that as a matter of policy we should clarify how we are going to use nuclear weapons. The Nuclear Posture Review used somewhat different language than we used, but nevertheless did have an important clarification, and it also, as we recommended, made strong assurances to our allies.

Secondly, we argued strongly that we should maintain the safety, security, reliability, and effectiveness of our deterrence force; do that through maintaining a robust three laboratories, through

maintaining a Stockpile Stewardship Program and Life Extension Program, and undertake the program to make a transformation of our two facilities at Los Alamos and Oak Ridge. One of them is plutonium; the other one is uranium. All of those are in the Nuclear Posture Review, and all of them have been funded, so I am quite pleased with the follow-up on our treaty there.

In terms of the leading, we recommended strongly actions to reverse proliferation in North Korea and Iran, and I am sorry to report that nothing useful has happened in either of those cases. They still maintain threats—I would say greater threats—than at the time we wrote our report.

We recommended that there be a treaty, an arms treaty, with Russia with modest reductions, and the New START Treaty essentially was compatible with what we had recommended there. We then also said beyond that we should consider follow-on treaties which dealt specifically with the danger of tactical nuclear weapons.

We recommended a strong strategic dialogue with Russia and other nuclear powers. That has gotten under way. We recommended continuing to maintain the strength of the Threat Reduction Program. And on the nature of the Comprehensive Test Ban Treaty, we had a split report on that—half of us recommending in favor of doing it, half of us recommending against it—but all of us recommending steps that the Senate should take to reconsider the treaty.

Finally, we recommended the strengthening of the International Atomic Energy Agency and adding to the Nuclear Nonproliferation Treaty the additional protocols to strengthen them.

Mr. Chairman, that summarizes briefly what I thought were the highlights of the report and how it compared to the Nuclear Posture Review. My bottom line is that I am very pleased that the Nuclear Posture Review was very, I think, quite compatible with the recommendations we made, with only a few very minor exceptions.

[The prepared statement of Dr. Perry can be found in the Appendix on page 92.]

Mr. TURNER. Thank you, Dr. Perry.

Dr. Payne.

STATEMENT OF DR. KEITH B. PAYNE, COMMISSIONER, CONGRESSIONAL COMMISSION ON THE STRATEGIC POSTURE OF THE UNITED STATES

Dr. PAYNE. Thank you, Mr. Chairman. It is an honor to be here today, particularly in the company of Secretary Perry who did such a wonderful job leading the Commission. So, thank you, sir.

And as you noted, Mr. Chairman, I am pinch-hitting for Dr. Schlesinger today. I know we all wish he could be here, and we all wish him the very best.

I would like to make a brief opening remark and then submit the article from which I drew those remarks for the record. I will take just a moment to identify a few of the Commission's basic recommendations and then identify the potential challenges to the U.S. strategic nuclear force posture as I see them.

The bipartisan Congressional Strategic Posture Commission offered numerous recommendations to reduce what we called the nu-

clear danger. For example, to reduce the nuclear danger, the Commission recommended a conscious effort to balance diplomatic measures to reduce the number of nuclear weapons with the necessary measures to deter attacks and to assure allies of their security. Despite the occasional friction between U.S. diplomatic and deterrence efforts, Republican and Democratic administrations for five decades have sought just such a balance.

The Commission also emphasized that the United States must maintain a viable nuclear arsenal for the indefinite future to support the national goals of deterrence and assurance. The Commission did not try to identify the minimum number of nuclear weapons necessary for deterrence and assurance. This omission was not a mistake; it was in recognition of the fact that these force requirements can change rapidly because they are driven by many fluid factors.

Rather than selecting an inherently transient right number of nuclear weapons, the Commission highlighted the need for a flexible and resilient force posture to support deterrence and assurance across a shifting landscape of threats and contexts.

We noted, in particular, that the importance of flexibility and resilience in the force posture will increase as U.S. forces decline in numbers. This emphasis on the need for flexibility and resilience in our force structure is the primary reason the Commission recommended that the administration maintain the strategic triad of bombers, ICBMs and sea-based missiles.

Finally, in recognition of the fact that deterrence may prove unreliable, the Commission also concluded that the United States must design its strategic forces not only for deterrence, but also to help defend against an attack if deterrence fails. This defensive goal includes the requirements for missile defense against regional aggressors and limited long-range missile threats. We specifically urged that U.S. defenses against long-range missiles become capable against more complex limited threats as they mature.

In light of these Commission recommendations, my foremost concern is that U.S. nuclear policy appears to be departing from a balance between diplomatic and deterrence measures to reduce the nuclear danger. Specifically, the goal of nuclear reductions appears to have been given precedence, and the resultant imbalance could undermine our future capabilities to deter, to assure and to defend.

What is the basis for my concern? The 2010 Nuclear Posture Review, a highly commendable report in many respects, for the first time places atop the U.S. nuclear agenda international nonproliferation efforts "as a critical element of our effort to move toward a world free of nuclear weapons," and that is quoting from the NPR. This prioritization appears self-consciously to depart from the carefully balanced dual tracks of the past 50 years.

The administration assurances that the U.S. will maintain an effective nuclear deterrent certainly are welcome, but at the end of the day, if a top U.S. policy priority is international nonproliferation efforts and movement toward nuclear zero, there will be unavoidable trade-offs made at the expense of the U.S. forces important for deterrence, assurance and defense.

This is not an academic concern over a few policy words. The administration links qualitative limits and numeric reductions in U.S.

nuclear forces to progress in nonproliferation and the movement toward nuclear zero. Qualitative limitations and further reductions in our forces, however, can reduce their flexibility and their resilience, undermining our national goals of deterrence and assurance. This is the trade-off that continues to need careful balance.

The Commission specifically cautioned against pursuing nuclear reductions at the expense of the resilience of our forces, in part because policies that undermine credible deterrence and assurance could actually provoke nuclear proliferation, not prevent it.

The U.S. defensive programs may also be undermined by the administration's self-described nuclear policy agenda. Russian officials and some American commentators now claim that qualitative and quantitative restraints on U.S. strategic defenses are necessary for any further negotiated nuclear reductions.

With international nonproliferation efforts and movement toward nuclear zero at the top of the U.S. nuclear agenda, as defined in the Nuclear Posture Review, the pursuit of nuclear reductions at the expense of U.S. missile defenses could ultimately be deemed an acceptable trade-off. That certainly is the Russian demand.

My final related concern is the possibility that new policy guidance could attempt to drive deep reductions in U.S. forces by redefining deterrence in minimalist terms, thereby lowering the force requirements deemed adequate for deterrence. For over five decades, Republican and Democratic administrations have consistently rejected minimum deterrence as inadequate and dangerous. Yet many proponents of nuclear zero now again advocate new Presidential guidance that adopts minimum deterrence as a way to justify deep reductions in U.S. nuclear forces.

Adopting a minimum definition of deterrence may help to justify the elimination of the triad and U.S. nuclear reductions down to 500 weapons, but it would do so at the expense of flexibility and resilience and, thus, the effectiveness of our forces for deterrence and assurance. Again, the Commission specifically cautioned against such nuclear reductions and emphasized that new Presidential guidance should "be informed by assessments of what is needed for deterrence and assurance." Any new guidance that adopts minimum deterrence could easily increase the nuclear danger by undermining credible U.S. deterrence and by pushing friends and allies toward nuclear proliferation.

In summary, I am concerned about the apparent imbalance in the administration's announced nuclear agenda and the possibility that new policy guidance may adopt long-rejected minimum deterrence standards as a route to deep nuclear reductions. The Commission's unanimous recommendations for (1) a balance in priorities; (2) the maintenance of a flexible and resilient strategic force posture; and (3) improving U.S. strategic defensive capabilities—indeed, against missile threats of all ranges—those recommendations, I believe, remain useful and pertinent.

Thank you.

[The prepared statement of Dr. Payne can be found in the Appendix on page 104.]

Mr. TURNER. Gentlemen, thank you for your comments and for your input. This is very helpful, as we take in consideration the prior testimony, to get your perspective.

Dr. Perry, I want to again commend you for the Strategic Posture Commission. Everyone looks to the report from that Commission as a great perspective on both the policy issues that we need to look for in decisionmaking, but also some of the substantive guidance, I think, that you are absolutely correct went into the NPR and then, further, into START. I think it is a great perspective for us to continue to look to.

I have basically two questions that have a couple multiple parts. I am going to ask you the first one with a couple of parts to it. But the first is about overall general cuts. The second is on the tactical nuclear weapons in Europe.

So the first question is, could you please describe in more detail the guidance that would have to be rewritten to warrant deeper cuts in our nuclear arsenal? What are some of the consequences or dangers associated with downgrading our deterrence requirements? Does this mean downgrading from a counterforce to a countervailing strategy? Could such a move hurt the credibility and flexibility of our deterrent? That would be the first question. I will give you both an opportunity to answer, and then I would like to discuss the tactical weapons in Europe.

Dr. Perry.

Dr. PERRY. You wanted to do the first question first?

Mr. TURNER. If you would, yes.

Dr. PERRY. My present view, Mr. Chairman, is that our cuts for the foreseeable future should be aligned with the cuts made by Russia, and if they are willing to go to deeper cuts, we should be willing to go to deeper cuts as well. That will be true up until such time as those cuts begin to approach the level of the other nuclear powers. That is a short answer to the question.

Mr. TURNER. Excellent.

Dr. Payne.

Dr. PAYNE. Thank you.

According to official unclassified and declassified reports, there are different general categories of opponents' targets that the U.S. tries to hold at risk for deterrence purposes. Categories are nuclear forces, leadership, other military capabilities, and war-supporting industrial and economic facilities, according to the unclassified official government statements to that effect.

Over time, as the Commission noted, Presidential guidance has adjusted U.S. emphasis on these categories, which can then change the numbers and types of weapons the military requires to fulfill that guidance. In theory, to get to low force requirements, new guidance could lower the force standards deemed adequate for deterrence. New guidance could simply eliminate nuclear requirements to hold one or more of those categories of targets that I identified at risk for deterrence purposes.

We have seen something like this in the past. In the 1960s, Secretary of Defense McNamara declared that U.S. deterrence requirements could be met by threatening 25 percent of the Soviet population and 50 percent of the Soviet industrial base. That was the assured destruction capability that was deemed adequate for deterrence. Secretary McNamara subsequently said that one of the reasons for choosing that type of threat as a declaratory policy was because it allowed him to hold numbers of forces very low, because

the lethality of nuclear weapons is such that it is not a large number of nuclear weapons necessary to hold those kinds of targets at risk, population and industry.

So some have now suggested going back to a McNamara-type assured destruction threat—deterrent threat—with an emphasis on only a few industrial-type targets as the way to get numbers of force requirements, the number of forces and the requirements down.

For five decades, I should note that no Republican or Democratic administration has accepted that kind of minimum deterrence standard for U.S. forces, and for very good reasons. The primary reason is because revising the U.S. definition of requirements down for deterrence doesn't mean that the actual requirements for deterrence go down. The actual deterrence requirements are driven by what our opponents think, not by our goal to reduce numbers.

I think Harold Brown put it best when he said for deterrence to prevent war as effectively as possible, it is critical that the United States can threaten what the opponents value, wherever that leads us.

So, with that, I would note there are at least a handful of fundamental reasons for rejecting any efforts to go back to a minimum deterrence definition of force requirements, and each of these reasons follows because those kinds of force requirements, minimum deterrence force requirements, create an inflexible straitjacket for the President.

But, one, going down to very low numbers associated with minimum deterrence is unlikely to be credible to deter attacks on us or our allies, at least on some occasions. Enemies may not believe that threat on occasion, or that threat may not be suitable to address what the opponent actually values on other occasions, violating Harold Brown's dictum. In either case, minimum deterrence will fail to prevent war.

Two, minimum deterrence standards will undercut our ability to assure our allies and friends, and it will lead some of them to seek their own independent nuclear capabilities; i.e., it is likely to promote nuclear proliferation.

Three, these types of minimum force standards associated with minimum deterrence will also ease the problems for opponents who seek to counter or get around our deterrence strategies. They are actually likely to encourage challenges to deterrence.

Four, minimum deterrence that focuses on population and civilians, civilian centers, are both illegal and immoral as a targeting policy. We cannot intentionally threaten civilian populations and targets for deterrence purposes.

Lastly, minimum deterrence standards offer little flexibility or resilience, so that when the future unfolds in a threatening fashion, we don't have the flexibility or the resilience to respond as necessary to deter war and to assure our allies.

It is basically those reasons that I have just identified, those handful of reasons, why no Democratic or Republican administration for five decades has accepted a minimum deterrence approach to force sizing.

Dr. PERRY. Mr. Chairman, if I may comment on that, my recommendation was to continue to reduce numbers compatible with

those of Russia. On the question of deterrence, one has to first ask, whom are we deterring? I would argue the answer is Russia, because all other cases are lesser-included cases at this time. At the present numbers and foreseeable numbers in the future, Russia is the only one that has enough nuclear weapons to be an issue here.

And the next question is deterring what? Russia does not have a conventional capability today capable of threatening either the United States or Europe. So all we can be talking about is deterring Russia's nuclear weapons.

Therefore, that is why my answer—assuming those points, my answer talked about making the reductions in terms of bilateral reductions with Russia. This is the background for that point.

Mr. TURNER. Turning, then, to my second question, Dr. Perry, that is a great transition to my second question, and what we have learned today in our discussion is that NATO is currently undertaking a deterrence review, and in that deterrence review they will be looking at all components of NATO's presence, both our nuclear capability, our missile defense capability and conventional.

It is a concern that the deterrence review proceed within context, as you said, Dr. Perry, to what is being deterred—that being Russia and, of course, their significant nuclear arsenal.

There is concern that there might be a recommendation in the deterrence review for a reduction in the U.S. nuclear force presence in Europe without achieving concessions from Russia of the number of tactical nuclear weapons that it currently has. For purposes of discussion, we know that they have in excess of 3,800. Perhaps they have as many as 5,000. The U.S. has a very minimal number in conjunction with our NATO commitment.

Do you think it would be wrong for us to do that? Because it would seem to me that if there is going to be corresponding reductions, that we should be seeking reductions from the Russians, and I think that is certainly the guidance the Senate had given in adopting New START.

I would like both of your thoughts.

Dr. Perry.

Dr. PERRY. I would like to give you a two-pronged answer to that question. First of all, I do not think we need nuclear weapons in Europe to deter Russia from an attack, or any other country from an attack on Europe. The nuclear weapons we have on our submarines, for example, are perfectly adequate for providing that deterrence.

But there is a substantial political issue involved, and the political issue, the reason we have nuclear weapons in Europe in the first place, is not because the rest of our weapons are not capable of deterrence, but because, during the cold war at least, our allies in Europe felt more assured when we had nuclear weapons in Europe. That is why they were deployed there in the first place.

Today the issue is a little different. The issue is the Russians in the meantime have built a large number of nuclear weapons, and we keep our nuclear weapons there as somewhat of a political leverage for dealing with an ultimate treaty in which we may get Russia and the United States to eliminate tactical nuclear weapons. My own view is it would be desirable if both the United States and Russia would eliminate tactical nuclear weapons, but I see it

as very difficult to arrive at that conclusion if we were to simply eliminate all of our tactical nuclear weapons unilaterally.

Mr. TURNER. Thank you.

Dr. Payne.

Dr. PAYNE. Thank you.

The Russian position certainly is that all U.S. tactical nuclear weapons must be returned to the United States before they will engage in negotiations on tactical nuclear weapons. I see some real problems with that, because if they are withdrawn now back to U.S. territory, it is hard to imagine them ever going back. And even if U.S. tactical nuclear weapons aren't necessary to deter Russia now, we don't know that the future is going to be so friendly.

So I am very concerned about the idea of deciding that our tactical nuclear weapons serve no deterrence role now; therefore, we can bring them back, because the future has a way of turning out in some ways darker than we anticipate on many occasions, and I think we need that flexibility to be able to be prepared for future events that may be less happy than we would otherwise expect.

The second point is that, in addition to "we may need them for deterrence purposes in the future," is that many of our allies see our nuclear weapons there as important for their assurance. It is what in some cases helps to keep them from deciding they will pursue an alternative to extended nuclear deterrence.

Therefore, this isn't just a deterrence issue. In fact, I think it is primarily, at the present time, an issue of how do you assure allies so they themselves remain comfortable within the alliance and in a non-nuclear status. We know, because before the Commission a number of the allies we had a chance to speak with said "these weapons in Europe are important to us for the demonstration of extended deterrence."

So I would be very reluctant to see the U.S. do anything unilaterally along those lines.

Mr. TURNER. Mr. Larsen.

Mr. LARSEN. Thank you, Mr. Chairman.

With regard to minimum deterrence, Dr. Payne, would you include the current administration as one of those who has rejected minimum deterrence?

Dr. PAYNE. Yes.

Mr. LARSEN. Thank you.

I would also note in your testimony you talk about the governor of Tokyo arguing at some point that Japan may look to its own independent nuclear deterrent.

I was in Japan a few years ago on a CODEL [congressional delegation] and having lunch with some folks from the Diet, and this was at least 3 years ago, and they were arguing then that they should have an independent nuclear deterrent. There are some folks in Japan who believe they ought to have an independent nuclear deterrent regardless of who the administration is, and regardless of assurances that we have about extended deterrence for Asia. So I just think that is just some context here.

But there are some things about the NPR that I know you all looked at, and I would like to get your views, both, on the NPR's negative assurance policy and where the administration did make a slight adjustment on the negative assurance policy.

I would like to, first Dr. Perry and then Dr. Payne, get your thoughts on the advantages of this negative assurance policy, how you see it playing out, how has it played out, has it not played out at all and, perhaps, the disadvantages of what the current negative assurance policy is.

Dr. Perry, can you start?

Dr. PERRY. The short answer is I thought that the Nuclear Posture Review's negative assurance policy was a positive step forward.

Mr. LARSEN. Do you have a longer answer? We are not used to short answers around here. I am sorry. You know how it is.

Dr. PERRY. I think it is important that one of the main points of the negative assurance policy is to have the minimum incentive for other nations to build nuclear weapons.

A negative assurance policy doesn't guarantee that, but it is a useful step in that direction. And so that is why I would view this as a positive step forward. So, basically, I am in favor of that. I thought we had a pretty good negative assurance policy before. I think this is an improvement.

Mr. LARSEN. Thank you, Dr. Perry.

Dr. Payne.

Dr. PAYNE. I also supported the language that the Commission put out with regard to negative assurance policy, and I was glad to see that the NPR didn't vary from that very much. The changes in the NPR with regard to the negative assurance policies are, I think, minor. And, in fact, when Secretary Clinton later amplified it by saying if BW [biological weapons] is ever used against the United States, all bets are on the table, I thought that it was a useful elaboration. And so with that type of understanding, I thought the changes were minimal, and I thought that was a good thing.

Mr. LARSEN. Okay. With regards to—and Dr. Payne, this goes to your point perhaps—well, one of your points in your testimony, oral and written—is that the President stated that the role of nuclear weapons will be reduced in U.S. national security policy. And to that end the NPR declares that non-nuclear elements will take on a greater share of the deterrence burden.

Should we interpret that as a desire to substitute conventional for nuclear capabilities in deterrence?

Dr. PAYNE. Well, the 2001 nuclear posture said exactly the same thing. This wasn't a great departure from what had been set up before.

Mr. LARSEN. Sounds like it was no departure.

Dr. PAYNE. In that case there was no departure, sir. And I agreed with that at the time. So I, again, didn't have any challenge whatsoever to that kind of statement in the Nuclear Posture Review. Where deterrence can be serviced by conventional forces, we should certainly have the conventional forces available to do just that.

Mr. LARSEN. I guess I gathered from your written and oral testimony that this turning down in temperature or moving away from a nuclear deterrence was a bad thing, and it might be a bad thing. I am just trying to square that with your testimony.

Dr. PAYNE. Fair enough, sir. The point I was making isn't that moving toward conventional forces for deterrence when possible is the wrong way to go. I think that is the right way to go.

The point that I was making with regard to the NPR statement was the NPR language that says moving towards international and nonproliferation goals as a step toward nuclear zero is now the highest priority. It is the top priority. That is what the NPR says. Whereas in the past the United States, every Democratic and Republican administration has balanced those priorities.

I don't have a concern that we move toward conventional deterrence when that fits, and when that is suitable, and when we can get appropriate deterrent effects from conventional forces. My concern is that the trade-offs that will have to be made if the top priority is, in fact, toward nuclear—international nonproliferation is moving towards nuclear zero, because there will be trade-offs made with regard to our assurance, our deterrence, and our defensive capabilities if that is the operative top priority. That is my concern.

Mr. LARSEN. Okay. Dr. Perry, obviously you have been chewing on this question longer than I have certainly. Do you have a response to Dr. Payne's comments with regards to this?

Dr. PERRY. I generally agree with Dr. Payne's comments on there. I might say that the main subject of dialogue, even controversy, within the Commission was not whether there should be a balance. Everybody agreed there should be a balance. It was just how to weigh that balance. And some members favored weighing the proliferation issues more strongly than the deterrence issues and vice versa, and that had to do with which they thought was the more pressing threat to the United States. But they all agreed, I think we all agreed, on the importance of having the balance.

Mr. LARSEN. Great. Thank you. Thank you both.

Thank you, Mr. Chairman.

Mr. TURNER. I am going to end with one question that is really asking both of you for a commercial. The Commission made recommendations about the investment into our nuclear infrastructure and NNSA. Some of that investment is at risk in this discussion that we are having on budget cuts nationally. As we look to the continuing resolution process where we have not yet funded the government for this year, there are many reductions that are hitting areas that they should not; for example, our national security and national defense.

Since we have had deferred maintenance, a long period of time where we did not put the money in that we should have, we are now in a situation where we have to put more money in, and some are seeing that money as huge increases that perhaps we could find savings in. I would love just if each of you could pause for a moment and give us some guidance, give Congress some guidance as to how important that funding is for NNSA; what you saw, Dr. Perry, in the Commission of our disinvestment, and, Dr. Payne, what you see as the threat if we don't respond. Gentlemen.

Dr. PERRY. Thank you, Mr. Chairman. I will speak for myself first, but I really think I will be speaking for the Commission when I say this, which is that we regarded it extremely important to maintain a robust program at all three nuclear laboratories, the hiring and retaining of key people, the supporting of the Stockpile

Stewardship Program, the supporting of the Life Extension Program.

Beyond that, we believe that the plutonium facilities at Los Alamos ought to be renewed, and that the uranium facilities at Oak Ridge ought to be renewed. In the report, if my memory is right, we said that those could be done sequentially, in which case the plutonium should have the first priority, and the uranium should be done after that, but we did argue that both of them should be renewed.

I would defer to Dr. Payne.

Dr. PAYNE. This, again, is another area where the Commission was unanimous in the support for essentially fixing the problems that NNSA confronts. You mention the commercial. Chairman Turner, it is like the old commercial, you can either pay me now or pay me more later. I think our recommendation was to do it now as opposed to having to pay more later.

I was encouraged to see the letter from the three lab directors who said that they thought the budgets that came out of the 1251 Report and the administration's commitment were quite acceptable to fulfill those goals and to fix the problem. So I would hate to see, and I am sure Secretary Perry would hate to see, movement away from that solution that we seemed like we almost have in hand for that problem.

The only other point I would add, and the Commission report noted this a bit as well, is we also have industrial infrastructure challenges in front of us. Just making sure that the United States, for example, can produce large solid rocket motors, I think, is a very important goal, and it is something that is going to need attention in the near future. So there are NNSA challenges, but there are also industrial challenges that need to be tended to.

Mr. TURNER. Gentlemen, with that I will ask if you have any closing comments.

Dr. PERRY. I do not. Thank you, Mr. Chairman.

Dr. PAYNE. I just have one, and I will make it short, and that goes back to Congressman Larsen's question, do I believe that this administration pursues a minimum deterrence policy, and I said no. I don't believe this administration pursues a minimum deterrence policy. The concern that I reflected in my remarks is my fear that, given the priorities identified in the NPR, we could see that coming. And I would hope that we would pay great attention to avoid that as every past Republican and Democratic administration has avoided it.

Mr. TURNER. Dr. Payne, Dr. Perry, thank you so much. Thank you for all your contributions. And, Dr. Perry, I must tell you that Kari Bingen, our professional staff member, had just commented that she could listen to you for hours. And I know we all could, and we would learn so much. So thank you for coming and participating, and thank you for your record. Very good.

[Whereupon, at 5:52 p.m., the subcommittee was adjourned.]

A P P E N D I X

March 2, 2011

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

MARCH 2, 2011

Opening Remarks
Honorable Michael Turner
Chairman, Subcommittee on Strategic Forces
House Armed Services Committee

Hearing on the Status of U.S. Strategic Forces

March 2, 2011

Welcome to the first subcommittee hearing of the 112th Congress. I would like to commend Mr. Langevin on his leadership in the 111th Congress and congratulate Ms. Sanchez on her selection as the new Ranking Member. I would also like to welcome our new members of the subcommittee: Mo Brooks; John Fleming; John Garamendi; Scott Rigell; Dutch Ruppersberger; Austin Scott; and Betty Sutton.

Since we organized at the end of January, our subcommittee has conducted several overview briefings on various aspects of the strategic forces portfolio. Just yesterday, officials from OSD Policy and U.S. Strategic Command briefed members on the Administration's nuclear policy and posture.

Today's hearing provides our subcommittee with the opportunity to review the Status of U.S. Strategic Forces. Since last year's strategic posture hearing, a number of notable events have occurred and several new policy documents have been released that affect our nation's strategic posture and which ultimately frame the Administration's Fiscal Year 2012 budget request.

We will hear from four distinguished witnesses. In our first panel, we are joined by General Bob Kehler, the new Commander of U.S. Strategic Command, and Dr. Jim Miller, Principal Deputy Under Secretary of Defense for Policy.

I believe the committee's oversight is further enhanced through additional perspectives outside of the traditional Department of Defense witnesses we hear from. Therefore, I asked Dr. Bill Perry and Dr. Jim Schlesinger, the chairman and vice chairman of the U.S. Strategic Posture Commission, to provide their views on our nation's strategic posture and the changes that have occurred in the last few years. Dr. Schlesinger was unable to join us today; our thoughts are with him. I appreciate Dr. Keith Payne filling-in for him.

I want to thank each of our witnesses for appearing today, and thank them for their service and leadership.

I will keep my comments brief to allow ample time for members to ask questions. However, I would like to highlight four areas of concern that I hope our witnesses will address here today.

First, the ink is barely dry on the New START Treaty and Administration officials are already discussing further nuclear force reductions. The assumption appears to be that more arms control and deeper cuts to U.S. forces is desirable and puts us further down the path to "a world free of nuclear weapons," a vision the President described in his 2009 Prague speech. We must be careful here. The President admitted in that same speech that this vision is unlikely to be realized in our lifetimes. We should slow down, let the treaty ink dry, and reassess where we are. Our security requirements should guide the feasibility and desirability of further reductions, not the other way around.

One reason for caution is uncertainty: none of us can predict the future. China is "rapidly upgrading its nuclear capability… and is trying to reach parity with Russia and the U.S."[1] Russia would have us trade away our missile defenses, conventional forces, and space capabilities to secure another arms control treaty that reduces their tactical nuclear weapons. In the last few months, NATO has reaffirmed that nuclear deterrence is a core element of alliance security. In the last week, a senior South Korean official suggested the U.S. reintroduce tactical nuclear weapons on the Korean peninsula for deterrence and assurance. There are long-term implications of a rush to reduce our nuclear forces that merit thoughtful consideration.

Second, the Nuclear Posture Review and Section 1251 Report made several promises with respect to the modernization of our nuclear warheads, delivery systems, and infrastructure. Based on what I have seen thus far of the FY12 budget request, I am initially encouraged that the Administration appears ready to honor these promises, at least this year. But there is much work to be done, and I remain concerned about the long-term commitment to these investments—a responsibility shared by the Administration and the Congress. We have been handed the bill of deferred maintenance. We must ensure that these timelines are met and these promises are kept.

Third, I have seen solid progress in the Administration's implementation of the Phased Adaptive Approach (PAA) for missile defense in Europe, and a significant improvement in their engagement of Congress from where we were a year ago. This work is commendable. I met with NATO parliamentarians and NATO officials just last week and was pleased to see how far the missile defense discussion in Europe has advanced from three years ago.

Some of us remain concerned, however, about the Department's hedging strategy for defense of the homeland in case the long-range threat comes earlier or technical issues arise in the development of a new SM-3 interceptor. I came away from our PAA hearing last December

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[1] "China Rejects Curbs on Nuclear Arsenal Expansion," Global Security Newswire, February 28, 2011.

believing that the Department's hedging strategy was hollow. I hope our witnesses can discuss the progress being made to add detail to the hedging strategy outlined in the Ballistic Missile Defense Review.

Lastly, I would ask our witnesses to discuss what they see as the key challenges and opportunities in national security space. I am particularly concerned about the health of our space industrial base and our export control policies, and finding the right balance between protecting our national security interests and strengthening our industrial capacity.

It goes without saying that these are challenging economic times. I am committed to working with the Department to identify efficiencies and better ways of doing business. With that said, we are a nation fighting two wars. And, it is our subcommittee's responsibility to ensure our strategic forces are kept viable in both the good years and the bad.

Thank you again for being with us today. I look forward to your testimony.

With that, let me turn to the Ranking Member, Ms. Sanchez, for any opening comments she may have.

House Armed Services Committee
Subcommittee on Strategic Forces

Hearing on the Status of U.S. Strategic Forces
March 2, 2011

Ranking Member Loretta Sanchez
Opening Statement

Thank you Chairman Turner. I look very forward to serving with you and the Members on our Subcommittee, and to the work we will accomplish together.

I would also like to recognize and thank Mr. Langevin for his strong and steady leadership of this Subcommittee in the last Congress.

I would like to join Chairman Turner in welcoming our witnesses to our first Strategic Forces hearing of the 112th Congress.

We look forward to receiving testimony from General Kehler and Dr. Miller, to examine the strategic posture of the United States and the status of our strategic forces, including our nuclear weapons programs, missile defense systems, and military space programs.

I also enjoyed meeting you all individually to talk about your priorities and discuss working together down the road.

I would also like to thank Dr. Perry and Dr. Payne who will provide their views in the context of the recommendations made by the Commission to Assess the Nuclear Posture of the United States.

I am sorry that Secretary Schlesinger could not join us today.

In April 2009, President Obama committed to working toward a world free of nuclear weapons.

Last year, the Administration took several important steps to implement progress toward this long-term vision and to provide guidance with regard to our strategic forces.

First on nuclear forces: The President announced its Nuclear Posture Review in April last year which outlined a plan to reduce the role and number of nuclear weapons while committing to maintaining our nuclear deterrent to reliably defend our country and our allies.

This blueprint addressed the most pressing threats to US security – the spread of nuclear weapons to other countries and or to terrorists.

I am particularly concerned that programs that underpin the maintenance of our nuclear deterrent and urgent non-proliferation efforts did not receive the FY11 requested level of funding in the House-passed Continuing Resolution.

In fact, I and my fellow Democratic colleagues on this subcommittee sent a letter to Chairman Paul Ryan expressing concerns over these cuts and stressing the importance of strengthening this country's nuclear threat reduction efforts and the important work carried out at the Lawrence Livermore, Los Alamos and Sandia National Laboratories.

These are important efforts that will reduce the risk of nuclear terrorism while maintaining a strong deterrent at lower levels.
I am pleased that the Administration successfully completed and ratified the New START Treaty with Russia.

It is an important step in dealing with nuclear reductions and nuclear non-proliferation.

It reduced the legal limit of deployed strategic nuclear weapons and reestablished crucial verification measures, which provide us legally-binding assurances that Russia is complying with its obligations under the Treaty.

It also enabled a re-set of relations with Russia.

This re-engagement with Russia facilitated increased international cooperation to effectively address the threats from Iran and North Korea's nuclear programs.

Much work remains to be done to engage Russia toward reductions in tactical nuclear weapons and in exploring possibilities to reduce non-deployed weapons, but this was an important and historic achievement.

Second on missile defense, I look forward to hearing what progress we are making on the Phased Adaptive Approach, Ground-Based Midcourse Defense (GMD), and on making progress toward ensuring we can deploy operationally effective and reliable technology to counter the most pressing threats.

Ensuring continued strategic stability with Russia and China also remains important, as we develop capabilities to defend against threats from Iran and North Korea.

Third, I'd like to touch on our vital space assets.

The Administration submitted in January its National Security Space Strategy as an outline for leveraging opportunities for US leadership and cooperation to protect our national security space assets in an increasingly contested, congested and competitive space environment.

I am particularly interested in hearing how we plan to better take advantage of commercial capabilities and resources to help stem cost overruns.

Last, I look forward to hearing about the progress and the vision of the new US Cyber Command, CYBERCOM, and how we can best reduce our vulnerability to cyberattacks that might threaten our national security.

Welcome. I look forward to the discussion.

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HOUSE COMMITTEE ON ARMED SERVICES

STATEMENT OF

GENERAL C. ROBERT KEHLER

COMMANDER

UNITED STATES STRATEGIC COMMAND

BEFORE THE

HOUSE COMMITTEE ON ARMED SERVICES

SUBCOMMITTEE ON STRATEGIC FORCES

2 MARCH 2011

NOT FOR DISTRIBUTION UNTIL RELEASED BY THE
HOUSE COMMITTEE ON ARMED SERVICES

Chairman Turner, Ranking Member Sanchez, and Members of the Subcommittee, thank you for the opportunity to present my views on United States Strategic Command's (USSTRATCOM) missions and priorities. Today marks my first appearance before you as the Commander of USSTRATCOM. I have occupied this position for a short time, but I have been involved with the Command's missions for much of my career. I was privileged to spend two years as the Deputy Commander, and most recently I served as one of USSTRATCOM's Service component commanders. USSTRATCOM's active duty, reserve, and civilian members, who are standing watch this very minute at locations across the country and around the globe, exemplify the best of today's joint force. I am privileged to lead this remarkable team, and I look forward to working with you to assure our nation's security.

America's strategic forces proudly continue their long-standing role as the foundation of our national security posture. The President of the United States has assigned USSTRATCOM the responsibility to detect, deter, prevent, and defeat attacks against the United States, its territories, possessions and bases, and to employ appropriate force to defend the nation should deterrence fail. The Command's specific mission responsibilities include planning, synchronizing, advocating, and employing capabilities to meet the nation's strategic deterrence, space operations, cyberspace operations, information operations (IO), global strike, missile defense, intelligence, surveillance, reconnaissance (ISR), and combating weapons of mass destruction (CWMD) objectives. We conduct these activities in close coordination with other combatant commands around the world. Today, I would like to describe the strategic context in which we operate and USSTRATCOM's priorities for addressing our many challenges.

STRATEGIC CONTEXT

The national security landscape continues to be marked by protracted conflict, constant change, and enormous complexity. While war remains a difficult struggle between human beings, today's operating environment is significantly different than those we experienced in the past. The number and type of actors (state, non-state, terrorist, criminal) are rapidly changing, and the distinction between combatants and non-combatants is less clear. Friend and foe alike can span global distances in seconds through space and cyberspace, and technological advances allow adversaries to cross traditional geographic and military boundaries with ease. Adversaries seek advantages by using asymmetric means to find and exploit our vulnerabilities and to defeat our advanced capabilities in air, sea, space, and cyberspace. At the same time, these adversaries wield hybrid combinations of capabilities, strategies, and tactics and operate in the shadows to present us with ambiguous indications and situations. Rapid technological evolution and the wide civil availability of formerly advanced military capabilities have also reduced "entry costs," making available completely new weapons and enabling actors to access capabilities that would not have been available to them in the past without significant investment. Indeed, surprise may be our deadliest foe, because it can make our plans ineffective, our training irrelevant, and, therefore, our organizations vulnerable.

The need to foster strategic stability and deter strategic conflict, ensure uninterrupted capabilities from and access to space and cyberspace, respond to traditional and non-traditional threats, and deal with surprise in an era of rapid technological advances presents USSTRATCOM with significant challenges. Of the threats we face, weapons of mass destruction clearly represent the greatest threat to the American people, particularly when

pursued or possessed by violent extremists or state proliferators. The potential of nuclear uncertainties in unstable regions adds special significance to this concern.

At the same time, today's fiscal environment will pose additional challenges regarding the means and manner with which we address the difficult global, strategic landscape. Last year, Secretary of Defense Robert Gates challenged us to foster an efficient "culture of saving" throughout the Department of Defense (DoD). The resulting review emphasized our responsibility to maximize both mission effectiveness and taxpayer value. USSTRATCOM's exhaustive assessment of our missions identified some functions that we could reduce, consolidate with other DoD organizations, or eliminate in favor of higher priority operational requirements. We are now evaluating these initiatives with the DoD leadership and will realign resources as directed at the conclusion of this assessment.

In summary, the challenges are great, the choices are hard, and there is no textbook solution.

PRIORITIES

The 21st Century security environment demands fast, comprehensive awareness, strategic thinking, flexible planning, decentralized execution, rapid innovation, and an unprecedented emphasis on sharing information. In this environment, USSTRATCOM has been uniquely organized and positioned to shape and employ global capabilities to deter, enable, and, when needed, join with the other combatant commands to fight and win the ever changing joint fight.

First and foremost, we must guarantee a safe, secure, effective, and ready nuclear deterrent force. As affirmed by the 2010 Nuclear Posture Review (NPR), sustaining and modernizing the nuclear weapons complex, the triad of nuclear forces, the human capital, and key supporting command/control/communications (C3) and intelligence/surveillance/

reconnaissance (ISR) capabilities is essential to retain confidence in the deterrent's long-term credibility, provide tools to combat proliferation, and assure our scientific and innovation edge.

Next, in full partnership with the other combatant commands, we must improve our plans, procedures, and capabilities to address trans-regional problems. Ongoing operations demand our full commitment, and USSTRATCOM's activities both enable and support joint operations around the world. The Command's work to synchronize and advocate for missile defense, ISR, electronic warfare, and combating WMD plans and capabilities helps bring unity of effort and flexible capabilities to trans-regional operations. Whether providing space-based communications or position, navigation, and timing (PNT) information, rapidly transmitting data around the world, or ensuring tested, capable missile defenses or other globally significant capabilities are developed, positioned, and optimally managed, USSTRATCOM is instrumental in winning today's dynamic joint fight.

Finally, we must continue to improve our capabilities and operating concepts in the important civil and national security areas of space and cyberspace. Ensuring uninterrupted access to space and space-based capabilities, improving our awareness of objects and activities in space, integrating their effects with all operational phases, improving space access, protection, and resilience, and expanding our planning and implementation for partnership operations requires that we continue our investment and that we demand acquisition results. For cyberspace, we must enhance network protection and mature our organizations, capabilities, workforce, and partnerships to ensure effective operations.

STRATEGIC DETERRENCE

In today's complex security environment, the concept of strategic deterrence must encompass strategies to deter adversaries and dissuade competitors across the full range of their

capabilities. We must consider actors and capabilities in aggregate, not in a vacuum, a need that highlights the importance of a better understanding of adversaries' values, motivators, capabilities, intentions, and decision-making processes. Not every potential adversary has or seeks nuclear weapons, and modern deterrence requires broad coordination, tailored strategies, effective capabilities, international cooperation, and focused capabilities like conventional prompt global strike.

Still, USSTRATCOM's first priority is to deter nuclear attack on the United States, our allies, and our partners. Last year, the Quadrennial Defense Review (QDR), the NPR, and the New Strategic Arms Reduction Treaty (New START) discussions produced an important national consensus that affirmed the necessity of the United States' nuclear deterrent and the funding required to sustain it. The president has pledged that the United States will maintain a safe, secure, and effective nuclear deterrent as long as nuclear weapons exist. USSTRATCOM is now committed to implementing New START and to advocating for planned investment in the deterrent force. The updated "1251 Report" submitted in February of this year outlines both DoD and Department of Energy nuclear funding requirements through Fiscal Year (FY) 2021. While budget estimates will be refined as major program baselines evolve, these important investments must begin immediately. Congress approved the first of these increases for the National Nuclear Security Administration (NNSA) in initial FY 2011 continuing resolutions, and I strongly urge full funding in FY 2011 and 2012.

Nuclear Enterprise. The FY 2011 and 2012 budget requests reverse several years of downward trend in nuclear enterprise funding. These budgets provide investments in the facilities, equipment, and personnel dedicated to sustaining and managing the nation's nuclear weapons, as well as to dismantling weapons no longer needed. To emphasize the importance of

this investment and to better understand the conditions, urgent needs, and impending challenges across the complex, I plan to visit each lab and production facility during my first 60 to 90 days in command.

The men and women of America's nuclear weapons complex perform uniquely difficult, highly technical, and demanding work. As our stockpile ages well beyond each weapon's originally designed lifespan, robust stockpile surveillance and assessment programs will enable strategic deterrence and stability at New START force levels. Weapon safety, reliability, and performance may change in ways we cannot fully predict, and surveillance activities permit confidence and continued stockpile certification without nuclear testing. Dedicated surveillance and life extension studies constitute the best means of informing the President and the Congress of our nuclear weapons' health, status, and requirements. The NPR's case-by-case approach to studying and selecting from the full range of life extension options (refurbishment, reuse, and, if needed, replacement) ensures the best future for our stockpile.

Today, a narrow window is available to synchronize weapon sustainment efforts for the W76-1 and B61 (full scope) life extension activities—cost-effectively introducing improved safety and security features, avoiding a second B61 nuclear refurbishment in the 2020s, and potentially reducing the stockpile by consolidating four legacy B61 variants into a single weapon. In addition, a Nuclear Weapons Council study of W78 ICBM and W88 SLBM life extension program options will examine opportunities to use modular fuze components and develop a possible common warhead, potentially reducing costs and supporting long-term capability sustainment. These and future actions that evaluate ways to reduce warhead numbers and types through stockpile commonality and flexibility offer the opportunity to continue

accomplishing our strategic deterrence mission while also achieving the goal of a smaller, more efficient stockpile.

Strategic Delivery Vehicles. The NPR also affirmed the continuing need for the nuclear triad, which provides the President with multiple options for a variety of scenarios. The value of the triad lies in its flexibility and responsiveness to the changing world environment and in its ability to hedge against technical failure, geopolitical change, or a breakthrough in another nation's capabilities. America's strategic forces require continued investment to ensure their future capability, and USSTRATCOM is actively engaged with our Service partners to define and advocate for necessary nuclear force modernization and recapitalization programs.

ICBMs. The widely dispersed and responsive Minuteman III ICBM force provides high readiness, low operating costs, and sovereign basing with multiple aim points that complicate adversary targeting. The Air Force is successfully concluding decade-long efforts to enhance safety and security and to sustain the Minuteman force through 2020. The Air Force is also evaluating requirements to sustain the force through 2030. USSTRATCOM supports these programs and is working with the Air Force on a Capabilities Based Assessment (CBA) and pre-Analysis of Alternatives (AoA) activities that begin to define options for a follow-on land-based strategic deterrent beyond 2030.

SLBMs. Ohio-class SSBNs provide an assured and highly survivable response capability, and the highly accurate Trident II D5 strategic weapon system continues to exceed the demanding operational reliability standards established almost thirty years ago. By the time they begin to retire in 2027, the Ohio-class SSBNs will have served for more than 40 years. The Navy completed an Ohio-class follow on platform AoA and, with USSTRATCOM, continues to refine specific replacement requirements. USSTRATCOM fully supports Navy efforts to

maintain the current fleet, fund the necessary research and development for its replacement, and sustain the Trident II D5 ballistic missile and associated infrastructure to satisfy future deterrent requirements. For example, current infrastructure at Naval Base Kitsap-Bangor, WA lacks sufficient Explosive Handling Wharf (EHW) capacity to meet growing missile handling requirements. A second Pacific EHW wharf at Naval Base Kitsap-Bangor, WA is essential to long-term SSBN readiness.

Bombers. America's B-2s and B-52s ensure that the President has visible and flexible conventional and nuclear global strike and deterrence options. Affirming their critical deterrent role, the nuclear-capable bomber force transitioned to USSTRATCOM's day-to-day operational control in 2010. USSTRATCOM now has a far stronger voice in balancing this unique, dual-capable nuclear and conventional bomber force's day-to-day readiness, training, and operational employment. While the Air Force continues to sustain mission-critical systems, it will also soon begin developing a new long-range, dual-capable penetrating bomber. Coupled with the development of a new bomber, two additional capabilities will ensure the viability of the air-breathing leg of the Triad for decades to come. Air Force investments will sustain the Air Launched Cruise Missile through 2030 (or until a suitable replacement is fielded), ensuring standoff capability for the long term. Further, the bomber force must be supported by a fleet of new aerial refueling tankers to extend their range and assure the bombers' strategic and extended deterrence roles. USSTRATCOM supports Air Force progress toward ensuring the long term health of the airborne component of our strategic capability.

Nuclear Command, Control, and Communications. A reliable, assured C3 capability from the President to the nuclear forces is fundamental to an effective strategic deterrent. National leaders, commanders, ISR assets, and strategic forces must share assured linkages to

confidently understand and effectively address nuclear mission demands. Current systems require investments to ensure reliability and address looming capability gaps in our National Leadership Command Capability.

A new Strategic Command and Control Complex and Nuclear C3 node at Offutt Air Force Base, Nebraska is at the center of our nuclear C3 plans. The FY 2012 Budget seeks a first increment of $150M to begin replacing the aging and fragile Curtis E. LeMay building and colocated facilities. Today's building, command center, and computer systems took shape long before the IT revolution and now lack the capacity to support current mission demands. The buildings' systems strain to support numerous computer and communication systems, and the spaces occasionally experience serious heating and cooling problems, electrical failures, and other outages. For example, in December 2010 and January 2011, two water pipe ruptures caused significant system outages and dislocated staff for several days, although the Command remained capable of performing its missions due to extraordinary workarounds and the remarkable efforts of the dedicated staff and a small army of outside emergency help.

Prior to defining the current requirement, USSTRATCOM—in consultation with the Army Corps of Engineers and the Air Force—evaluated sustaining the status quo, renovating the existing facility, or engaging in new construction. The evaluation concluded that new construction offered the most operationally efficient solution to support USSTRATCOM's missions, operations, and nuclear C3 needs. The new facility will ensure an EMP-protected, flexible, sustainable, reliable, and collaborative environment with an infrastructure that meets the security challenges of today and tomorrow.

Conventional Prompt Global Strike. A limited, credible, conventional Prompt Global Strike (PGS) capability would provide the President with an important deterrent option in some

strategic scenarios. Today, we still lack the ability to rapidly deliver conventional effects against fleeting or geographically isolated targets, allowing a potential adversary to establish a sanctuary using mobility and strategic depth. Research, development, test, and evaluation projects continue making progress, and I ask you to continue supporting these PGS efforts.

International Engagement: Deterring and dissuading nuclear threats in today's national security environment also requires careful attention to international relationships. While the specter of global nuclear war may be more remote than decades ago, the possibility for miscalculation between nuclear-armed states remains a perilous threat to global security. As noted in the NPR, "Enduring alliances and broad-based political relationships are the foundation of strategic stability and security." Indeed, many nuclear-armed states are important partners in combating proliferation. New START lowers the maximum number of U.S. and Russian strategic offensive arms, restores an important, confidence-building verification regime, and provides opportunities to continue military-to-military engagement. China's willingness to consider and study Secretary Gates' proposal for a strategic security dialogue represents an important avenue for growth between our two militaries in this area as well. USSTRATCOM will continue to support DoD, Department of State, and geographic combatant command activities to develop stable and cooperative relations with other responsible nuclear powers and will be prepared to provide advice on other arms control measures that could encompass a greater range of weapons.

SPACE

Throughout the 20th century, the U.S. and other countries developed and exploited the space domain's extraordinary potential, including changing how we navigate, communicate, and understand our world. However, the domain is increasingly congested, contested, and

competitive. Guaranteeing mission assurance through adequate Space Situational Awareness (SSA), resilience, and critical-asset protection is essential. The new National Space Policy, signed by the President, and the National Security Space Strategy (NSSS), co-signed by the Secretary of Defense and Director of National Intelligence, emphasize the need to continue developing resilient capabilities which will improve our ability to satisfy combatant commanders' requirements for uninterrupted ISR, expanded military satellite communications, and PNT support. Implementing the NSSS will position the national security space enterprise to shape and strengthen the space domain's safety, stability, and security; to maintain and enhance U.S. advantages in space; to energize the U.S. industrial base by engaging a broad range of partners; to prevent and deter aggression; and to improve sustainability, acquisition, and flexibility of U.S. space capabilities.

Situational Awareness. Space Situational Awareness (SSA) is central to mission assurance and increasingly important. As part of its SSA mission, USSTRATCOM now tracks more than 22,000 orbiting objects. Approximately 1,100 of these objects are active satellites, but the remaining debris litter a variety of orbits and threatens both critical systems and human spaceflight. While space surveillance is improving, we do not yet have robust, assured, and real-time situational awareness of the orbital domain. Current and future investments should expand data integration, sharing, and exploitation; improve object detection, identification, and tracking; and advance our ability to characterize potential collisions (conjunctions). Notably, the proposed Space Fence promises to expand detection capacity more than tenfold from just two or three locations outside the continental United States and to construct a more comprehensive orbital picture. Increasing the number of objects tracked will be largely useless, however, without corresponding improvements in data integration and exploitation technologies. As part of its

SSA mission, the Joint Space Operations Center (JSpOC) must also be prepared to identify and attribute purposeful space system interference and provide timely recommendations to address the interference. Without space situational awareness of the orbital domain, link segment, and supporting ground infrastructure, any plans for resilience, mission assurance, augmentation, and reconstitution will have a weak underpinning. USSTRATCOM fully supports funding for both the JSpOC Mission System (JMS) and planning and design work for a modern JSpOC facility that will facilitate a generational leap from static displays to automated, real-time visual conjunction analyses—improving our ability to protect critical space-based assets and maintain our free access to and use of space. In addition, technology will soon allow us to link multiple sensors together in a single network that will meet the needs of many users.

Cooperation. As a global domain, space and space-based capabilities operate irrespective of geographic or military boundaries. As more nations join the space-faring ranks each year and the number of objects in earth orbit grows, the need to establish norms of behavior and to improve the cooperation and collaboration among responsible space users grows as well. Our objective is to sustain a safe, stable, and secure space domain while maintaining the national security advantages space systems provide. U.S. efforts to share SSA data represent an important step toward greater international space cooperation, which should eventually help to integrate sensors and data from allies and partners worldwide and ultimately move towards a combined space operations center.

Today, the USSTRATCOM SSA sharing community includes more than 41,000 users in 141 countries. Our efforts promote the safe and responsible use of space by providing satellite operators with highly accurate predictions of close approaches between space objects for every satellite operator. Since the Secretary of Defense delegated his authority to enter into

agreements with commercial entities to the USSTRATCOM Commander last September, we have concluded 19 agreements and are processing others. Each partner and each agreement signifies an operational relationship that can yield important exchanges, perhaps someday leading to a broad, international partnership for space situational awareness. USSTRATCOM fully supports expanded planning and implementation for space partnership operations among allies, coalition partners, and commercial interests and will work with our partners in the DoD and elsewhere to help review proposals to establish normalized behavior.

Space-Based Capabilities. Enabling better situational awareness will improve the overall U.S. space posture; however, long-term, uninterrupted capability from space requires equal dedication to protection, resilience, augmentation, and reconstitution of assets in space, supported by timely design and development, cost-effective acquisition, and high-confidence space launch. Today's operating forces rely on space capabilities throughout the kill chain and beyond. Putting already stressed space capabilities that allow the joint force to navigate, communicate, see the battlefield, and strike under all conditions in the kill chain places those same valuable capabilities on any potential adversary's target list. USSTRATCOM fully supports DoD efforts to improve resilience and increase the protection of key space assets.

Launch. Reliable space capabilities also require an assured ride to orbit. Evolved Expendable Launch Vehicles (EELVs) are the DoD's primary launch vehicles and the sole U.S. vehicles for much of the national security manifest. USSTRATCOM supports further Air Force investments in this and other programs that will assure our access to space. Additionally, improvements in manifest and scheduling processes and investments designed to sustain and ensure national launch facilities' availability for future demand will maximize synergies between launch management and national priorities.

Industrial Base Concerns. Beneath our national security space requirements lies the need for a stable, responsive, and innovative national industrial base. Since the space age began, we have rarely been so reliant on so few industrial suppliers. Many struggle to remain competitive as demand for highly specialized components and existing export controls reduce their customers to a niche government market. Careful interagency planning that more tightly defines and oversees requirements, supported by stable budgets and production rates will help sustain a national industrial base essential to commercial users, military space, and the strategic deterrent. The retirement of the Space Shuttle and other changes at NASA also injected significant concern into the solid rocket motor industrial base—an industry we cannot afford to lose. Substantial weakening of this capability would impede current strategic system sustainment and follow-on development. While industry adjustments are inevitable, DoD is developing a plan in consultation with NASA to sustain the solid rocket motor industrial base to ensure we retain right-sized, cost-efficient, and viable design, development, and production capabilities. USSTRATCOM supports these important DoD efforts to improve program stability, increase the quantity and quality of the acquisition workforce, strengthen clarity and articulation in the requirements process, and stimulate scientific and technological advancements.

CYBERSPACE

Last fall in *Foreign Affairs*, Deputy Secretary of Defense William Lynn noted that, "Every day, U.S. military and civilian networks are probed thousands of times and scanned millions of times." Like space, cyberspace capabilities have rapidly become critical but also increasingly vulnerable. Cyberspace's pervasive presence, high importance, difficulty of attribution, and low cost of entry highlight some of our challenges. Combined with a growing,

global reliance on cyberspace and its hosted capabilities, this constant evolution challenges mission assurance efforts—particularly as the threat moves from exploitation to disruption. Ensuring reliable, sustainable networks, freedom of access, and freedom of maneuver is not just a DoD problem. This is a national security problem. Assuring access demands sustained, resilient, and flexible approaches to maturing our defense capabilities, our capacity, and our cooperative relationships within and beyond the U.S. government.

Capabilities. The most important asset any commander can have is robust, up-to-date situational awareness. Cyberspace is dynamic, and specific threats require specific countermeasures. The Maginot Line failed because it was static and the defense failed to anticipate and address technological and tactical changes. "After the fact" detection and attribution don't work in cyberspace today either. The offense always has a strong advantage, overwhelming, subverting, or defeating static defenses. Continued advances in system and organization teamwork, coupled with the development and deployment of information-based capabilities and intelligence-driven sensors that "see" intrusions and can respond at equivalent speed is essential. Driven by strong, capable organizations, dynamic, agile, and informed capabilities that comprehend the network and mitigate threats at the boundary will significantly strengthen defense of DoD networks.

In response to the growing threat, last year the DoD established U.S. Cyber Command (USCYBERCOM) at Fort Meade, MD as a sub-unified command to USSTRATCOM. USSTRATCOM delegated responsibilities to USCYBERCOM to coordinate, plan, synchronize, and execute cyberspace operations in order to better defend DoD networks and to support other combatant commanders. We must accelerate the acquisition of comprehensive, shared cyber awareness tools to expand opportunities to secure critical information, reduce points of

vulnerability, and develop responses to ensure warfighter access to essential information systems.

Capacity. Today, operators at USCYBERCOM and its subordinate Service components work to defend against and attribute numerous information network intrusion attempts. The cyber workforce is growing, but our organizations and capabilities must also grow to keep pace with ongoing operations. USSTRATCOM is working with USCYBERCOM to improve the cyber awareness of every DoD member with access to an information system, strengthen organizations, resolve roles/responsibilities, expand partnerships, build technological and human capacity for full-spectrum cyberspace operations, and integrate cyber capabilities into every commander's plans and operations. Recruiting adequately trained and equipped cyber warriors is challenging, but fortunately young Americans grow up learning and adapting to new technological platforms from a young age. Service cyber career paths are still being developed, and these critical, technical skills need both time to develop and sustained investment to prevent their atrophy. Sustained force development emphasis and investment is essential. The U.S. is also home to the world's premier educational and commercial information technology entities. We must continue to capitalize on this capacity and partner with these organizations on our requirements and to spur domestic math and science interest. Doing so will help develop, expand, and sustain a base of cyber expertise and adapt DoD personnel processes to attract, develop, and retain the cyber professionals necessary to protect critical DoD infrastructure and preserve U.S. freedom of action in cyberspace.

Cooperation. Cyber defense must include a wide range of partners. After all, this is truly a national security issue, making interagency and allied partner engagement and information sharing essential to a robust defense. Military operations depend on the broader

U.S. information technology infrastructure, and defending military networks will net fewer benefits if the wider civilian infrastructure remains at much greater risk. The Department of Homeland Security (DHS) is ultimately responsible for coordinating the protection of the ".gov" and domestic ".com" domains, but DoD has much to offer in terms of intelligence and technical support. The DoD – DHS Memorandum of Understanding signed last fall lays important groundwork for enhanced cooperation, mutual support, and synchronized operations.

WINNING TODAY'S FIGHT

In strategic deterrence, space, and cyberspace, USSTRATCOM both operates forces and supports the full range of military operations. The broad scope of our responsibilities and trans-regional capabilities is clearly woven into the fabric of today's operations. Winning the fight, whether we are either a supported command or are supporting the geographic combatant commands, is something our team strives to do each and every day. However, USSTRATCOM also has responsibilities to integrate, synchronize, and advocate for other capabilities with trans-regional impact, and we are dedicated to partnering with other combatant commands to improve the warfighting effectiveness of these capabilities.

Information Operations

Consistent with our mission to improve strategic joint capabilities, USSTRATCOM participated in a 2010 Secretary of Defense directed Strategic Communication (SC) and IO Front-End Assessment, designed to evaluate and recommend improvements for DoD roles, missions, definition, management, and resources for SC and IO. As a result of the assessment, USSTRATCOM will reorganize the Joint Information Operations Warfare Center (JIOWC) at Lackland AFB, TX. Existing JIOWC resources and missions not specific to electronic warfare

will be realigned to the Joint Staff, and USSTRATCOM will remain the DoD lead for Electronic Warfare (EW).

Electronic warfare. The electromagnetic spectrum spans almost every modern technological convenience. While operational plans normally assume unfettered spectrum access, this assumption is not assured. Changing industry standards, global growth of civilian devices, military bandwidth requirements, and disruptive or destructive adversary electronic warfare capabilities all threaten to pinch or sever the shrinking electromagnetic links between national security platforms and the operating forces that rely on them.

Recognizing future threats, potential limitations, urgent warfighter needs, and the need for unified DoD advocacy, JIOWC completed several Joint Requirements Oversight Council (JROC) tasks to examine capability gaps and solutions for emerging electromagnetic spectrum threats. The National Defense Authorization Act for Fiscal Year 2010 required DoD to develop an EW strategy, submitted to Congress last year. That EW strategy concluded that we must move beyond the traditional understanding of EW by combining it with other kinetic or non-kinetic capabilities to increase U.S. combat effectiveness and achieve electromagnetic spectrum superiority. USSTRATCOM is planning to establish a Joint Electronic Warfare Center to advocate for and support DoD Joint EW capability requirements, resources, strategy, doctrine, planning, training, and operational support.

Missile Defense

The Ballistic Missile Defense System (BMDS) exists to meet combatant commands' theater defense needs and to provide for the limited defense of the United States. Working with geographic combatant commands and the Missile Defense Agency (MDA), our efforts focus on building tailored, regional missile defense architectures using the concept of a Phased Adaptive

Approach (PAA) and on meeting urgent warfighter capability needs. USSTRATCOM's work provides a comprehensive assessment of the fielded BMDS's suitability and effectiveness and combines warfighter needs for air, cruise missile, and ballistic missile defense capabilities to inform programmatic actions and guide future R&D investment priorities.

At the 2010 Lisbon Summit, North Atlantic Treaty Organization NATO allies affirmed the PAA for missile defense as a means to address the continued qualitative and quantitative growth of global ballistic missile programs. The Allies also invited the Russian Federation to participate in missile defense cooperation. As a strategy, PAA applies to several geographic combatant commands, and USSTRATCOM's current challenge is to make sound, analytically-based recommendations to balance limited BMD assets worldwide. The European PAA's four phases of increasing capability are designed to defend against existing and near-term threats posed by short- and medium-range ballistic missiles and to build up defenses against long-range ballistic threats over time as those threats mature. As stated during the New START debate, the U.S. will not agree to any ballistic missile defense limitations or constraints and indeed intends to continue developing and deploying systems consistent with U.S. interests. The U.S. missile defense program is not designed to counter the strategic forces of Russia or China, but rather to address limited ballistic missile threats such as those posed by Iran and North Korea.

As various regional PAAs develop, USSTRATCOM will continually re-evaluate the standing Global Integrated Missile Defense Concept of Operations and other acquisition, deployment, basing, and employment plans for missile defense capabilities between and across all areas of responsibility. Our analysis will ensure that the joint warfighters' requirements receive deliberate management and readiness structures to ensure timely, flexible deployment, employment and redeployment of tested, understood BMD capabilities during and after crises.

Consistent with the Ballistic Missile Defense Review, new advancements and allied technologies must be made interoperable with existing systems, including required improvements in discrimination capabilities essential to the efficient employment of limited missile defense resources.

Intelligence, Surveillance, and Reconnaissance

Timely, useable situational awareness and intelligence analysis is essential to all military operations. Airborne, submarine, and space-based ISR capabilities all provide key indications and warning information to commanders facing an array of traditional adversaries, non-traditional threats, and challenging intelligence problems. For the past decade, ISR efforts focused primarily on meeting the expanding demand in the U.S. Central Command (USCENTCOM) area of responsibility. As overseas contingency operations change, DoD must carefully examine force requirements to ensure we organize, train, and equip a balanced force across the range of requirements, including anti-access environments and New START verification. An objective, multi-domain, capabilities-based architecture that improves the ability to identify requirements across geographic boundaries and the range of potential threats is essential to appropriately balancing risk against necessary programmatic, budgetary, and acquisition decision points.

USSTRATCOM's ISR efforts achieved significant resource efficiencies and shaped ISR capability decisions through initiatives like the ISR Force Sizing Construct project, the High Altitude Transition study, the Synoptic Operational Area Reconnaissance Study, and the Mobile Nuclear Air Sampling Study. USSTRATCOM also successfully advocated for a critical USCENTCOM ISR capability—designed and executed in approximately 30 months and at a lower cost than traditional acquisition processes. The Services and intelligence community must

continue to strive for better integration in order to reach greater efficiencies—not only for the collection platforms themselves but also across the still-limited processing, exploitation, and dissemination architecture needed to transform collections into actionable intelligence.

Combating Weapons of Mass Destruction

Another mission area requiring sustained attention is CWMD, since the pursuit of WMD by violent extremists and their proliferation to additional states remains the primary threat to the United States, our allies, and our partners. USSTRATCOM received the responsibility to synchronize DoD CWMD activities in 2005 and has made discouraging, detecting, deterring, and, if necessary, defeating these threats a priority for theater operations and strategic deterrence. Some actors seek nuclear, biological, or chemical weapons to coerce their neighbors or to deter U.S. intervention in regional conflicts. Others may seek such weapons to use them in terrorist attacks or as weapons of war. Diffuse networks of non-state entities, secretive state sponsors, shell corporations, and terrorist-financed transactions challenge our intelligence organizations to develop comprehensive, accurate, and actionable assessments that enable global CWMD. USSTRATCOM continues to pursue further national CWMD capability improvements with interagency partners to coordinate CWMD objectives, plans, and activities.

Among current and future CWMD enhancements are technological improvements to detect, analyze, and assess WMD developments. The 2010 QDR affirmed the need to enhance National Technical Nuclear Forensics capabilities to increase nuclear threat attribution and to deter those considering nuclear weapons transfer or use. In the past year, the USSTRATCOM Center for CWMD (SCC WMD) embedded Proliferation Security Initiative activities within U.S. Africa Command, U.S. Central Command and U.S. Southern Command exercises and supported planning and funding efforts to expand exercise participation and training synchronization across

geographic combatant commands. Finally, SCC WMD collaboratively operates the Interagency Combating Weapons of Mass Destruction Database of Responsibilities, Authorities, and Capabilities (INDRAC) System with the Defense Threat Reduction Agency. INDRAC provides a strategic level information reference resource to inform CWMD operations, planning, advocacy, training, and exercises across the government.

In the 2010 QDR, the Secretary of Defense directed DoD to establish a Joint Task Force Elimination Headquarters to "better plan, train, and execute WMD-elimination operations…with increased nuclear disablement, exploitation, intelligence, and coordination capabilities." Last December, Secretary Gates tasked USSTRATCOM to execute this task and stand up a Standing Joint Force Headquarters for Elimination of WMD with "standing exploitation and intelligence cells in order to plan, train for, and execute global WMD elimination operations." USSTRATCOM is currently analyzing the requirements necessary to implement the Secretary's direction.

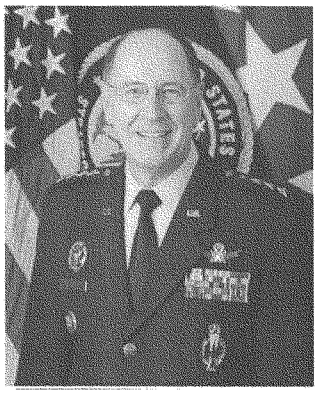
CONCLUSION

Great challenges lie ahead of the United States and USSTRATCOM, but so too do great opportunities. The Command is dedicated to being an effective steward of taxpayer resources while maintaining a strategic force structure ready and able to deter aggression, preserve U.S. freedom of action, and defeat adversaries when necessary. The uncertainty inherent in today's complex, multi-domain security environment requires that we summon our best efforts to develop and deploy the plans, systems, and forces needed to sustain America's deterrent, ensure unfettered access to and through space and cyberspace, and win the dynamic joint fight. I look forward to working with Congress as we pursue these priorities together, and I appreciate your

support and counsel in the months and years ahead. Thank you again for the opportunity to be here today.

General C. Robert "Bob" Kehler

Commander, U.S. Strategic Command



Gen. C. Robert "Bob" Kehler is Commander, U.S. Strategic Command, Offutt Air Force Base, Neb. He is responsible for the plans and operations for all U.S. forces conducting strategic deterrence and DoD space and cyberspace operations.

General Kehler entered the Air Force in 1975 as a distinguished graduate of the Air Force ROTC program. He has commanded at the squadron, group, wing and major command levels, and has a broad range of operational and command tours in ICBM operations, space launch, space operations, missile warning and space control. He commanded a Minuteman ICBM operations squadron at Whiteman AFB, Mo., and the Air Force's largest ICBM operations group at Malmstrom AFB, Mont. He served as Deputy Director of Operations, Air Force Space Command; and commanded both the 30th Space Wing at Vandenberg AFB, Calif., and the 21st Space Wing at Peterson AFB, Colo. As Deputy Commander, U.S. Strategic Command, he helped provide the President and Secretary of Defense with a broad range of strategic capabilities and options for the joint warfighter through several diverse mission areas, including space operations, integrated missile defense, computer network operations and global strike. General Kehler also commanded Air Force Space Command and America's ICBM force before its transition from Air Force Space Command to Air Force Global Strike Command in December 2009.

The general's staff assignments include wing-level planning and tours with the Air Staff, Strategic Air Command headquarters and Air Force Space Command. He was also assigned to the Secretary of the Air Force's Office of Legislative Liaison, where he was the point man on Capitol Hill for matters regarding the President's ICBM Modernization Program. As Director of the National Security Space Office, he integrated the activities of a number of space organizations on behalf of the Under Secretary of the Air Force and Director, National Reconnaissance Office.

EDUCATION
1974 Bachelor of Science degree in education, Pennsylvania State University, State College
1980 Distinguished graduate, Squadron Officer School, Maxwell AFB, Ala.
1982 Air Command and Staff College, by correspondence
1987 Master of Science degree in public administration, University of Oklahoma, Norman
1988 Armed Forces Staff College, Norfolk, Va.

1992 Air War College, by seminar
1995 Naval War College, Newport, R.I.
1995 Master of Arts degree in national security and strategic studies, Naval War College, Newport, R.I.
1998 Program for Executives, Carnegie-Mellon University, Pittsburgh, Pa.
2002 National Security Leadership Course, Maxwell School of Citizenship and Public Affairs, Syracuse University, N.Y.
2006 Program for Senior Executives in National and International Security, John F. Kennedy School of Government, Harvard University, Cambridge, Mass.

ASSIGNMENTS
1. April 1975 - June 1975, student, missile combat crew operational readiness training, Vandenberg AFB, Calif.
2. June 1975 - January 1981, missile combat crew member, instructor, senior evaluator, and Emergency War Order instructor, 341st Strategic Missile Wing, Malmstrom AFB, Mont.
3. January 1981 - April 1982, personnel staff officer, Air Staff Training Program, Headquarters U.S. Air Force, Washington, D.C.
4. April 1982 - January 1985, missile operations staff officer, Headquarters Strategic Air Command, Offutt AFB, Neb.
5. January 1985 - January 1988, resource planner, Directorate of Air Force Operations Plans, and Chief, Strategic Missile Branch, Secretary of the Air Force Office of Legislative Liaison, Headquarters U.S. Air Force, Washington, D.C.
6. January 1988 - June 1988, student, Armed Forces Staff College, Norfolk, Va.
7. July 1988 - July 1991, nuclear employment and policy planner, Nuclear and Chemical Division, Joint Staff, the Pentagon, Washington, D.C.
8. July 1991 - July 1992, Commander, 508th Missile Squadron, Whiteman AFB, Mo.
9. July 1992 - February 1993, Deputy Commander, 351st Operations Group, Whiteman AFB, Mo.
10. February 1993 - August 1994, Commander, 341st Operations Group, Malmstrom AFB, Mont.
11. August 1994 - July 1995, student, Naval War College Newport, R.I.
12. July 1995 - August 1995, Inspector General, Headquarters Air Force Space Command, Peterson AFB, Colo.
13. August 1995 - June 1996, Deputy Director of Operations, Headquarters AFSPC, Peterson AFB, Colo.
14. June 1996 - June 1998, Commander, 30th Space Wing, Vandenberg AFB, Calif.
15. June 1998 - September 1999, Chief, Space Superiority Division, and Chairman, Space Superiority and Nuclear Deterrence Panel, Office of the Deputy Chief of Staff for Plans and Programs, Headquarters U.S. Air Force, Washington, D.C.
16. September 1999 - August 2000, special assistant to the Director of Programs, Office of the Deputy Chief of Staff for Plans and Programs, Headquarters U.S. Air Force, Washington, D.C.
17. August 2000 - May 2002, Commander, 21st Space Wing, Peterson AFB, Colo.
18. May 2002 - May 2005, Director, National Security Space Integration, Office of the Under Secretary of the Air Force, Washington, D.C.
19. May 2005 - October 2007, Deputy Commander, U.S. Strategic Command, Offutt AFB, Neb.
20. October 2007 - January 2011, Commander, Air Force Space Command, Peterson AFB, Colo.
21. January 2011 - present, Commander, U.S. Strategic Command, Offutt AFB, Neb.

SUMMARY OF JOINT ASSIGNMENTS
1. July 1988 - July 1991, nuclear employment and policy planner, Nuclear and Chemical Division, Joint Staff, the Pentagon, Washington, D.C., as a major and lieutenant colonel
2. May 2005 - October 2007, Deputy Commander, U.S. Strategic Command, Offutt AFB, Neb., as a lieutenant general

OPERATIONAL INFORMATION
Weapon systems: Minuteman II and Minuteman III, Defense Support Program
Launch systems: Titan II, Titan IV and Delta II

MAJOR AWARDS AND DECORATIONS
Distinguished Service Medal with oak leaf cluster
Defense Superior Service Medal
Legion of Merit with two oak leaf clusters
Defense Meritorious Service Medal
Meritorious Service Medal with three oak leaf clusters
Air Force Commendation Medal

PUBLICATIONS
"Nuclear Armed Adversaries and the Joint Commander," Naval War College Review, Winter 1996

EFFECTIVE DATES OF PROMOTION
Second Lieutenant April 10,1975
First Lieutenant April 10,1977
Captain April 10,1979
Major May 1, 1985
Lieutenant Colonel June 1,1989
Colonel Feb. 1,1994
Brigadier General July 1, 2000
Major General Aug. 1, 2003
Lieutenant General June 1, 2005
General Oct. 12, 2007

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THE HOUSE ARMED SERVICES COMMITTEE

STATEMENT OF

DR. JAMES N. MILLER
PRINCIPAL DEPUTY UNDER SECRETARY OF DEFENSE
FOR POLICY

BEFORE THE HOUSE
COMMITTEE ON ARMED SERVICES
SUBCOMMITTEE ON STRATEGIC FORCES

MARCH 2, 2011

NOT FOR DISTRIBUTION UNTIL RELEASED BY
THE HOUSE ARMED SERVICES COMMITTEE

Chairman Turner, Ranking Member Sanchez, and members of the subcommittee, thank you for the opportunity to testify regarding key strategic issues for the Department of Defense. It is a pleasure to join the new Commander of U.S. Strategic Command, General Bob Kehler.

My testimony today will focus on America's nuclear, missile defense, and space capabilities. As you know, just over a year ago, DoD submitted to Congress the Quadrennial Defense Review (QDR) and the Ballistic Missile Defense Review (BMDR), and soon thereafter the Nuclear Posture Review (NPR) and an interim Space Posture Review. We have recently submitted the first-ever National Security Space Strategy to close out the Space Posture Review, and are finalizing the first-ever Department of Defense Strategy for Operating in Cyberspace. Before summarizing progress in implementing these reviews and addressing current challenges, I'd like to say a few words about the broader strategic context in which we find ourselves today.

Strategic Context

Although my testimony today focuses on the Department's efforts relating to the high end of the conflict spectrum, it is critical to ground ourselves in the reality that we are a nation at war. We are on track to withdraw responsibly from Iraq by the end of 2011, and are making progress in Afghanistan and against al Qaida globally. We must win today's wars in order to shape the future in ways commensurate with U.S. vital interests. Indeed, a key objective of our campaign against terrorism is to prevent the proliferation of WMD to terrorists and other non-state actors.

The United States continues to focus on Iran and North Korea as engines of destabilizing proliferation. From their pursuit of nuclear capabilities and other WMD material, to the proliferation of ballistic missiles and other means of delivery, Iran and North Korea continue to flout UN Security Council resolutions and the views of the international community. We remain concerned that these states also pose substantial risks of transferring dangerous technology to other state or non-state actors.

Iran shows continued interest in pursuing its nuclear-related programs. Although we do not know if Iran will eventually decide to build nuclear weapons, the prospect of a nuclear-armed Iran is deeply concerning to the United States and the global community, and there is a risk that Iran's continued efforts will prompt neighboring states to pursue nuclear options. Iran already possesses the largest inventory of ballistic missiles in the Middle East, and it is continuing their development. Iran has also jammed commercial satellites to censor news to its public. In recent weeks, the regime in Tehran has curtailed internet access to its own people, and has claimed responsibility for defacing the website of the Voice of America.

For its part, North Korea continues its nuclear ambitions and missile development. In November 2010 it claimed to U.S. visitors that it was operating a uranium enrichment facility at Yongbyon – evidence that further supports the United States' longstanding assessment that the DPRK has pursued a uranium enrichment capability. It has also continued development of the

Taepo Dong 2 missile, which could reach the United States if developed into an intercontinental ballistic missile (ICBM). Its export of ballistic missiles and associated materials to Iran and Syria is evidence not only of North Korea's continued intransigence, but also the threat such proliferation poses to international stability more generally.

Even as the United States and its partners are working to prevent states like Iran and North Korea from acquiring and transferring nuclear weapons technology, we must recognize that the proliferation of advanced conventional weapons technology is more difficult to control. Many states are acquiring Anti-Access/Area Denial (A2/AD) capabilities intended to deny our forces access to key regions and allies, and to blunt the operations of forces that do deploy forward.

The United States welcomes a strong, prosperous, and successful China that plays a greater global role in supporting international rules, norms of responsible behavior, and institutions. At the same time, the United States and China's Asian neighbors remain concerned about the pace and scope of China's current military modernization efforts, which encompass a wide range of advanced air, air defense, naval, missile, space and cyberspace capabilities. The connection between China's significant military investments and the strategies to which they would be put to use is cause for concern. In this respect, greater transparency from China concerning its military could reduce the chance for misunderstanding and miscalculation. We continue to seek sustained U.S.-China military-to-military relations as a means to help reduce mistrust, enhance mutual understanding, and broaden cooperation.

U.S.-Russian relations improved significantly in 2010, as demonstrated by such developments as conclusion, ratification, and entry into force of the New START Treaty; the joint pressure applied to Iran's nuclear program; and the continued cooperation on transit and counternarcotics efforts in Afghanistan. While disagreements exist and will remain, we will continue fruitful dialogue on areas of mutual interest, including seeking cooperation on missile defense, and stability in space and cyberspace. We seek to responsibly sustain a stable relationship as the pace of military-technical innovation increases and the global security environment evolves.

A critical component of U.S. national security strategy is maintaining and enhancing our global network of alliances and partnerships. From our long-standing alliances forged in the middle of the 20th century to strong partnerships emerging today, America's approach to global leadership requires relationships that can adapt to 21st century security challenges. The Administration looks forward to working with this Congress to ensure that this global leadership is sustained and strengthened to meet the challenges of our time.

In all of our efforts regarding strategic issues, it is critical to maintain a whole of government approach. Examples in the strategic arena include DoD's collaboration with the National Nuclear Security Administration (NNSA) on nuclear non-proliferation as well as

nuclear modernization; with the Department of Homeland Security (DHS) on cyber security; and with the State Department on establishing the rules of the road for operating in space to encourage responsible actions in, and the peaceful use of, space.

DoD's partnership with U.S. industry is also critical. From the emerging technical challenges in space and cyberspace that require industry expertise and leadership, to the reform of export controls by building higher walls around the most sensitive items while ensuring that America's industrial base is globally competitive, the need to remain engaged with the business community has never been greater.

Nuclear Policy and Posture

Nearly a year ago, Secretary Gates delivered the 2010 NPR Report to Congress. The NPR provides a roadmap for advancing the President's Prague agenda; it articulates the Administration's comprehensive approach to reducing the role and number of nuclear weapons toward the ultimate goal of a world free of nuclear weapons, while sustaining, as long as nuclear weapons exist, a safe, secure, and effective nuclear arsenal. The NPR outlined five key objectives.

Preventing nuclear proliferation and nuclear terrorism

The 2010 NPR was the first to focus significantly on nuclear proliferation and terrorism, and gave first priority to their prevention.

Securing all vulnerable nuclear materials worldwide

About 2,000 tons of weapons-usable highly enriched uranium (HEU) and separated plutonium exist in hundreds of civilian and military locations around the world under varying levels of security. In the hands of terrorists, such materials could be used to create improvised nuclear devices with the capability to decimate cities and create economic and political damage on a global scale.

To implement the President's call for a focused and intensified international effort to lock down or remove such nuclear materials, the Administration is executing an integrated strategy that aligns authorities, capabilities and resources to reduce global nuclear threats. DoD is supporting these efforts through its Nunn-Lugar Cooperative Threat Reduction Program, and is requesting $121.1 million for this purpose in FY2012.

Bolstering the nuclear non-proliferation regime

The Administration continues to give top priority to reversing the nuclear ambitions of North Korea and Iran. The past year has met with some success, including increasingly strong sanctions of Iran, but much work remains. For the first time in ten years, the May 2010 Nuclear Nonproliferation Treaty (NPT) Review Conference reached consensus agreement to advance

disarmament and nonproliferation efforts based on the three pillars of the regime: nuclear nonproliferation, peaceful uses of nuclear energy, and nuclear disarmament. Further steps are needed to strengthen International Atomic Energy Agency (IAEA) safeguards, as well as address the critical issue of consequences for withdrawal from the NPT. We are working with the State Department to advance these critical activities.

Pursuing arms control efforts in support of NPT Article VI obligations

Entry into force of New START on February 5, which I will discuss in greater depth momentarily, was a key milestone in meeting U.S. obligations under Article VI of the NPT to pursue nuclear disarmament. Two additional areas where we hope to make progress include pursuing ratification and entry into force of a Comprehensive Nuclear Test Ban Treaty (CTBT), and beginning multilateral negotiations on a verifiable Fissile Material Cutoff Treaty (FMCT) in the Conference on Disarmament in Geneva.

Reducing the role of nuclear weapons in U.S. national security strategy

The sustained growth of unrivaled U.S. conventional military capabilities, improvements in missile defenses, and the easing of Cold War rivalries enable the United States to meet 21st century threats at significantly lower nuclear force levels and with reduced reliance on nuclear weapons. Further development of conventional prompt global strike (CPGS) and other long-range strike capabilities offers the possibility of further reducing the role of nuclear weapons while strengthening U.S. security. However, as long as nuclear weapons exist, the United States will maintain a safe, secure, and reliable nuclear arsenal.

Conventional prompt global strike

The 2010 NPR noted the potential value of CPGS capabilities to defeat time-urgent regional threats. DoD is exploring in particular the potential of conventionally-armed, long-range missile systems that fly a non-ballistic trajectory such as boost-glide systems. Such systems could "steer around" other countries to avoid over-flight and have flight trajectories distinguishable from an ICBM or submarine launched ballistic missile (SLBM). As we made clear during the New START Treaty negotiations, we would not consider such non-nuclear systems, which do not otherwise meet the definitions of the New START Treaty, to be "new kinds of strategic offense arms" for the purposes of the Treaty.

DoD continues to explore a broad range of possibilities for CPGS. Although still in an early stage of development, such capabilities would increase the options available to the President in time of crisis and conflict, including the ability to hold at risk key high-value regional targets such as WMD facilities and ballistic missiles with rapidly executed, high precision attacks. DoD proposes investing approximately $2 billion between now and 2016 for research and development of CPGS capabilities.

Other long-range strike

Beginning in the Quadrennial Defense Review and Nuclear Posture Review and extending through the last year, DoD conducted exhaustive analysis of the nation's requirements for a future long-range strike (LRS) family of systems, including the potential role for a follow-on bomber. Our analysis led the Department to undertake future improvements across these systems. In addition to funding for CPGS, the FY2012-FY2016 Future Years Defense Program (FYDP) includes the following enhancements:

- Expanding procurement of proven cruise missile systems, including the Joint Air-to-Surface Standoff Missile – Extended Range (JASSM-ER) and Tactical Tomahawk missiles.

- Developing a new dual-capable Long-Range Standoff (LRSO) missile to replace the current air-launched cruise missile in the latter half of the 2020s.

- Continuing to invest in upgrades to our fleet of B-2 bombers to ensure survivability.

- Initiating development of a new long-range, nuclear capable penetrating bomber capable of manned or unmanned operations, with $3.7 billion programmed through the FYDP.

Counter-WMD capabilities

The Administration continues to actively engage partners in robust exercises as part of the Proliferation Security Initiative (PSI) and has taken steps towards the President's goal of ensuring PSI is an enduring effort. We have conducted an extensive review of our planning processes as they relate to WMD threats, and are working to align our plans, organizations, and capabilities to ensure that DoD can respond effectively to WMD threats wherever they emerge. In addition, we have focused on enhancing national and international efforts to attribute the source of potential WMD attacks. These efforts support our ability to both respond to and deter the use of WMD.

Maintaining strategic deterrence and stability at reduced nuclear force levels

The New START Treaty allows the United States to continue to field a credible and flexible nuclear deterrent force for the duration of the treaty. In particular:

- The Treaty's limit of 1,550 accountable strategic warheads allows the United States to sustain effective nuclear deterrence, including sufficient survivable nuclear forces for an assured devastating second-strike capability.

- The Treaty's limit of 700 deployed ICBMs, deployed SLBMs, and deployed heavy bombers supports strategic stability by allowing the United States to retain a robust Triad of strategic delivery systems—while downloading all Minuteman III ICBMs to a single warhead each.

- The Treaty's limit of 800 deployed and non-deployed launchers of ICBMs, launchers of SLBMs, and nuclear-capable heavy bombers allows the retention of up to 100 ICBM and SLBM launchers, and nuclear-capable bombers, in a non-deployed status. When combined with the New START counting rule that a launcher is deployed only when mated with a missile, and the treaty's provisions on disabling individual launchers on strategic submarines and converting of heavy bombers to a conventional-only configuration, this allows the United States to minimize irreversible changes to nuclear force structure.

A key contribution of New START is its strong verification regime, which provides a firm basis for monitoring Russia's compliance with its treaty obligations while also providing important insights into the size and composition of Russian strategic forces.

- The United States and Russia will exchange initial New START databases no later than March 22, 2011. Required notifications for changes in that data, which were initiated on February 5 when the Treaty entered into force, will allow us to track changes in the status of Russian strategic offensive arms covered by the Treaty.

- The Treaty allows each party to conduct up to 18 on-site inspections each year. These inspections will begin after April 5.

The United States intends to pursue further reductions in strategic and non-strategic nuclear weapons with Russia, including both deployed and non-deployed nuclear weapons. Maintaining strategic stability with both Russia and China will remain a critical challenge in the years ahead. We continue to pursue high-level, bilateral dialogues with Russia and China aimed at promoting more stable, resilient, and transparent strategic relationships. Such discussions are moving forward with Russia, and we are seeking similar discussions with China. The lack of transparency surrounding China's nuclear programs – their pace and scope, as well as the strategy and doctrine that guide them – raises questions about China's future strategic intentions. We will continue to seek to engage China in a strategic dialogue, as I am convinced that we share mutual interests in maintaining strategic stability and avoiding an arms race.

Nuclear force structure

Maintaining each leg of the nuclear Triad – ICBMs, SLBMs, and dual-capable heavy bombers – under New START is key both to preserving strategic stability and hedging against any unexpected technical problems or operational vulnerabilities that may arise in one leg. The

Administration plans a robust nuclear Triad of 700 deployed ICBMs, SLBMs, and nuclear-capable heavy bombers under New START:

- We plan to retain all 14 Ohio-class SSBNs and deploy no more than 240 Trident II D5 SLBMs at any time.

- We also plan to retain up to 420 of the current 450 deployed Minuteman III ICBMs, each with a single warhead.

- And we plan to retain up to 60 nuclear-capable B-2A and B-52H heavy bombers, while completing the conversion of all nuclear-capable B-1B and some B-52H heavy bombers to conventional-only capability.

Strategic delivery system modernization

As articulated in the NPR and consistent with the New START Treaty, the Administration is committed to modernizing the nuclear Triad:

- Funding began for the OHIO-class replacement SSBN in FY2010 to support the FY2019 lead ship procurement. Continued research, development, technology, and engineering investments are included in the FY2012 President's Budget Request.

- The Navy plans to sustain the Trident II D5 missile, carried on the OHIO-class SSBN, through at least 2042 with a robust life extension program.

- The preparatory analysis for a follow-on ICBM capability to be fielded by the 2030 timeframe has begun.

- As I noted earlier, we will continue to maintain heavy bombers to provide a long-range air-delivered conventional and nuclear attack capability for the indefinite future, including upgrades to the B-2 and the development and fielding of a new long-range, nuclear-capable penetrating bomber starting in FY2012.

- As noted earlier, DoD is developing a new dual-capable Long-Range Standoff (LRSO) missile to replace the current air-launched cruise missile in the latter half of the 2020s.

Strengthening regional deterrence and reassuring U.S. allies and partners

At the NATO summit in Lisbon last year, President Obama joined other Heads of State in approving a new Strategic Concept that outlines a roadmap for ensuring NATO's common defense and security. The Strategic Concept committed NATO to the goal of creating the conditions for a world without nuclear weapons while at the same time reconfirming that as long as there are nuclear weapons in the world, NATO will remain a nuclear alliance.

In order to ensure that it maintains an appropriate mix of conventional, missile defense, and nuclear forces to deter and defend against the full range of threats to the Alliance, NATO has begun a year-long comprehensive review of NATO deterrent and defense forces, taking into account changes in the evolving security environment. We are now fully engaged in this effort with our NATO partners and we intend to complete this review before the 2012 NATO summit.

As part of the U.S. commitment to assure our Asian allies, the United States has engaged on a series of strategic dialogues on extended deterrence with the Republic of Korea (ROK) and Japan. The United States and South Korea have developed the Extended Deterrence Policy Committee (EDPC) as one of the enabling measures for an effective combined defense posture agreed to by the Secretary of Defense and the Minister of National Defense at their Security Consultative Meeting held on October 8, 2010. The EDPC is intended to provide transparency and reassurance that extended deterrence for South Korea is credible and enduring; the inaugural session is scheduled for later this month in Hawaii. DoD has also been working with Japan to develop a series of extended deterrence dialogues, and will host regular U.S.-Japan Extended Deterrence discussions every year for the foreseeable future. The inaugural session is scheduled for this week at the Pentagon.

Sustaining a safe, secure, and effective nuclear arsenal

The 2010 NPR highlighted the importance of sustaining a safe, secure, and effective nuclear deterrent. The Administration's FY2012 budget reflects our commitment to the modernization of our nuclear arsenal for the long term, including some $125 billion over the next ten years to sustain our strategic delivery systems, and about $88 billion over the same period to sustain our nuclear arsenal and modernize infrastructure. These are large investments, but essential to U.S. national security.

The NPR identified a number of NNSA nuclear weapons facilities that are decades old and must be replaced or modernized to ensure the reliability of a smaller nuclear arsenal. Two particularly critical facilities are the Chemistry and Metallurgy Research Replacement (CMRR) Facility and the Uranium Processing Facility (UPF), which are to be completed in the middle of the next decade. The CMRR and UPF are in their early design phases today; as their designs proceed, we will have more accurate estimates of their costs.

As the Committee is aware, NNSA is seeking an "anomaly" to allow the Weapons Activities account, part of NNSA's Defense Programs, to operate at the FY2011 President's Request during the Continuing Resolution (CR). If another CR is passed, the anomaly should be extended to continue implementation of several NPR-directed activities, including the life extension program study for the W78 nuclear warhead and design of the CMRR and UPF. The current House CR would cut in half the additional funding for Weapons Activities in the current CR, from $624 million to $312.4 million. If not corrected, this reduced funding level will delay needed investments and drive up program costs.

Missile Defense Policy and Posture

The February 2010 Ballistic Missile Defense Review report represented a major milestone in aligning U.S. missile defense posture with near-term regional ballistic missile threats, while offering a roadmap toward sustaining and enhancing our ability to defend the homeland against a limited long-range attack.

Defending the Homeland

The United States is currently protected against limited ICBM attacks. This is a result of investments made over the past decade in the ground-based midcourse defense (GMD) system. Because of continuing improvements in the GMD system and the number of interceptors now deployed compared to potential North Korean and Iranian long-range ballistic missile capabilities, the United States possesses a capability to counter the projected threat from North Korea and Iran. We will continue to reassess requirements based on updated threat projections and other factors.

We have deployed 30 Ground-Based Interceptors (GBIs) to defend the homeland. We are continuing our procurement of a total of 52 GBIs, including five in FY2012. Additional GBIs will be used for testing, stockpile reliability, and operational spares. We will conduct stockpile surveillance of GBIs by testing all limited life components as GBIs are refurbished and maintained until at least 2032.

We continue to upgrade and test the system to increase reliability and survivability and expand the ability to leverage new Ballistic Missile Defense System sensors. The President's FY2012 budget request will begin funding an In Flight Interceptor Communications System (IFICS) Data Terminal (IDT) on the East Coast and upgrades to the Early Warning Radars at Clear, Alaska, and Cape Cod, Massachusetts.

The Missile Defense Agency (MDA) is conducting a review of the most recent GBI test failure, and we will use the results of that review and future tests to ensure that our homeland defenses are as robust and reliable as possible. Data collected from future GMD flight tests, results from the aging surveillance program, and future intelligence estimates regarding the pace of North Korean and Iranian ICBM efforts will inform decisions regarding any need to procure additional GBIs.

The President's FY2012 budget request provides a substantial investment in the GMD element intended to ensure it remains viable over the long term, while implementing the efficiencies mandated by the Secretary of Defense. The requested funds will continue the procurement of 52 total GBIs, underwrite the GBI refurbishment and reliability sustainment programs to sustain the fleet to 2032, support a service life extension decision, upgrade GMD Fire Control ground system software, and support a test program to ensure the GMD system provides an effective and reliable capability to protect the nation. The FY2012 budget request

also supports developing and deploying new sensors, including a forward-based sensor in Europe, UAV-mounted infrared sensors, and a new space-based sensor, as well as continuing work on early-intercept kill systems to help defeat countermeasures, and enhancing the Command, Control, Battle Management and Communications system to handle larger raid sizes.

Because future missile threats cannot be fully predicted, the United States must be well hedged against the possibility of rapid threat developments or unexpected obstacles to U.S technological advances. The Department is in the process of developing and refining its hedging strategy, and will brief Congress on its results soon. We are developing various courses of action to respond to a range of scenarios, while evaluating what mix of capabilities or deployment timelines would be appropriate for each. Several hedging measures reflected in the current program are:

- Completing construction of Missile Field 2 at Ft. Greely in a 14-silo configuration to accommodate a contingency deployment of eight additional GBIs if needed;

- Mothballing the six GBI silos at Missile Field 1 at Ft. Greely instead of decommissioning them, allowing their return to service in the future if necessary; and

- Continuing with development and assessment of a two-stage Ground-Based Interceptor to preserve future deployment options.

To be clear, the United States currently has fielded a significant BMD capability to protect the United States against a limited, long-range ballistic missile attack and we are making improvements to that system to ensure its effectiveness. Our hedging strategy further improves our ability to guard against uncertainty in the years to come.

Defending against regional threats

Although the missile threat is developing at different rates in different regions, overall it is developing rapidly – both in quality and quantity. Today there are thousands of ballistic missiles and hundreds of launchers, with roughly 90 percent of those missiles having ranges less than 1,000 kilometers. Regional actors such as North Korea and Iran field short, medium, and/or intermediate range ballistic missiles that can threaten U.S. forces, allies, and partners in regions where the United States deploys forces and maintains security relationships. Our objective is to create an environment in which the development, acquisition, deployment, and use of ballistic missiles by regional adversaries can be deterred, and if necessary, defeated.

Implementing the Phased Adaptive Approach in Europe

Since the President's announcement of the European Phased Adaptive Approach (EPAA) in September 2009, the Administration has made substantial progress in implementation.

- We expect the deployment of an Aegis BMD-capable cruiser to the Mediterranean as part of the EPAA Phase 1 to occur this month.

- We are currently in discussions with potential host nations for the deployment of an AN/TPY-2 radar to southeastern Europe. While no decision has been made, we expect to meet our 2011 deployment timeline.

- Romania and Poland have agreed to host the deployment of land-based SM-3 interceptor sites planned for Phase 2 of EPAA in 2015 and Phase 3 in 2018, respectively.

- The Request for Proposals (RFP) for the concept development for the SM-3 Block IIB interceptor was issued in October 2010, and MDA will conduct SM-3 Block IIB concept and component technology development during the next three fiscal years.

As President Obama stated in his letter to the Senate in December 2010, the Administration plans to deploy all four phases of the EPAA. While advances of technology or future changes in the threat could modify the details or timing of the later phases of the EPAA – one reason this approach is called "adaptive" – we will take every action available to support the deployment of all four phases of the EPAA.

Considerable progress has also been achieved with NATO on ballistic missile defense, which has been a longstanding U.S. goal. This past November at the Lisbon Summit, NATO's leaders took the unprecedented step of deciding to pursue a missile defense capability to provide full coverage and protection for the Alliance's populations, territories, and forces in Europe against ballistic missile attacks. NATO also decided at Lisbon to expand its existing missile defense command and control backbone — the Active Layered Theater Ballistic Missile Defense — to encompass territorial missile defense, which will make current and future Alliance missile defense assets interoperable. These decisions send a strong signal that NATO will not allow itself to be defenseless against ballistic missile coercion or attack.

Implementing Phased Adaptive Approaches in East Asia and the Middle East

We are also working to implement the Phased Adaptive Approach to missile defense in East Asia and the Middle East. These approaches must be tailored to the specific threat and geographical characteristics of each region.

In Asia, the United States is making progress with a number of key allies, including Japan, Australia, and South Korea. Japan has acquired a layered missile defense system that includes Aegis BMD ships with SM-3 interceptors, PAC-3 fire units, early warning radars, and a command and control system. Japan hosts an AN/TPY-2, as well as U.S. Aegis BMD-capable ships. Both sides regularly train together and have successfully executed simulated cooperative

BMD operations. We are also engaged in cooperative development of the next generation SM-3 Block IIA interceptor, which will enter service in 2018.

Australia participates in our Trilateral Missile Defense Forum with Japan, and takes part in the recurring Nimble Titan missile defense exercise series hosted by U.S. Strategic Command (USSTRATCOM), which focuses on developing coalition missile defense policy options with U.S. allies and partners to create global deterrent and defensive effects. Australia is also acquiring ships which will be compatible with U.S. Aegis BMD capabilities, should they choose to pursue that capability. With South Korea we have engaged in bilateral missile defense cooperation discussions, and we will also discuss BMD cooperation as a topic in the recently established Extended Deterrence Policy Committee. We have also signed a Terms of Reference and Agreement with South Korea that will enable a BMD program analysis.

In the Middle East, we have a long-standing relationship with Israel on BMD. In addition to conducting major missile defense exercises over the last several years, the United States and Israel meet regularly and coordinate extensively on a range of missile defense issues. Our extensive support for Israeli missile defense programs includes the existing Arrow Weapon System and a new program for defeating short range ballistic missiles known as David's Sling, as well as cooperating on plans and operations.

The United States also maintains a robust mix of missile defense assets forward deployed to provide defense of our troops and facilities in the Persian Gulf region, as well as a series of bilateral missile defense agreements between the United States and nations belonging to the Gulf Cooperation Council (GCC). USCENTCOM continues to work on establishing regional integrated air and missile defense architectures for the GCC nations. In addition, the United States has recently approved the sale of Patriot systems to the UAE. We have also been working with Saudi Arabia to refurbish its Patriot systems and recertify the missiles.

Missile defense cooperation with Russia

Since I last testified before you in December, we have continued to pursue missile defense cooperation with Russia. Following strategic direction from President Obama, and operating under the auspices of the bilateral Defense Relations Working Group created by Secretary Gates and Defense Minister Serduykov, we held inaugural sub-working group sessions on missile defense cooperation in January 2011; the next meeting is planned for later this month.

As a starting point, U.S. and Russian technical experts will undertake a joint analysis to identify what aspects of missile defense cooperation will provide the most utility given our respective current and projected future capabilities. We believe that some Russian radars may be able to provide data that could improve the capabilities of U.S. and NATO missile defense systems.

As outlined in the NATO-Russia joint statement issued following the NATO-Russia summit last November, NATO and Russia agreed to resume theater missile defense cooperation and study ways in which we might cooperate on territorial missile defense in Europe. These are practical steps toward cooperation that could strengthen NATO's and Russia's ability to address the common threats posed by ballistic missile proliferation.

As President Obama stated, this cooperation can happen "even as we have made clear that the system we intend to pursue with Russia will not be a joint system, and it will not in any way limit United States' or NATO's missile defense capabilities." Our concept for missile defense cooperation stems from our conviction that NATO must be responsible for defense of NATO territory and Russia should be responsible for defense of Russian territory. We would operate our respective systems independently but cooperatively, including sharing of sensor data that may improve the ability of both systems to defeat missile attacks by regional actors such as Iran.

It is important to note that this process will take time. With the sustained attention and mutual intent to cooperate currently evident on both sides, I believe that meaningful cooperation is possible – cooperation that can strengthen the security of the United States and our NATO partners as well as Russia.

Managing the missile defense program

Ensuring realistic and rigorous missile defense testing prior to deployment is a priority for this Administration. The Missile Defense Agency maintains an Integrated Master Test Plan which sets out test activities over the full course of each system's development. Once fielded, MDA conducts additional assessments in conjunction with the operational test community. The Integrated Master Test Plan includes a comprehensive set of flight and ground tests to demonstrate system performance as well as validate models used to validate system effectiveness.

Last December, MDA's flight test of the Ground-based Midcourse Defense system failed to intercept its target in the longest range test ever attempted. We gained valuable knowledge in the performance of the system; a Failure Review Board is conducting a review of data collected during the test and will present its findings to the Director of Missile Defense Agency when completed.

The Missile Defense Executive Board (MDEB), chaired by the Under Secretary of Defense for Acquisition, Technology, and Logistics, Dr. Ash Carter, continues to provide oversight and guidance for the missile defense program. As the BMDR noted, adopting a cost-effective approach to BMD development involves taking decisive action on programs that do not meet cost, schedule, or performance goals. This Administration has demonstrated its commitment to developing cost-effective missile defenses with the decision to pursue Phased

Adaptive Approaches to regional missile defense, the termination of the Multiple Kill Vehicle program and the Kinetic Energy Interceptor program, the restructuring of the Airborne Laser program, and most recently, the decision to end the Medium Extended Air Defense System (MEADS) program following the design and development phase.

Space Policy and Posture

U.S. space capabilities allow our military to see with clarity, communicate with certainty, navigate with accuracy, and operate with assurance. Maintaining the benefits afforded to the United States by space is central to our national security, but the evolving strategic environment increasingly challenges U.S. space advantages. In particular, space is increasingly congested, contested, and competitive.

DoD currently tracks approximately 22,000 man-made objects in orbit. There are likely hundreds of thousands more objects less than 10 centimeters in diameter and too small to track, but these objects still pose a threat to satellites. We only expect the number of satellites on orbit to continue growing, resulting in greater congestion in the radio frequency spectrum and an increased risk of unintentional interference or collision.

A number of countries are developing counterspace capabilities, from widely available jamming technology to kinetic anti-satellite weapons. The threat to our space capabilities will continue to increase as these capabilities proliferate.

The United States space industrial base faces increasing competition from companies worldwide. More than 60 nations and government consortia currently operate satellites, and the United States share of worldwide satellite manufacturing has dropped from approximately 65 percent in 1997 to approximately 30 percent in 2008.

In response to this shifting environment, and to reinvigorate U.S. leadership in space, President Obama released a new National Space Policy on June 28, 2010. This policy declares that the United States considers the sustainability, stability, free access to, and use of space vital to its national interests. It also directs agencies to pursue policies and programs that strengthen the stability of activities in space, enhance international cooperation, increase assurance and resilience of mission-essential functions, and energize competitive domestic industries supporting activities in space.

Building on this direction, on February 3, 2011, DoD and the Intelligence Community delivered a National Security Space Strategy to Congress. This strategy is derived from the National Space Policy and charts a path to respond to the space strategic environment over the next decade. The strategy sets out objectives to strengthen safety, stability, and security in space; maintain and enhance the strategic national security advantages afforded to the United States by space; and energize the space industrial base that supports U.S. national security.

The National Security Space Strategy outlines five interrelated strategic approaches to chart a future course for national security in space.

Promoting responsible, peaceful and safe use of space

With increasing congestion in the space domain, efforts to develop and share situational awareness and best practices for space operations can help bring order to the congestion. For example, based on years of experience and analysis, the United States undertook a concerted effort to promote standard practices to mitigate space debris, a common threat to all space operators. That leadership resulted in guidelines endorsed by the United Nations.

The United States is currently evaluating the European Union's proposed international Code of Conduct for Outer Space Activities as a potentially useful set of guidelines for safe activity in space. The Department of Defense is also pursuing opportunities to expand sharing of space situational awareness data to increase transparency and cooperation in the domain. USSTRATCOM has entered into agreements with 19 companies, including both launch providers and satellite owners and operators, to improve spaceflight safety. Sharing data to enhance transparency and to improve situational awareness can reduce the risk of catastrophic mishaps which could pollute the domain for generations.

Finally, pursuing transparency and confidence building measures and promoting the responsible use of outer space will enhance the security of the United States by singling out those rogue actors who seek to interfere with U.S. and allied space activities and disrupt peaceful uses of outer space. As a concrete step towards transparency, the Department recently revised our pre-launch notification policy to include space launch vehicles in addition to ballistic missile launches, a step that will decrease the risk of misunderstanding and miscalculation by other nations.

Providing improved U.S. space capabilities

Maintaining U.S. leadership requires improving our own acquisition processes and energizing the space industrial base to stay at the forefront of professional development and technological innovation. In recognition of this fact, the Department of Defense has revalidated the role of the Secretary of the Air Force as the Executive Agent for Space, who is responsible for integrating and assessing the numerous DoD space programs, as well as facilitating cooperation between the Department and the Intelligence Community.

The Department also recognizes that reforming U.S. space export controls is essential to energizing the space industrial base. As you know, Secretary Gates has been at the forefront of calls for an overhaul of our export control system. In order to make our firms more competitive while protecting our most sensitive capabilities, we need to build "higher fences" around the most sensitive technologies while de-listing capabilities already widely available to the world-at-

large. A comprehensive review of space-related items on the United States Munitions List is now underway.

Providing improved capabilities will also require innovative acquisition efforts. Examples include considering hosting national security payloads on commercial spacecraft, as well as pursuing non-traditional procurement strategies. The President's DoD FY2012 budget request allocates $1,760 million to Evolved Expendable Launch Vehicles (EELV), which will be used in part for a block buy, to help assure access to space while supporting our industrial base.

The Department will also continue to develop current and future national security space professionals, recognizing that people are our greatest asset.

Partnering with responsible nations, international organizations, and the commercial sector

With over sixty nations and government consortia currently operating satellites, opportunities for partnerships are on the rise. These partnerships can augment and add resilience to our space systems, allowing the United States military to continue operations during crises and attacks. Wideband Global SATCOM is a good example. Australia has joined the constellation and other potential partners are looking at doing the same.

The Department is also exploring operating with partners by transforming the Joint Space Operations Center at Vandenberg Air Force Base, California into a Combined Space Operations Center operated with international partners. A Combined Space Operations Center will allow our allies to work side-by-side with U.S. commanders, integrating a multilateral approach to space into our day-to-day operations.

Consistent with guidance in the President's National Space Policy, DoD is working with the Department of State to establish space security dialogues with key allies, partners, and independent but emerging space-faring nations. The United States is also seeking to include space in future strategic dialogues with China. These forums provide an opportunity for a constructive and pragmatic dialogue and cooperation on space-related issues of common concern.

DoD will also seek to improve our partnerships with the commercial space sector. Such partnerships enhance national security capabilities by providing opportunities to host national security payloads on commercial spacecraft or by offering innovative opportunities to buy or lease capabilities on-orbit. In an era of limited resources, the DoD will develop space systems only when there are no suitable, cost-effective commercial alternatives or when national security needs dictate. We will also actively promote the sale of capabilities developed by U.S. companies to partner nations. Such capabilities could then be integrated into existing U.S. architectures and networks through arrangements that enhance and diversify U.S. capabilities.

Preventing and deterring aggression against space infrastructure

The United States is pursuing a multi-layered approach to prevent and deter aggression against U.S. and allied space systems that support our national security. We will encourage restraint by potential adversaries by advancing international norms of responsible behavior that strengthen stability in space. We will also develop resilient and distributed architectures that can operate through interference, while preserving the capabilities needed, if deterrence fails, to defeat attacks on U.S. and allied space systems.

Improving space situational awareness is central to our ability to deter aggression by decreasing the risk that an adversary's action could occur without warning or attribution. We are working with the Director of National Intelligence to improve our intelligence posture – predictive awareness, characterization, warning, and attribution – to improve our understanding of activities in the space domain. When combined with efforts to adopt approaches for responsible behavior, such transparency will facilitate the quick identification of actions that are inimical to U.S. and allied interests.

Preparing to defeat attacks and to operate in a degraded environment

To counter threats to U.S. space assets, the United States is preparing to defeat attacks and to operate if necessary in a degraded space environment. Developing resilient architectures and cross-domain alternatives for providing critical capabilities to our warfighters will be critical to this effort. The Department is also developing exercises and training to ensure our ability to access the requisite capabilities and information, from space or through cross-domain solutions, in the event of interference with space capabilities.

Finally, the United States is developing a range of capabilities, plans, and options to deter, defend against, and, if necessary, defeat efforts to interfere with or attack U.S. or allied space systems; such options could include necessary and proportional responses outside of the space domain.

Cyberspace Policy and Posture

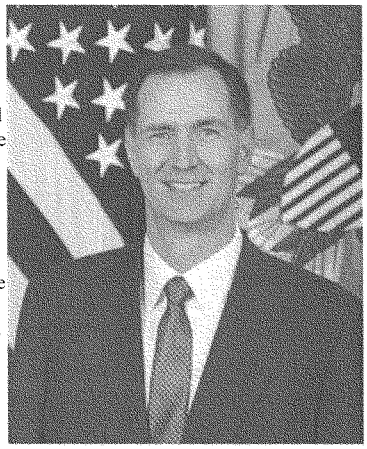
Operating effectively in cyberspace is a DoD imperative. The Department recognizes that developing and enabling the full spectrum of capabilities in cyberspace, including improved cybersecurity, is required to assure the ability to conduct DoD missions, including projecting power abroad. Following the Administration's initial strategy review of cyberspace, the Department has taken a number of steps to improve our posture. I look forward to discussing these critical issues when I provide testimony on this subject alongside General Keith Alexander, Commander, U.S. Cyber Command, to the House Armed Services Committee on March 16th.

Conclusion

Reducing strategic risks to the United States and sustaining key U.S. strategic capabilities are long-term challenges that will require support from a succession of U.S. Administrations and Congresses. Success will require developing and sustaining bipartisan consensus on key issues. I am pleased to have the opportunity to continue that engagement today, and look forward to your questions.

Dr. James N. Miller

Principal Deputy Under Secretary of Defense for Policy



Dr. James N. Miller was confirmed by the U.S. Senate as the Principal Deputy Under Secretary of Defense for Policy on April 2, 2009. He serves as the principal staff assistant to the Under Secretary of Defense for Policy and provides advice and assistance to the Secretary of Defense and Deputy Secretary of Defense on all matters concerning the formulation of national security and defense policy and the integration and oversight of DoD policy and plans to achieve national security objectives.

Prior to his confirmation, Dr. Miller served as Senior Vice President and Director of Studies at the Center for a New American Security. Previous positions include serving as Senior Vice President (2003-2007) and Vice President (2000-2003) at Hicks and Associates, Inc.; Deputy Assistant Secretary of Defense for Requirements, Plans, and Counterproliferation Policy (1997-2000); assistant professor at Duke University (1992-1997); and senior professional staff member for the House Armed Services Committee (1988-1992).

A member of the International Institute for Strategic Studies, Dr. Miller has served as an advisor to the Combating WMD Panel of DoD's Threat Reduction Advisory Committee and the Defense Science Board, as senior associate at the Center for Strategic and International Studies, and as senior associate member at St. Antony's College, Oxford. In 2000 he received the Department of Defense Medal for Outstanding Public Service.

Dr. Miller received a B.A. degree with honors in economics from Stanford University, and Master's and Ph.D. degrees in public policy from the John F. Kennedy School of Government at Harvard University.

Statement of William J. Perry
Before the
House Armed Services Subcommittee on Strategic Forces
Hearing on "Strategic Posture of the United States"
Washington, DC, March 2, 2011
3:30 PM – 2118 Rayburn House Office Building

Introduction

Chairman Turner, Ranking Member Sanchez, and Members of the House Armed Services Subcommittee on Strategic Forces, I am here today at your invitation to discuss the findings and results of the work of the Congressional Commission on the Strategic Posture of the United States.

In 2009, Congress appointed our 12-person bipartisan group to conduct this review of U.S. strategic posture, and asked me to serve as Chairman with Jim Schlesinger as Vice-Chairman. This Commission deliberated for nearly a year and in 2009 reported our findings to the Administration, to the Congress, and to the American people. Today I appear to discuss those findings with today's Congress. I have reviewed my testimony from 2009, and find that I substantially agree with what I said then, so this written testimony differs from what I presented in 2009 only in bringing it up-to-date with events that have transpired since then.

The Commission greatly benefited from the input of a number of members of Congress, outside groups, and individuals of every stripe that care deeply about these issues and their country. Likewise, we were enriched in our understanding of these issues by the thoughtful perspectives and advice of nations that are U.S. allies, friends, or fellow nuclear powers. We received unstinting assistance from the Executive Branch, which has been individually and collectively supportive of the Commission. The United States Institute of Peace, its employees, and contractors provided outstanding support to the Commission, and I thank them again. I also want to make special mention of and praise the members of our five Expert Working Groups and their leaders, who volunteered countless hours of their time in supporting the Commission and its work and provided us with strong intellectual assistance of the highest caliber.

While each Commissioner, including myself, would have written a report that would be worded somewhat differently than our final report, it is most significant that with the exception of parts of the chapter on the Comprehensive Test Ban Treaty (CTBT), this is a consensus document. And even with CTBT, while we could not agree on common language overall, we did agree on recommendations that would prepare the way for Senate reconsideration of the Treaty. We strove to ensure that the essence of our disagreement was presented as clearly and succinctly as possible so that interested individuals and groups can review the arguments, weigh them carefully, and reach their own conclusions.

At the beginning of the Commission's work, I did not imagine that such an ideologically disparate group of senior experts would find so much common ground. And the trail we followed to arrive at this document was not always easy for us, logistically, intellectually, or emotionally. But the seriousness of the issues, and the stakes involved for America and the world, called forth the "better angels" in all of us Commissioners, resulting in a largely consensus document. We hope that the Executive Branch and Congress will also face these national critical security policy issues in a similar nonpartisan spirit.

Background

In conducting its work, the Commission adopted a broad definition of strategic posture. We defined the scope of our work to include all dimensions of nuclear weapons, including the key infrastructures that support them, and all the major tools to counter the nuclear threat to the United States and its allies, including arms control, missile defense, and countering nuclear proliferation. But we also defined some limits to our inquiry. For example, we chose not to expand our scope of work to address issues associated with all weapons of mass destruction, though we did address the question of whether and how nuclear weapons have a role in deterring attacks with biological weapons. Neither did we examine threats such as cyber attacks and space conflict, though this does not mean we consider them unimportant. I believe that cyber attacks, in particular, merit serious examination in the near future. Also, our pre-eminent conventional military capabilities are themselves a major strategic force, but we understood Congress was not seeking our advice on these matters.

Commission Findings

When one considers the destructive power of the nuclear weapons within our strategic posture, which generated important disagreements throughout the Cold War and after, it is not surprising that the American nuclear posture has been, and will continue to be, highly controversial on key issues. What was surprising is the extent to which our commission did reach agreement on numerous issues related to our deterrent capabilities, nonproliferation initiatives, and arms control strategies, which I believe are the three key components of U.S. strategic posture in the years ahead. The Commission agreed that the nation must continue to safeguard itself by maintaining a nuclear deterrent appropriate to existing threats until such time as verifiable international agreements are in place that could set the conditions for the final abolition of nuclear weapons. That is, we seek to safeguard our security by supporting military and intelligence programs that maintain our deterrence force. At the same time, we also seek to safeguard our security by supporting largely non-military programs that prevent the proliferation of nuclear weapons to other states, that reduce the number of nuclear weapons worldwide, and that provide better protection for the residual nuclear forces and fissile material. Both approaches are necessary for America's future; each can and should reinforce the other; and neither by itself is sufficient as long as nuclear weapons still exist in the world.

Nuclear weapons served to safeguard our security for decades during the Cold War by deterring an attack on the U.S. and its allies. We will need them to continue to perform

this deterrence role as long as others possess them as well. On the other hand, if nuclear weapons were to fall into the hands of a terror organization, they could pose an extremely serious threat to our security, and one for which traditional forms of deterrence would not be applicable, given the terrorist mindset. We must be mindful that Al Qaeda, for example, has declared that obtaining a nuclear weapon is a "holy duty" for its members. Preventing nuclear terrorism is closely tied to stopping the proliferation of nuclear weapons, and recent developments in North Korea and Iran suggest that we may be at or near a tipping point in nuclear proliferation. (The urgency of stopping proliferation is articulated compellingly in the recent WMD Commission report: "World at Risk.")

While the programs that maintain our deterrence force are national, the programs that prevent proliferation and safeguard nuclear weapons and fissile material are both national and international. Indeed, it is clear that we cannot meet our goal of reducing the proliferation threat without substantial international cooperation. We cannot "go it alone" on this crucial security issue, nor need we, given that the nations whose cooperation is most critical are at risk from nuclear proliferation as much as we. But the international programs that are most effective in containing and rolling back proliferation can sometimes be in conflict with the national programs designed to maintain deterrence. Thus a strategic posture for the U.S. that meets both of these security requirements will necessarily have to make some tradeoffs between these two important security goals when they are in conflict. Some commissioners give a priority to dealing with one threat while others give a priority to dealing with the other threat. But throughout the deliberations of the commission, there was unswerving member loyalty to the importance of assuring U.S. security in the years ahead, and all of our members sought to strike a balance that supports, to reasonable levels, both of these security needs. To a large extent, I am pleased to say, we were able to meet that objective.

The need to strike such a balance has been with us at least since the ending of the Cold War. President Clinton's policy on nuclear posture spoke of the need to "lead but hedge." That policy called for the U.S. to lead the world in mutual nuclear arms reductions and to lead in programs to prevent the proliferation of nuclear weapons, while at the same time maintaining a nuclear deterrent force that hedged against adverse geopolitical developments. The leadership aspect of this policy was demonstrated most vividly by a cooperative program with Russia, established under the Nunn-Lugar Program that dismantled about 4,000 former Soviet nuclear weapons and assisted Ukraine, Belarus and Kazakhstan in removing all of their nuclear weapons, a signal contribution to a safer world. U.S. leadership has also been demonstrated by the Comprehensive Test Ban Treaty, (signed during the Clinton administration but not ratified), the Moscow Treaty (ratified and entered into force during the Bush administration), and New START (ratified and entered into force during the Obama administration).

President Obama's Nuclear Posture Review has moved this strategy forward by expressing a strong commitment to maintain a U.S. nuclear deterrent that is safe, secure, and reliable, while at the same time working towards the goal of ultimately eliminating all nuclear weapons. This is, in a sense, the most recent formulation of the "lead but

hedge" policy. The Commission believes that reaching the ultimate goal of global nuclear elimination would require a fundamental change in the world geopolitical order, something that none of us believe is imminent. Senator Sam Nunn, former chairman of the Senate Armed Services Committee, who has espoused the vision of nuclear elimination, has described this vision as the "top of the mountain," which cannot be seen at this time, and the exact path to which is not yet clear. But he argues that we should be heading up the mountain to a "base camp" that would be safer than where we are today, and from which the path to the mountaintop becomes clearer. When we reach the base camp, it would:

- Provide for U.S. nuclear forces that are safe, secure, and can reliably deter attacks against the U.S. and our allies;
- Be headed in the direction of the global elimination of nuclear weapons; and
- Be stable -- that is, it should be sustainable even under typical fluctuations in geopolitical conditions.

Senator Nunn and I both believe that getting the international political support to move to this "base camp" requires the United States to affirm the vision of global elimination of nuclear weapons, but this was not a position taken by the Commission. This base camp concept serves as an organizing principle for my own thinking about our strategic posture, since it allows the United States to both lead in the struggle to reduce and ultimately eliminate the nuclear danger; and hedge against a reversal in this struggle, providing an important safety net for U.S. security. While some of the commissioners do not accept this view of the base camp as an organizing principle, all commissioners accept the view that the U.S. must support programs that both lead and hedge; that is, programs that move in two parallel paths – one path which protects our security by maintaining deterrence, and the other which protects our security by reducing the danger of nuclear weapons.

The first path, "Deterrence," would include the following components:

- Clarify our policy on use of nuclear weapons to include a statement that our nuclear forces are intended to deter an attack against the U.S. or its allies (extending this security guarantee to our allies is often referred to as "extended deterrence") and would be used only as a defensive last resort; at the same time, our policy would reaffirm the security assurances we have made to non-nuclear states that signed the Non-Proliferation Treaty (NPT).

- Back up our deterrent and extended deterrent policy by assuring that our nuclear forces – including the weapons themselves, their delivery platforms, and the surveillance, detection, and command/control/communications/ intelligence infrastructures that support them and the National Command Authority – are safe, secure, and reliable, and in sufficient quantities to perform their deterrent tasks;

- Maintain the safety, security, reliability, and effectiveness of our nuclear weapons stockpile by an enhanced nuclear weapons Life Extension Program as long as it is

feasible; but ensure the nuclear weapons laboratories maintain their capability to design a new weapon should that ever become necessary;

- Provide robust support for the Stockpile Stewardship Program, DOE's highly successful program to ensure the safety, security, and reliability of the nation's nuclear stockpile without testing. This program seeks a comprehensive, science-based understanding of nuclear weapon systems, and entails pushing the frontiers of computing and simulation along with ensuring robust laboratory experimental capabilities. The weapons labs have achieved remarkable success with stockpile stewardship since it was instituted a decade and a half ago.

- Maintain all three weapon laboratories with programs that fully support the nuclear weapons programs and maintain their scientific and design vitality. Besides weapons programs, their program mix should include fundamental research and energy technologies as well as an expanded national security role, which will benefit other dimensions of the security challenges we face.

- Transform our weapons production capability by reducing and modernizing it, giving first priority to the Los Alamos plutonium facility, followed by the Y-12 site Uranium Processing Facility site after the plutonium facilities are under construction. The goal would be to have a capability to produce small numbers of nuclear weapons as needed to maintain nuclear stockpile reliability. (The Administration's requested FY 2011 budget provides funding for both of these actions.)

- Provide proven strategic missile defenses sufficient to limit damage from and defend against a limited nuclear threat such as posed by North Korea or Iran. The defenses should be effective enough so that such countries could not believe that a missile attack by them would succeed. But the defenses should not be so numerous or capable as to stimulate Russia or China to take countering actions, increasing the nuclear threat to the U.S., its allies, and friends, therefore undermining efforts to reduce nuclear numbers and, consequently, nuclear dangers.

- Reprogram funding to initiate F-35 fighter aircraft contractor participation with NNSA to assure that the U.S. would maintain current capabilities available to support U.S. allies.

The administration's Nuclear Posture Review, which was issued after our report was submitted, supports all of those components and calls for the funding necessary to achieve them. The Commission recognizes the tension between modernization and nonproliferation. But so long as modernization proceeds within the framework of existing U.S. policy, it should minimize political difficulties. As a matter of policy, the United States does not produce fissile materials and does not conduct nuclear explosive tests, and does not currently seek new weapons with new military characteristics. Within this framework, the United States should seek all of the possible benefits of improved safety, security, and reliability.

The second path, "Reducing the Danger," includes the following components:

- Re-energize efforts to reverse the nuclear proliferation of North Korea and prevent the nuclear proliferation of Iran. Seek global cooperation to deal with other potential proliferation concerns arising from the anticipated global expansion of civilian nuclear power.

- Negotiate arms reduction treaties with Russia that make significant reductions in the nuclear stockpiles of Russia and the United States. The treaties should include verification procedures and should entail real reductions, not just a transfer of weapons from deployed to reserve forces. The first treaty could decrease deployed strategic warheads to numbers lower than the lower SORT limit (Moscow Treaty of 2002), but the actual numbers are probably less important than the "counting and attribution rules" of preceding agreements. New START, ratified by the Senate in December, meets all of these requirements. Follow-on treaties should seek deeper reductions, which would require finding ways to deal with difficult problems such as addressing "tactical" nuclear forces, reserve weapons and engaging other nuclear powers.

- Seek a deeper strategic dialogue with Russia that is broader than nuclear treaties, to include civilian nuclear energy, ballistic missile defenses, space systems, nuclear nonproliferation steps, and ways of improving warning systems and increasing decision time.

- Renew and strengthen strategic dialogue with a broad set of states interested in strategic stability, including not just Russia and our NATO allies but also China and U.S. allies and friends in Asia.

- Augment funding for threat reduction activities that strengthen controls at vulnerable nuclear sites. The surest way to prevent nuclear terrorism is to deny terrorist acquisitions of nuclear weapons or fissile materials. An accelerated campaign to close or secure the world's most vulnerable nuclear sites as quickly as possible should be a top national priority. This would build on and expand the important foundation of work begun under the Nunn-Lugar Cooperative Threat Reduction Program. Commit to the investment necessary to remove or secure all fissile material at vulnerable sites worldwide in four years. This relatively small investment could dramatically decrease the prospects of terrorist nuclear acquisition. The Nuclear Summit, held last April, sought to get the cooperation of other nations in safeguarding nuclear sites around the world.

- Seek Senate ratification of the Comprehensive Test Ban Treaty and encourage other hold-outs to do likewise. I strongly support Senate ratification of the CTBT, but I want to be clear that my view is not shared by all commissioners. I believe that the Stockpile Stewardship Program, established as a safeguard when the U.S. signed the CTBT, has been an outstanding success and has given us the needed confidence in the reliability of our stockpile without nuclear explosive testing. The United States has refrained from testing nuclear weapons for 17 years already and has no plans to

resume such testing in the future. Prior to seeking ratification, the Administration should obtain an explicit understanding with the P-5 states as to what tests are permitted by the treaty, and conduct a careful analysis of the issues that prevented ratification a decade ago. (All commissioners agree that these preceding steps should be taken, but not all commissioners support ratifying the CTBT.)

- While the Senate has the responsibility for considering the CTBT for ratification, both the Senate and the House should support funding for any Treaty safeguards the Obama Administration may propose, which will be essential to the ratification process.
- Prepare carefully for the NPT review conference in 2010. (The review conference has already been held).
- Seek an international Fissile Material Cutoff Treaty, as President Obama has called for, that includes verification procedures, and redouble domestic and international efforts to secure all stocks of fissile material, steps that would discourage both nuclear proliferation and nuclear terrorism.
- Seek to strengthen the International Atomic Energy Agency (IAEA) in its task to prevent the proliferation of nuclear weapons to other nations and control access to fissile material. In particular, work with the IAEA to promote universal adoption of the Additional Protocol to the NPT, which would allow extra inspections of suspected nuclear facilities as well as declared facilities.
- Develop and pursue options for advancing U.S. interests in stability in outer space and in increasing warning and decision-time. The options could include the possibility of negotiated measures.
- Renew the practice and spirit of executive-legislative dialogue on nuclear strategy that helped pave the way for bipartisanship and continuity in policy in past years. To this end, we urge the Senate to consider reviving the Arms Control Observer Group, which served the country well in the past.

Concluding Remarks

In surveying six-plus decades of nuclear history, the Commission notes that nuclear weapons have not been used since 1945. It is clear that a tradition against the use of nuclear weapons has taken hold, which we must strive to maintain, and urge all nuclear-armed nations to adhere to it.

I see our present time as a moment of opportunity but also of urgency. The opportunity arises because the Russian government has indicated a readiness to undertake a serious dialogue with the U.S. on strategic issues. The urgency arises because of the imminent danger of nuclear terrorism if we pass a tipping point in nuclear proliferation. The commissioners agreed on what direction they wanted the world to take. They rejected the vision of a future world defined by a collapse of the nonproliferation regime, a cascade of nuclear proliferation to new states, a resulting dramatic rise in the risks of nuclear terrorism, and renewed fruitless competition for nuclear advantage among major powers.

The commissioners, as pragmatic experts, embraced a different vision. They saw a world where the occasional nonproliferation failure is counter-balanced by the occasional rollback of some and continued restraint by the many. They saw a world in which nuclear terrorism risks are steadily reduced through stronger cooperative measures to control terrorist access to materials, technology, and expertise. And they saw a world of cooperation among the major powers that ensures strategic stability and order, and steadily diminishes reliance on nuclear weapons to preserve world peace, not as a favor to others, but because it is in the best interests of the United States, and the world. I believe that implementing the strategy our report recommended will help the United States lead the global effort to give fruitful birth to this new world.

William Perry is the Michael and Barbara Berberian Professor (emeritus) at Stanford University. He is a senior fellow at FSI and serves as co-director of the Nuclear Risk Reduction initiative and the Preventive Defense Project. He is an expert in U.S. foreign policy, national security and arms control. He was the co-director of CISAC from 1988 to 1993, during which time he was also a professor (half time) at Stanford. He was a part-time lecturer in the Department of Mathematics at Santa Clara University from 1971 to 1977.

Perry was the 19th secretary of defense for the United States, serving from February 1994 to January 1997. He previously served as deputy secretary of defense (1993-1994) and as under secretary of defense for research and engineering (1977-1981). Dr. Perry currently serves on the Defense Policy Board (DPB) and the Secretary of Energy Advisory Board (SEAB). He is on the board of directors of Covant, Fabrinet, LGS Bell Labs Innovations and several emerging high-tech companies. His previous business experience includes serving as a laboratory director for General Telephone and Electronics (1954-1964); founder and president of ESL Inc. (1964-1977); executive vice-president of Hambrecht & Quist Inc. (1981-1985); and founder and chairman of Technology Strategies & Alliances (1985-1993). He is a member of the National Academy of Engineering and a fellow of the American Academy of Arts and Sciences.

From 1946 to 1947, Perry was an enlisted man in the Army Corps of Engineers, and served in the Army of Occupation in Japan. He joined the Reserve Officer Training Corps in 1948 and was a second lieutenant in the Army Reserves from 1950 to 1955. He was awarded the Presidential Medal of Freedom in 1997 and the Knight Commander of the British Empire in 1998. Perry has received a number of other awards including the Department of Defense Distinguished Service Medal (1980 and 1981), and Outstanding Civilian Service Medals from the Army (1962 and 1997), the Air Force (1997), the Navy (1997), the Defense Intelligence Agency (1977 and 1997), NASA (1981) and the Coast Guard (1997). He received the American Electronic Association's Medal of Achievement (1980), the Eisenhower Award (1996), the Marshall Award (1997), the Forrestal Medal (1994), and the Henry Stimson Medal (1994). The National Academy of Engineering selected him for the Arthur Bueche Medal in 1996. He has received awards from the enlisted personnel of the Army, Navy, and the Air Force. He has received decorations from the governments of Albania, Bahrain, France, Germany, Hungary, Japan, Korea, Poland, Slovenia, and Ukraine. He received a BS and MS from Stanford University and a PhD from Pennsylvania State University, all in mathematics.

DISCLOSURE FORM FOR WITNESSES
CONCERNING FEDERAL CONTRACT AND GRANT INFORMATION

INSTRUCTION TO WITNESSES: Rule 11, clause 2(g)(5), of the Rules of the U.S. House of Representatives for the 112th Congress requires nongovernmental witnesses appearing before House committees to include in their written statements a curriculum vitae and a disclosure of the amount and source of any federal contracts or grants (including subcontracts and subgrants) received during the current and two previous fiscal years either by the witness or by an entity represented by the witness. This form is intended to assist witnesses appearing before the House Armed Services Committee in complying with the House rule. Please note that a copy of these statements, with appropriate redactions to protect the witness's personal privacy (including home address and phone number) will be made publicly available in electronic form not later than one day after the witness's appearance before the committee.

Witness name: WILLIAM J. PERRY

Capacity in which appearing: (check one)

(•) Individual

( ) Representative

If appearing in a representative capacity, name of the company, association or other entity being represented:

FISCAL YEAR 2011

federal grant(s) / contracts	federal agency	dollar value	subject(s) of contract or grant
N/A			
RESIGNED			
LANS/LLNL			
LANL BOARDS			
ON 10/8/10			

FISCAL YEAR 2010

federal grant(s) / contracts	federal agency	dollar value	subject(s) of contract or grant
LANL/LLNS	DEPT. OF ENERGY	$22,500.00	QUARTERLY CONSULTANT
			FEE
LANS/LLNS, LLC	DEPT OF ENERGY	$5,000.00	BOARD OF GOVERNORS
			FEE

FISCAL YEAR 2009

Federal grant(s) / contracts	federal agency	dollar value	subject(s) of contract or grant
LANL/LLNS	DEPT. OF ENERGY	$60,000.00	QUARTERLY CONSULTATION FEE
LANS/LLNS, LLC	DEPT. OF ENERGY	$10,000.00	BOARD OF GOVERNORS FEE

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Current fiscal year (2011): N/A;
Fiscal year 2010:_____;
Fiscal year 2009:_____.

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Fiscal year 2010:_____;
Fiscal year 2009:_____.

List of subjects of federal contract(s) (for example, ship construction, aircraft parts manufacturing, software design, force structure consultant, architecture & engineering services, etc.):

Current fiscal year (2011): N/A;
Fiscal year 2010:_____;
Fiscal year 2009:_____.

Aggregate dollar value of federal contracts held:

Current fiscal year (2011): N/A;
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Fiscal year 2010: _____;
Fiscal year 2009: _____.

United States House of Representatives
House Armed Services Subcommittee on Strategic Forces

Assessment of the Strategic Posture of the United States: Challenges and Opportunities

March 2, 2011

Testimony Prepared By:

Dr. Keith B. Payne
Professor and Head, Graduate Department of Defense and Strategic Studies
Missouri State University
Commissioner, Congressional Strategic Posture Commission

Rayburn House Office Building
Room 2212

PREPARED REMARKS

Assessment of the Strategic Posture of the United States: Challenges and Opportunities

Testimony Prepared By:

Dr. Keith B. Payne
Professor and Head, Graduate Department of Defense and Strategic Studies
Missouri State University
Commissioner, Congressional Strategic Posture Commission

The bipartisan Congressional Strategic Posture Commission offered numerous recommendations to reduce what we called "the nuclear danger."

Commission Recommendations

For example, to reduce the nuclear danger, the Commission recommended a conscious effort to balance diplomatic measures to reduce the number of nuclear weapons with the measures necessary to deter attacks and to assure allies of their security. Despite the occasional friction between US diplomatic and deterrence efforts, Republican and Democratic administrations for five decades have sought such a balance.

The Commission also emphasized that the US must maintain a viable nuclear arsenal for the indefinite future to support deterrence and assurance.[1]

The Commission did not try to identify "the" minimum number of nuclear weapons necessary for deterrence and assurance.[2] This omission was in recognition of the fact that these force requirements can change rapidly because they are driven by many fluid factors.[3]

Rather than selecting an inherently transient "right" number of nuclear weapons, the Commission highlighted the need for a flexible and resilient force posture to support deterrence and assurance across a fluid and shifting landscape of threats and contexts.[4]

We noted in particular that the importance of flexibility and resilience in the force posture will increase as US forces decline in numbers.[5]

This emphasis on the need for flexibility and resilience is the primary reason the Commission recommended that the Administration maintain the strategic Triad of bombers, ICBMs and sea-based missiles.[6]

Finally, in recognition of the fact that deterrence may prove unreliable, the Commission also concluded that the United States must design its strategic forces not only for deterrence, but also to help defend against an attack if deterrence fails.[7]

This defensive goal includes the requirement for missile defense against regional aggressors and limited long-range missile threats.[8] We specifically urged that US defenses against long-range missiles "become capable against more complex, limited threats as they mature."[9]

Challenges for the US Force Posture

1. **Nuclear Reductions as the Policy Priority**

In light of these Commission recommendations, my foremost concern is that US nuclear policy appears to be departing from a balance between diplomatic and deterrence measures to reduce the nuclear danger. Specifically, the goal of nuclear reductions appears to have been given precedence and the resultant imbalance could undermine our future capabilities to deter, assure and defend.

What is the basis for my concern?

The 2010 *Nuclear Posture Review* (NPR), a highly-commendable report in many respects, "*for the first time*" places "*atop the U.S. nuclear agenda*" international non-proliferation efforts "*as a critical element of our effort to move toward a world free of nuclear weapons.*"[10] This prioritization appears self-consciously to depart from the carefully balanced dual tracks of the past 50 years.

Administration assurances that the US will maintain an effective nuclear deterrent certainly are welcome. But, at the end of the day, if the top US policy priority is international non-

proliferation efforts and movement toward nuclear zero, there will be unavoidable trade-offs made at the expense of the US forces important for deterrence, assurance and defense.

2. Reducing the Flexibility and Resilience of the Force Posture

This is not an academic concern over a few policy words: the Administration links qualitative limits and numeric reductions in US nuclear forces to progress in non-proliferation and movement toward nuclear zero.

Qualitative limitations and further reductions in our forces, however, can reduce their flexibility and resilience, undermining our national goals of deterrence and assurance. This is the trade-off that continues to need careful balance.

The Commission specifically cautioned against pursuing nuclear reductions at the expense of the resilience of our forces, in part because policies that undermine credible deterrence and assurance could actually provoke nuclear proliferation, not prevent it.[11] For example, Japanese concerns regarding US credibility reportedly have led the Governor of Tokyo to argue that Japan should look to its own independent nuclear deterrent.[12]

3. The Future of US Strategic Defensive Capabilities

US defensive programs may also be undermined by the Administration's self-described nuclear policy agenda. Russian officials and some American commentators now claim that qualitative and quantitative restraints on US strategic defenses are necessary for any further negotiated nuclear reductions.[13]

With international non-proliferation efforts and movement toward nuclear zero at the top of the US nuclear agenda, the pursuit of nuclear reductions at the expense of US missile defenses could ultimately be deemed an acceptable trade-off. That certainly is the Russian demand.

4. Minimum Deterrence as the Basis for Force Sizing

My final related concern is the possibility that new policy guidance could attempt to drive deep reductions in US nuclear forces by redefining deterrence in minimalist terms, thereby lowering the US force requirements deemed adequate for deterrence.

For over five decades, Republican and Democratic administrations have consistently rejected minimum deterrence as inadequate and dangerous.

Yet, many proponents of Nuclear Zero now again advocate new presidential guidance that adopts minimum deterrence as the way to justify deep reductions in US nuclear forces.[14] Adopting a minimum definition of deterrence may help to justify the elimination of the Triad and US nuclear reductions down to 500 deployed weapons,[15] but it would do so at the expense of the flexibility and resilience of our forces for deterrence and assurance.

Again, the Commission specifically cautioned against nuclear reductions at the expense of flexibility and resilience, and emphasized that new presidential guidance should "be informed by assessments of what is needed" for deterrence and assurance.[16] Any new guidance that adopts minimum deterrence could easily increase the nuclear danger by undermining credible US deterrence and by pushing friends and allies toward nuclear proliferation.

Summary and Conclusion

In summary, I am concerned about the apparent imbalance in the Administration's announced "nuclear agenda" and the possibility that new policy guidance may adopt long-rejected minimum deterrence standards as a route to deep nuclear reductions. The Commission's unanimous recommendations for: 1) a balance in US priorities; 2) the maintenance of a flexible and resilient strategic force posture; and, 3) improving US defensive capabilities against missile threats of all ranges, remain useful and pertinent.

Thank you.

[1] William J. Perry, James R. Schlesinger, et al., *America's Strategic Posture* (Washington, D.C.: United States Institute of Peace Press, 2009), p. 17. Hereafter, *America's Strategic Posture*.

[2] *America's Strategic Posture*, p. 23.

[3] *America's Strategic Posture*, pp. 23-24.

[4] *America's Strategic Posture*, pp. 22-23, 29.

[5] *America's Strategic Posture*, p. 26.

[6] *America's Strategic Posture*, pp. 25-26, 29.

[7] *America's Strategic Posture*, p. 23.

[8] *America's Strategic Posture*, p. 31.

[9] *America's Strategic Posture*, pp. 31-33.

[10] Department of Defense, *Nuclear Posture Review Report*, April, 2009, p. vi (italics added); see also p. iv.

[11] *America's Strategic Posture*, pp. 29, 67, 94.

[12] See Julian Ryall, "Japan Should Develop Nuclear Weapons to Defend Itself," February 4, 2011, at www.telegraph.co.uk/news/worldnews/asia/japan/8303366/Japan-should-develop-nuclear-weapons-to-defend-otself.html.

[13] See, for example, the statement by Russian Foreign Minister Sergei Lavrov in, "RF Keeps Right to Withdraw From START if US ABM Creates Risks," *ITAR-TASS*, May 19, 2010. See also, Dmitriy Rogozin, quoted in, *BBC Monitoring: Proliferation Digest* (in English), February 22, 2011; and Greg Thielmann, "Strategic Missile Defense: A Threat to Future Nuclear Arms Control?" *Threat Assessment Brief*, Arms Control Association, January 26, 2011.

[14] See Hans Kristensen, "Obama and the Nuclear War Plan, *Federation of American Scientists Issue Brief*, February 10, 2010; Hans Kristensen, et al., *From Counterforce to Minimum Deterrence: Briefing to MORS Nuclear Online Workshop*, Federation of American Scientists and the Natural Resources Defense Council, May 5, 2009.

[15] As recommended in, Hans Kristensen, Robert Norris, Ivan Oelrich, *From Counterforce to Minimal Deterrence: A New Nuclear Policy on the Path Toward Eliminating Nuclear Weapons*, Federation of American Scientists and The Natural Resources Defense Council, Occasional Paper, No. 7 (April 2009), p. 43.

[16] *America's Strategic Posture*, p. 24.

NATIONAL INSTITUTE FOR PUBLIC POLICY

Dr. Keith B. Payne
President

Keith Payne is President and co-founder of the National Institute for Public Policy, a nonprofit research center located in Fairfax, Virginia. Dr. Payne also is Head of the Graduate Department of Defense and Strategic Studies, Missouri State University (Washington Campus).

Dr. Payne served in the Department of Defense as the Deputy Assistant Secretary of Defense for Forces Policy. He received the Distinguished Public Service Medal and the Forces Policy office Dr. Payne led received a Joint Meritorious Unit Award. In this position, Dr. Payne was the head of U.S. delegation in numerous allied consultations and in "Working Group Two" negotiations on BMD cooperation with the Russian Federation. In 2005 he was awarded the Vicennial Medal for his years of graduate teaching at Georgetown University.

Dr. Payne is the Chairman of the Strategic Command's Senior Advisory Group Policy Panel, editor-in-chief of *Comparative Strategy: An International Journal*, and co-chair of the U.S. Nuclear Strategy Forum. He served on the Congressional Commission on the Strategic Posture of the United States and also as a participant or leader of numerous governmental and private studies, including White House studies of U.S.-Russian cooperation, Defense Department studies of missile defense, arms control, and proliferation, and as co-chairman of the Department of Defense's Deterrence Concepts Advisory Group. He also has served as a consultant to the White House Office of Science and Technology Policy, the Arms Control and Disarmament Agency, and participated in the 1998 "Rumsfeld Study" of missile proliferation.

Dr. Payne has lectured on defense and foreign policy issues at numerous colleges and universities in North America, Europe, and Asia. He is the author, co-author, or editor of over one hundred published articles and sixteen books and monographs. His most recent book is entitled, *The Great American Gamble: Deterrence Policy and Theory from the Cold War to the Twenty-First Century* (2008). Dr. Payne's articles have appeared in many major U.S., European and Japanese professional journals and newspapers.

Dr. Payne received an A.B. (honors) in political science from the University of California at Berkeley in 1976, studied in Heidelberg, Germany, and in 1981 received a Ph.D. (with distinction) in international relations from the University of Southern California.

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Witness name: Keith B. Payne

Capacity in which appearing: (check one)

(•) Individual

( ) Representative

If appearing in a representative capacity, name of the company, association or other entity being represented:

FISCAL YEAR 2011

federal grant(s) / contracts	federal agency	dollar value	subject(s) of contract or grant

FISCAL YEAR 2010

federal grant(s) / contracts	federal agency	dollar value	subject(s) of contract or grant

FISCAL YEAR 2009

Federal grant(s) / contracts	federal agency	dollar value	subject(s) of contract or grant

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Fiscal year 2009: n/a.

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING

MARCH 2, 2011

RESPONSE TO QUESTIONS SUBMITTED BY MR. LARSEN

Dr. MILLER. First, because as you know the Global Threat Reduction Initiative (GTRI) is a Department of Energy effort led by the National Nuclear Security Administration (NNSA), my response to your question is based on NNSA's input. Assuming that a full-year continuing resolution is passed in April 2011, and that the GTRI is funded at approximately $450 million, the GTRI still would be able to remove all highly enriched uranium (HEU) from Ukraine, Mexico, and Belarus by April 2012. However, if Congress continues to pass shorter-term, continuing resolutions (CR), the GTRI will not be able to complete the Belarus shipment of 280 kilograms (enough for more than 10 nuclear weapons) on time. Also, because of the CR, the GTRI has already been forced to delay long-lead procurement and preparation activities for HEU shipments from Poland, Vietnam, Uzbekistan, and Hungary due to lack of funding, which will likely delay these shipments from Fiscal Year (FY) 2012 to FY 2013. Delays to the removal of HEU from Uzbekistan may require extensions of NNSA's material protection, control, and accounting efforts at two facilities, putting further financial pressure on that program. In addition, to keep the four-year HEU removal schedule as close to the established timeline as possible, the GTRI has had to reduce funding significantly for converting reactors from HEU to low-enriched uranium fuel, developing a domestic Mo-99 isotope production capability, and improving radiological security. The GTRI will eventually need the full FY 2011 funding to avoid further delays in shipments, conversions, and security upgrades. [See page 21.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

MARCH 2, 2011

QUESTIONS SUBMITTED BY MR. TURNER

Mr. TURNER. What is your assessment of Chinese intentions in the nuclear realm? China continues to modernize and expand its nuclear forces while we decrease ours. How does our strategic posture account for the uncertainty that China may further build up its forces and seek (or exceed) parity with the U.S. and Russia?

General KEHLER. China has a long-standing "No First Use" policy regarding nuclear weapons. China's modernization of their nuclear forces is in line with this policy, with their nuclear arsenal designed to be a sufficient and effective deterrent to foreign use (specifically the U.S. and Russia) of nuclear weapons against China. At this time, China doesn't appear to seek to expand their nuclear arsenal beyond what they perceive as a credible deterrent and is unlikely to attempt to match numbers of nuclear weapons or warheads with either the U.S. or Russia.

Mr. TURNER. Does the Obama Administration have plans to review and revise the nation's nuclear strategy and/or guidance on the roles and missions of nuclear weapons, which was last revised nearly ten years ago by the Bush Administration? Have your organizations been given any direction to look at changes or the impact of changes to U.S. nuclear strategy or guidance? Have your organizations been given any direction to look at nuclear force reductions below New START levels?

General KEHLER. USSTRATCOM's current focus is on implementing New START. The current administration has indicated its desire to review and revise the nation's nuclear strategy and guidance on the roles and missions of nuclear weapons, and we expect to be a full participant in that process. Currently, USSTRATCOM has not yet been given any direction to look at changes to, or impacts of changes to, U.S. nuclear strategy or guidance, nor has USSTRATCOM been given any direction to look at nuclear force reductions below New START levels.

Mr. TURNER. Were the reduced force levels agreed to in New START—1,550 warheads and 700 deployed (800 total) strategic delivery vehicles—the lowest levels that STRATCOM could accept while still meeting current targeting and planning guidance? If the United States were to consider further reductions, how would the nation's nuclear strategy or guidance have to change?

General KEHLER. [The information referred to is classified and is retained in the subcommittee files.]

Mr. TURNER. What conditions do you believe would need to be met in order to permit further nuclear force reductions beyond New START levels or to permit reductions in U.S. hedge weapons?

General KEHLER. I fully support the approach outlined in the Nuclear Posture Review. Further reductions must continue to strengthen the deterrence of potential regional adversaries, strategic stability vis-à-vis Russia and China, and the assurance of our allies and partners. In addition, we must invest to ensure a safe, secure, and effective deterrent through full implementation of the Stockpile Stewardship Program and the nuclear infrastructure investments recommended in the NPR, as codified in the 3113 (Stockpile Stewardship and Management Plan) and 2151 reports.

Mr. TURNER. The Navy has briefed the committee on its plans to design the SSBN(X) submarine with only 16 ballistic missile tubes. However, as stated in the Administration's unclassified summary of the Section 1251 Report to Congress which accompanied the delivery of the New START Treaty to the Senate in May 2010, "The Secretary of Defense, based on recommendations from the Joint Chiefs of Staff, has established a baseline nuclear force structure that fully supports U.S. security requirements and conforms to the New START limits. . . The United States will reduce the number of SLBM launchers (launch tubes) from 24 to 20 per SSBN. . ." This was reaffirmed in the Administration's February 16, 2011 update to the Section 1251 report, "(U) Fixing the SLBM tubes at 20 rather than 24 deployed launches per SSBN will stabilize the number of strategic submarines to be maintained and will facilitate Navy planning for the OHIO-class submarine replacement." In your testimony on March 2, you stated, "The issue of the number of tubes is not a simple black and white answer," but then went on to testify that, "Sixteen will meet STRATCOM's requirements."

- Can you please clarify your remarks on how 16 missile tubes on 12 SSBN(X) platforms meets mission requirements when the committee was told last May

and again on February 16, 2011, that the U.S. would reduce the number of SLBM launchers (launch tubes) from 24 to 20 per SSBN. What has changed?

- What specific changes in nuclear deterrence requirements, changes in nuclear strategy, or changes in planning assumptions have allowed STRATCOM to support a further reduction in SSBN missile tubes from 20 to 16?
- The SSBN(X) is expected to have a service life of over 60 years. The threat and strategic environment can change significantly over the course of 60 years. What planning assumptions—both nuclear and nonnuclear—are being made? How do they affect the number of missile tubes per hull and what sensitivity analysis has been done?

General KEHLER. The Nuclear Posture Review affirmed the unique value of each Triad leg, and while New START sets overall limits, the treaty does not dictate how either party balances its forces across delivery platforms. We must consider every platform investment in terms of its impact on the aggregate. The 1251 report specifically addresses the current Ohio-class fleet and funding requirements through 2021. The Ohio Replacement fleet will not begin service until approximately 2029—beyond the lifetime of New START.

The planned 12 Ohio-Replacement SSBNs with a 16 missile tube configuration provides the operational flexibility and responsiveness necessary across a range of scenarios. Additional tubes would provide marginal potential benefits in a subset of possible scenarios, but their absence will not detract from the fleet's required operational effectiveness. Furthermore, we must remember that the total number of launchers, size and disposition of each triad leg, stealth capabilities, total warheads available, the number of boats we can keep at sea at any given time, and potential to adjust acquisition programs are all factors to be considered in shaping the future force.

USSTRATCOM does not support a reduction in Ohio-class missile tubes from 20 to 16 in today's environment. If the strategic environment deteriorated today, our only option to increase the number of deployed SLBM weapons is to upload weapons, which is limited by the number of tubes/SSBN. However, during the procurement period for the Ohio-Replacement Program (ORP) SSBNs, we will retain the option to build more SSBNs into the 2030s. Furthermore, at the same time the Department is considering the ORP, the Air Force is beginning to consider strategic bomber and ICBM replacement options—both of which could result in programs sized differently from the current force structure. All of these decisions lie in the years ahead, as future strategic environment, policy, and capabilities of the Triad will ultimately determine how many ORP SSBNs, new bombers, and new ICBMs are required.

It is not possible to know what the strategic environment will be throughout the life of the Ohio-Replacement SSBN. While a 20 tube configuration provides marginally greater flexibility for a subset of targeting and hedging scenarios, 16 tubes provide sufficient flexibility and responsiveness to meet National requirements across a range of scenarios. The capability differences between a 16 and 20 tube configuration would only be relevant in a significantly deteriorated strategic environment. In that event, the inherent flexibility of the Triad would allow us to compensate with hedging strategies over the short term, while additional force structure (SSBNs, ICBMs, Bombers) enhancements would be a longer term solution. Again, we also have time to decide if additional submarines, beyond the planned 12 boats, will be required.

Mr. TURNER. By law, the STRATCOM Commander is required to review the annual certification of the nuclear weapons stockpile prepared by the directors of the nuclear weapons laboratories, and provide his own annual assessment. To the extent you can provide an unclassified discussion, please describe your current assessment of the nuclear stockpile and our deployed nuclear forces. As we look ahead, what concerns you most about the stockpile and weapons complex, and what impacts could these concerns have on STRATCOM's ability to meet its mission requirements?

General KEHLER. Based on CDRUSSTRATCOM 9 Nov 2010 assessment, our nuclear deterrent remains safe, secure, and effective.

I am concerned about our ability to maintain long term confidence in the military effectiveness and reliability of an aging stockpile due to shortfalls in warhead surveillance and infrastructure capabilities. I am also concerned with the potential backlog of life extension programs and sequencing. The resources requested in the FY2011 and 2012 budget requests are critical to ensuring a safe, secure, and effective stockpile.

Mr. TURNER. The Administration has requested $564 million in military construction authority to support the recapitalization of the STRATCOM Headquarters at Offutt AFB. Considering the significant investment to construct a new head-

quarters, what assessment was done regarding the possibility of moving this headquarters function to another location?

General KEHLER. While no formal assessment of alternative locations was done, Offutt AFB meets all of our location requirements for executing our nuclear command and control and other missions. Moving the STRATCOM C2 facility to another military installation would incur significant relocation costs and disrupt our uniquely trained and experienced workforce. The USSTRATCOM MILCON requirement is for the recapitalization of a facility for an existing mission at our current location. The primary purpose is to provide modern command and control across a diverse and complex mission set of national importance.

Mr. TURNER. In the proposed construction of a new STRATCOM headquarters at Offutt AFB, NE, CYBERCOM has an embedded presence to support operations. Considering CYBERCOM remains an emerging component of the national strategy whose final composition and organization has yet to be determined, there is concern about incorporating the requirements of CYBERCOM elements at Offutt AFB. The Air Force is the force provider for STRATCOM and responsible for developing the construction requirements for the new facility.

As the force provider for STRATCOM, what has the Air Force done to assess the necessity to provide infrastructure at Offutt AFB for CYBERCOM? What consideration has been given to deferring the construction of this function until a final decision is reached on the final disposition of CYBERCOM?

General KEHLER. USSTRATCOM's Command and Control Facility requirements are distinctly separate and independent of the CYBERCOM Mission. While cyber planning is conducted at USSTRATCOM, executing operations and monitoring and defending the GIG is conducted at CYBERCOM's HQ, located in Fort Meade, MD. No additional "cyber" infrastructure is required or planned for the new USSTRATCOM Command and Control facility.

USSTRATCOM has not received specific infrastructure requirements from the Air Force for CYBERCOM, nor are we anticipating any. The IT infrastructure in the new C2 Facility has been sized to support maintaining cyber networks, as part of our UCP mission and integrating this SA with our other UCP missions. Therefore, USSTRATCOM specific CYBERCOM elements are negligible and do not impact the proposed MILCON project of the USSTRATCOM Replacement Facility.

Mr. TURNER. What is your assessment of Chinese intentions in the nuclear realm? China continues to modernize and expand its nuclear forces while we decrease ours. How does our strategic posture account for the uncertainty that China may further build up its forces and seek (or exceed) parity with the U.S. and Russia?

Dr. MILLER. China's official policy toward nuclear deterrence continues to focus on maintaining a nuclear force structure able to survive attack and respond with sufficient strength to inflict unacceptable damage on the enemy. China has consistently asserted that it adheres to a "no-first-use" policy, stating it would use nuclear forces only in response to a nuclear strike against China. There is some ambiguity about the conditions under which China's no-first-use policy would or would not apply, but there has been no indication that national leaders plan to revise the doctrine. China will likely continue to invest considerable resources to maintain limited nuclear deterrence with regard to the United States, also referred to by some PRC writers as a "sufficient and effective" deterrent. Since China views nuclear deterrence as critical to its national security, it is likely to continue to invest in technology and systems to ensure the military can deliver a damaging retaliatory nuclear strike.

The pace and scope of China's efforts to modernize its nuclear arsenal, both quantitatively and qualitatively, combined with the lack of transparency, underscores the importance of ensuring strategic stability in U.S. relations with China, as well as with the other nuclear powers. Russia remains the only peer of the United States in the area of nuclear weapons capabilities; China's nuclear arsenal remains much smaller than those of Russia and the United States. Fundamental changes in the international security environment in recent years—including the growth of unrivaled U.S. conventional military capabilities, major improvements in missile defenses, and the easing of Cold War rivalries—enable us to fulfill our objectives for deterrence and stability at significantly lower nuclear force levels and with reduced reliance on nuclear weapons. Therefore, without jeopardizing our traditional deterrence and reassurance goals, we are now able to shape our nuclear weapons policies and force structure in ways that will better enable us to meet today's most pressing security challenges. Any future nuclear reductions must be accomplished in the context of strengthening deterrence against potential regional adversaries, enhancing strategic stability vis-à-vis Russia and China, and maintaining assurance of our Allies and partners.

The United States is pursuing high-level, bilateral dialogues on strategic stability with China aimed at fostering a more stable, resilient, and transparent strategic relationship. During his visit to Beijing in January 2011, Secretary Gates communicated the U.S. desire to initiate a Strategic Security Dialogue. A U.S.-China dialogue will improve our means of communication to help reduce risk and mistrust and to begin building the confidence and mutual understanding necessary for enhanced relations and stability.

Mr. TURNER. Does the Obama Administration have plans to review and revise the nation's nuclear strategy and/or guidance on the roles and missions of nuclear weapons, which was last revised nearly ten years ago by the Bush Administration? Have your organizations been given any direction to look at changes or the impact of changes to U.S. nuclear strategy or guidance? Have your organizations been given any direction to look at nuclear force reductions below New START levels?

Dr. MILLER. During 2009–2010, the Department of Defense, in consultation with the Departments of State and Energy, conducted the Nuclear Posture Review (NPR) required by Congress pursuant to Section 1070 of the National Defense Authorization Act for Fiscal Year 2008. Under the statute, the NPR was directed to review a range of elements that included the role of nuclear forces in U.S. military strategy, planning, and programming; and the relationship among U.S. nuclear deterrence policy, targeting strategy, and arms control objectives. The 2010 NPR report focuses on key objectives of nuclear weapons polices and posture, and serves as a roadmap for implementing President Obama's agenda for reducing nuclear dangers, while simultaneously advancing broader U.S. security interests.

A key part of implementing the NPR, as with previous such reviews, is the revision of detailed Presidential and Departmental guidance, and the subsequent modification of operational plans. That effort is now beginning. As an initial step, the Department of Defense will analyze potential changes in targeting requirements and force postures. Potential changes will be assessed according to how they meet key objectives outlined in the NPR, including reducing the role of nuclear weapons, sustaining strategic deterrence and stability, strengthening regional deterrence, and assuring U.S. Allies and partners. The analysis of potential revisions to guidance and planning will take account of commitments made in the NPR. The analysis will also consider possible changes to force structure that would be associated with different types of reductions. And, it will consider possible changes to nuclear deterrence strategies associated with changes in the security environment, as well as the potential contributions of non-nuclear strike capabilities to strategic deterrence. Presidents have traditionally conducted such an analysis and have provided updated planning guidance to the Department of Defense.

As stated in the NPR, the United States intends to pursue further reductions in strategic and non-strategic nuclear weapons with Russia, including both deployed and non-deployed nuclear weapons. When complete, the analysis of targeting requirements and force postures will support the formulation of post-New START Treaty arms control objectives. We intend to consider future reductions in a manner that supports the commitments to stability, deterrence, and assurance of our Allies and partners.

Mr. TURNER. What conditions do you believe would need to be met in order to permit further nuclear force reductions beyond New START levels or to permit reductions in U.S. hedge weapons?

Dr. MILLER. As stated in the 2010 Nuclear Posture Review (NPR) report, the United States intends to pursue further reductions in strategic and non-strategic nuclear weapons with Russia, including both deployed and non-deployed nuclear weapons. We intend to consider future reductions in the numbers of deployed and non-deployed nuclear weapons, both strategic and non-strategic, and the associated changes in Russian forces and other variables that would be required to do so in a manner that supports the commitments to stability, deterrence, and assurance. A number of factors, identified below, will influence the magnitude and pace of future reductions in U.S. nuclear forces below those established in the New START Treaty. Any plans to reduce the strategic nuclear forces of the United States below the levels prescribed in the New START Treaty will be reported to Congress pursuant to Section 1079 of the National Defense Authorization Act for Fiscal Year 2011.

Three overarching factors will affect potential future reductions to the Nation's nuclear arsenal. First, reductions must occur in the context of the NPR-directed goals of strengthening deterrence against potential regional adversaries, enhancing strategic stability vis-à-vis Russia and China, and maintaining assurance of our Allies and partners. This will require an updated assessment of deterrence requirements; continued improvements in U.S., Allied, and partner non-nuclear capabilities; focused reductions in strategic and nonstrategic weapons; and close consultations with Allies and partners. Second, implementation of the National Nuclear Se-

curity Administration's Stockpile Stewardship Program and the nuclear infrastructure investments recommended in the NPR, and summarized in the Fiscal Year 2012 Annual Update to the report pursuant to Section 1251 of the National Defense Authorization Act for Fiscal Year 2010, will allow the United States to shift from retaining large numbers of non-deployed warheads as a hedge against technical or geopolitical surprise toward a greater reliance on infrastructure, allowing major reductions in the nuclear stockpile. These investments are essential to facilitating any reductions while sustaining deterrence under the New START Treaty and beyond. Lastly, the size and composition of Russia's nuclear forces will remain a significant factor in determining how much and how fast the United States is prepared to reduce its forces; therefore, we will place importance on Russia joining us as we move to lower levels.

Mr. TURNER. What is your assessment of Chinese intentions in the nuclear realm? China continues to modernize and expand its nuclear forces while we decrease ours. How does our strategic posture account for the uncertainty that China may further build up its forces and seek (or exceed) parity with the U.S. and Russia?

Dr. PERRY. It is difficult to assess China's intentions, as it remains quite opaque on both its nuclear posture strategy and doctrine. At a minimum, China undoubtedly believes it is important to maintain a nuclear deterrent that remains credible well into the future. It appears to be addressing the vulnerability of its older-generation fixed silo-based ICBMs through the deployment of road-mobile ICBMs and submarine-based ballistic missiles. It also appears to be addressing the ability of its warheads to penetrate missile defenses through the development of multiple warhead technology and I would imagine other penetration aids as well. The fact that China appears to maintain its nuclear warheads separate from its missile delivery systems suggests that it does not put a premium on swift nuclear response, which accords with its doctrine. I believe that greater clarity on China's part as to its intentions, strategy, and doctrine would contribute to greater understanding and reduce the chances for misunderstanding between the world's two largest economies. I would note that Defense Secretary Gates has tried several times in his service under both Presidents Bush and Obama to encourage China to be more open on these issues, so it has not been for lack of trying on our part that its intentions remain uncertain.

I believe it unlikely that China would seek to attain nuclear parity with the United States and Russia given that both we and the Russians would detect such an attempt long before China could achieve such status. Both Russia and especially the United States would undoubtedly respond vigorously to such a challenge. Given Russia and our much broader experiences and capabilities in the strategic nuclear arena, such a Chinese gamble would run the real risk that China would be worse off than if it had not tried. Because the United States has a substantially larger nuclear arsenal than China, much greater strategic nuclear technical know-how, an active production line of the most technologically sophisticated and capable SLBMs in the world, I think China would be very ill-advised to make such a challenge, and I believe it is unlikely to try. We also can maintain flexibility by ensuring that future START-type agreements are of limited duration, with the ability to extend them if circumstances permit. This, and the "supreme national interests" clause that has been a feature of SALT II, START I, and New START, provide useful additional flexibility for the United States that should also "deter" China from seriously considering a "sprint to nuclear parity" in the years ahead.

Mr. TURNER. What conditions do you believe would need to be met in order to permit further nuclear force reductions beyond New START levels or to permit reductions in U.S. hedge weapons?

Dr. PERRY. Any such comprehensive nuclear arms treaty (CNAT), which by including tactical nuclear weapons would move beyond just strategic weapons, should be consistent with U.S. national security requirements. I believe that any reduction of U.S. hedge weapons, i.e., non-deployed warheads, would be greatly facilitated by a successful and verifiable resolution of the tactical nuclear weapons issue. We should also be confident that we would not require larger numbers of weapons to account for strategic uncertainties, such as the deployment of a Russian or Chinese missile defense that would call into question the credibility of the U.S. nuclear deterrent. An additional way to hedge would be to ensure that, as in the previous response, the United States only consider CNAT agreements of appropriately limited duration, and not of unlimited duration, until such time that the international order is conducive for more enduring agreements. I believe that a ratified and enforced CTBT would also reduce any strategic uncertainty we or the global community might have about possible developments of strategic warheads by any state. I believe we have an important strategic advantage over China in strategic weapon

technology that would be very difficult for China to overcome in the presence of a CTBT.

Mr. TURNER. The Strategic Posture Commission observed the nuclear weapons infrastructure was "decrepit" and the intellectual infrastructure was in trouble. Do the Administration's modernization plans address these concerns? How would you prioritize these plans and what remains your most significant concern?

Dr. PERRY. I believed that the Administration's nuclear weapons infrastructure plans as they existed when the SPRC released its report in May 2009 were acceptable, although they did run some risks. With the additional funding that the Administration has added since that time, my remaining concerns are quite satisfied. I remained concerned about the long-term viability of the intellectual infrastructure of the nuclear weapons enterprise and believe we should take appropriate steps to ensure we continue to have the necessary scientific and policy expertise required to meet future challenges. These issues are more in the educational policy than the technical realm, but they require our ongoing attention. The Strategic Posture Review Commission unanimously agreed in its report about the need for a stronger intellectual infrastructure to support our strategic posture, and I would be surprised if the views of the Commission members have changed on this score—mine certainly have not.

Mr. TURNER. What is your assessment of Chinese intentions in the nuclear realm? China continues to modernize and expand its nuclear forces while we decrease ours. How does our strategic posture account for the uncertainty that China may further build up its forces and seek (or exceed) parity with the U.S. and Russia?

Dr. PAYNE. Chinese military doctrine integrates nuclear weapons into an overall strategy called "active defense." The Chinese declaratory policy of "no first use" of nuclear weapons includes ambiguities that appear to allow first use in a future conflict. Indeed, official, open Chinese doctrinal documents talk about "adjusting" the nuclear use threshold in the event of war in a manner that would allow pre-emptive use of nuclear weapons. According to available open sources, Chinese intentions with regard to its nuclear forces and doctrine are twofold. First, China would like to use nuclear weapons to help deter the United States and others from interfering with its efforts to expand its political-military influence throughout Asia. In short, the goal is to deter the United States and others from responding forcefully to politico-military initiatives that China may decide to undertake in the region. Second, China sees nuclear weapons as potentially contributing in the event of war to the goal of defeating U.S. force projection capabilities that otherwise could help to defeat Chinese arms in the region. The Chinese nuclear modernization program has been in process for decades in line with these two goals, and shows no sign of abating. There is, in fact, little uncertainty that China intends to continue the modernization of its nuclear and conventional forces to meet the strategic goals as described. U.S. efforts to gain greater transparency with regard to China's nuclear forces or a formal agreement to limit/reduce China's forces have failed in the past and will likely fail in the future to the extent that China judges increased transparency or limitations to interfere with these strategic goals. The apparent direction of the U.S. nuclear strategic posture toward deeper nuclear reductions, reduced flexibility, fewer options and the avoidance of missile defense capabilities vis-à-vis China's strategic forces will help ease the difficulties for China to meet its strategic force goals.

Mr. TURNER. What conditions do you believe would need to be met in order to permit further nuclear force reductions beyond New START levels or to permit reductions in U.S. hedge weapons?

Dr. PAYNE. To be prudent, the conditions necessary for further significant reductions in our deployed forces or hedges would be: 1) either the establishment of a global collective security system with authority and power capable of reliably and effectively protecting the security of all countries; or, 2) the dramatic peaceful transformation of the world political order to such a extent that U.S. leaders and others can reliably conclude that the threats and prospective threats facing the United States and allies will be limited to such an extent that minimum U.S. deterrence capabilities will be adequate to protect the United States and assure allies. I see no evidence to suggest that either of these conditions is emerging.

Mr. TURNER. The Strategic Posture Commission observed the nuclear weapons infrastructure was "decrepit" and the intellectual infrastructure was in trouble. Do the Administration's modernization plans address these concerns? How would you prioritize these plans and what remains your most significant concern?

Dr. PAYNE. With regard to the weapons infrastructure, I defer to the Laboratory Directors who have stated that the level of support to which the administration has committed in the 1251 Report update appears adequate. Dr. Michael Anastasio, Director of the Los Alamos National Laboratory, has testified (March 30, SASC) that he is concerned about possible reductions below the 1251 baseline in coming budg-

ets. He emphasized the need to sustain focus and budgets over several decades and that, "a national commitment and stable funding to go with it are essential elements" for retaining the highly-skilled work force necessary.

I have two related concerns. First, senior administration officials have stated publicly and explicitly that the administration is undertaking a review of U.S. nuclear requirements, including a targeting review, for the specific purpose of supporting the "next round of nuclear reductions" by developing "options for further reductions in our current nuclear stockpile." U.S. force requirements, however, should not be driven by the pursuit of further numeric reductions and arms control negotiations, per se, but by the strategic goals those forces are intended to serve. In this case, those goals are the deterrence of threats to the United States, the extended deterrence of threats to allies, the assurance of allies, and the defense of the United States and its allies. It is not difficult to rationalize lower force requirements if the priority goal used to measure U.S. force adequacy is movement to lower force numbers. It may, however, be much more difficult if the priority goals of U.S. strategic forces and requirements are deterrence, extended deterrence, assurance and defense. Unless the metrics for judging the adequacy of U.S. forces include these priority goals—as has been the case with every Democratic and Republican administration for over five decades—we should not expect U.S. forces to be adequate to support those goals.

Second, if the administration indeed places numeric reductions and arms control negotiations as the priority goals to measure the value and adequacy of U.S. forces and requirements, the availability of the U.S. intellectual and industrial capabilities necessary to sustain these forces is likely to wither further. This will simply be the result of informed career choices by talented people who will take into account the priorities of the U.S. agenda and the related allocation of resources—the appearance of declining prioritization and uncertain budgets for the U.S. nuclear infrastructure will not be a helpful basis for recruitment.

QUESTIONS SUBMITTED BY MS. SANCHEZ

Ms. SANCHEZ. What is the relationship between non-proliferation, arms control and extended deterrence (particularly with respect to Germany, Japan and Turkey)?

General KEHLER. As stated in the Nuclear Posture Review, the security relationships we maintain with our allies are critical in deterring potential threats and also serve nonproliferation goals—demonstrating to neighboring states that the pursuit of nuclear weapons will undermine their goal of achieving military or political advantages, and reassuring non-nuclear U.S. allies and partners that their security interests can be protected without their own nuclear deterrent capabilities. U.S. nuclear weapons have played an essential role in extending deterrence to our allies. In Europe, the presence of U.S. nuclear weapons, combined with NATO's unique nuclear sharing arrangements, has contributed to Alliance cohesion and provided reassurance to allied and partners who feel exposed to regional threats. In Asia, the United States maintains extended deterrence through bilateral alliances, security relationships, and through forward military presence and security guarantees. The deterrent the U.S. extends to its allies relies in part on the credibility of U.S. nuclear deterrent forces and policy. The pursuit of arms control efforts—including New START, the Comprehensive Nuclear Test Ban Treaty, and the Fissile Material Cutoff Treaty strengthens our ability to reinforce the non-proliferation regime by visibly addressing our NPT commitments.

Ms. SANCHEZ. The FY12 budget begins to look at whether we should replace the ALCM. What is the impetus behind building a new ALCM and have you estimated the costs yet?

General KEHLER. The ALCM is reaching end of life in the mid to late 2020s. The department has begun the formal process to determine the requirement, replacement capability, and cost options. We will have more fidelity on this issue over the coming year.

Ms. SANCHEZ. What assurances can you make that we are making progress toward the goal of deploying cost-operationally effective missile defense technology?

General KEHLER. I am confident we are deploying a cost and operationally effective system based upon real-world operations such as Operation Burnt Frost. Theater High Altitude Area Defense testing is providing confidence with 7 of 7 successful shoot downs. Another element, the SM–3, a cornerstone of the Phased Adaptive Approach has demonstrated 20 of 24 successful intercepts. We are committed to seeking every efficiency possible. For example, the use of Aegis Ashore demonstrates the transfer of proven missile defense technology into different operational basing modes. With each generation of interceptor lot buys we are seeing the benefits of

production lessons learned and best practices which is reducing the cost per interceptor.

Ms. SANCHEZ. Are we on track to respond as soon as we are able to threats as they develop? Are you concerned that the threat from Iran and North Korea are developing faster than the intelligence community anticipated?

General KEHLER. We currently have sufficient missile defense elements protecting the homeland from a limited Iranian or North Korean attack. I am confident our investment in missile defense research and development provides adequate flexibility against unanticipated threats, and the Phased Adaptive Approach provides a flexible strategy to address these threats should they emerge. We are constantly assessing each element in our missile defense program for options to accelerate capability across a range of scenarios and a hedge strategy will be completed soon.

Ms. SANCHEZ. What are the main challenges for the newly created CYBERCOM, and how will these be addressed?

General KEHLER. Tasked to secure the DoD's networks, U.S. Cyber Command faces significant capacity, capability, and policy challenges. Specifically, U.S. Cyber Command faces a shortfall of cyber force capacity to plan, operate, and defend our networks and ensure freedom of action and maneuver in cyberspace. While they have begun to take advantage of significant efficiencies in designing and managing our information technology architecture, the sheer scale of DoD networks makes configuration management and common awareness of activities a significant challenge. Finally, there are still a number of policy and procedural issues to resolve to ensure we can effectively partner with the interagency, private sector, and allies to confront cyber threats.

In order to best manage risk, ensure U.S. and allied freedom of action, and develop integrated capabilities in cyberspace, U.S. Cyber Command is actively implementing five strategic initiatives:

- Treat cyberspace as an operational domain to organize, train, and equip so that DoD can take full advantage of cyberspace's potential in its military, intelligence, and business operations
- Employ new defense operating concepts, including active cyber defense, to protect DoD networks and systems
- Partner closely with other U.S. government departments and agencies and the private sector to enable a whole-of-government strategy and a nationally integrated approach to cybersecurity
- Build robust relationships with U.S. allies and international partners to enable information sharing and strengthen collective cyber security.
- Leverage the nation's ingenuity by recruiting and retaining an exceptional cyber workforce and enabling rapid technological innovation

U.S. Cyber Command's synergy with National Security Agency/Central Security Service's (NSA/CSS) infrastructure and expertise provides a significant advantage in this task.

Ms. SANCHEZ. What would the benefits and drawbacks be of acceding to the European Union proposed Code of Conduct for Space?

General KEHLER. I agree in principle with the pursuit of voluntary guidelines and international norms that promote standards, safe and responsible operations, and a sustainable space domain. Any such guidelines or norms of behavior should enhance the security, safety, and sustainability of all outer space activities. USSTRATCOM is working with the Joint Staff to conduct an Operations Assessment of the Code to identify potential impacts or risks to military space operations now and in the future. The assessment will be completed by 31 May.

Ms. SANCHEZ. What is the relationship between non-proliferation, arms control and extended deterrence (particularly with respect to Germany, Japan and Turkey)?

Dr. MILLER. Non-proliferation, arms control, and extended deterrence can and should be mutually reinforcing to support global strategic stability.

Arms control relates to non-proliferation through the important role it plays in the international nuclear non-proliferation regime. The cornerstone of this regime, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), is built on a basic bargain—countries with nuclear weapons will move toward disarmament; countries without nuclear weapons will not acquire them; and all countries can access peaceful nuclear energy. Arms control efforts are concrete steps that nuclear weapons States can take to fulfill the first tenet of that bargain, captured in Article VI of the NPT, to make progress toward disarmament. Toward that end, ratification of the New START Treaty with Russia is a significant achievement of the world's two largest nuclear powers to reduce their nuclear arms, build trust, promote stability, and meet their obligations under the NPT. These actions highlight the non-compliance of States such as Iran and North Korea and can help garner support from the

rest of the international community to condemn the actions of non-compliant States and work toward continued strength of the non-proliferation regime.

Extended deterrence supports non-proliferation by promoting confidence among U.S. Allies, including Germany, Japan, and Turkey—and especially those countries technically capable of developing and possessing nuclear weapons—that the United States is committed to their security and that obtaining nuclear weapons is, therefore, unnecessary and not in their national interests. In turn, U.S. extended deterrence commitments are reinforced by reductions in nuclear weapons. The consultative processes of well-constructed arms control agreements increase transparency and promote stability among participating States. Collectively, these efforts diminish the salience of nuclear weapons in international affairs and demonstrate U.S. progress in moving step-by-step toward their elimination.

Extended deterrence, arms control, and non-proliferation work synergistically to strengthen deterrence, enhance strategic stability, and assure our Allies and partners of the U.S. commitment to their defense and the improvement of international security broadly.

Ms. SANCHEZ. The FY12 budget begins to look at whether we should replace the ALCM. What is the impetus behind building a new ALCM and have you estimated the costs yet?

Dr. MILLER. The Department of Defense is committed to continued Long-Range Stand-Off (LRSO) missile capability, which provides an important capability for existing long-range aircraft and calls for future long-range aircraft capability to deliver weapons, even in the event of significant advances in air defenses by potential adversaries. The Air Force has programmed $0.9 billion for research, development, test, and evaluation over the next five years for the development of the LRSO. At this time, we do not have a program cost estimate, although we expect to have program costs defined by 4th quarter of Fiscal Year 2013.

Ms. SANCHEZ. What assurances can you make that we are making progress toward the goal of deploying cost-operationally effective missile defense technology?

Dr. MILLER. The Administration is committed to deploying capabilities that have been proven effective under extensive testing and assessment and are affordable over the long term.

To strengthen the testing program, a number of steps are being taken. This commitment reflected our assessment that it is no longer necessary to pursue a high-risk acquisition strategy that simultaneously develops and deploys new systems. The Integrated Master Test Plan announced in June 2009, and updated every six months since that time, reflects the Missile Defense Agency's new approach. This program sets out test activities over the full course of each system's development, not just two years into the future as was the case under the former program. These activities include a comprehensive set of ground and flight tests designed to demonstrate operational performance and validate models used to support an evaluation of system effectiveness.

To ensure adequate oversight of the missile defense program, DoD has enhanced the roles and responsibilities of the Missile Defense Executive Board (MDEB). Established in March 2007, the MDEB provides oversight and guidance in a collaborative mode involving all missile defense stakeholders in DoD and some from outside DoD.

Ms. SANCHEZ. Are we on track to respond as soon as we are able to threats as they develop? Are you concerned that the threat from Iran and North Korea are developing faster than the intelligence community anticipated?

Dr. MILLER. Yes, we are on track to respond to ballistic missile threats as they develop. Our current ballistic missile defense posture already protects us against the potential emergence of an Iranian or North Korean ICBM threat.

Although there is some uncertainty about when and how the ICBM threat to the U.S. homeland will mature, the Administration is taking several steps to maintain and improve the protection of the homeland from the potential ICBM threat posed by Iran and North Korea. These steps include the continued procurement of ground-based interceptors (GBIs), the procurement and deployment of additional sensors, and upgrades to the Command, Control, Battle Management, and Communications (C2BMC) system.

We are also taking steps to hedge against the possibility that threats might evolve more rapidly than planned capability enhancements, or that those capability enhancements may be delayed for technical reasons. The Administration is completing construction of eight additional silos at Missile Field Two in Fort Greely, Alaska, and continuing development and testing of the two-stage GBI. Additionally, six silos in Missile Field One at Fort Greely will be placed in a storage mode for possible upgrade for operational use in the future. The Administration is considering addi-

tional steps to strengthen the U.S. hedge posture, and we will brief this subcommittee on the results in a classified setting.

Ms. SANCHEZ. What are the main challenges for the newly created CYBERCOM, and how will these be addressed?

Dr. MILLER. U.S. Cyber Command (USCYBERCOM), as a newly organized subunified command, is working to address several challenges in order to meet the Command's mission requirements.

A key challenge is developing a command and control structure that balances the global operations and defense responsibilities of USCYBERCOM with the responsibilities and requirements of the regional combatant commanders. USCYBERCOM is working with the Joint Staff and several regional combatant commands to explore alternative approaches, and identify the most effective command and control structures.

In terms of capacity, USCYBERCOM is focused on building the cyber force. This involves recruiting new talent; training, credentialing, and certifying the cyber workforce; and retaining the right force for the future.

In terms of capability, USCYBERCOM is focused on improving situational awareness and security of own networks. In order to do this, DOD must provide effective configuration management of legacy systems and hunt effectively on our own networks, while working toward developing a single DOD enterprise, thereby providing a more agile and active defense for our information systems.

In the policy arena, USCYBERCOM is working with the Department's Cyber Policy Office to address the concern that DoD's networks ride on a global commercial infrastructure that is inherently vulnerable and open to intrusion, denial, destruction, and exploitation. To secure DoD systems and the information and systems of the Defense Industrial Base more effectively, USCYBERCOM and DoD are working with our interagency partners to improve information sharing with, and the cybersecurity of, the private sector, our Allies/partners, and other departments and agencies of the U.S. Government.

Ms. SANCHEZ. Can you give us an update on where the Administration is with regard to export control reform and how this will affect the space industry?

Dr. MILLER. We are making significant progress toward reforming the U.S. export control system in order to make it more effective, efficient, and transparent. Our reform effort is being conducted in three phases and focuses on the "four singles" of export control reform: a single control list, a single licensing agency, a single export enforcement coordination center, and a single U.S. Government-wide electronic information technology (IT) licensing system. We have completed important regulatory changes to encryption and dual-national controls in Phase I, and Phase II activities are well underway. For example, we have been making significant progress toward the creation of a single control list. The Department of Defense has taken the lead in rewriting the U.S. Munitions List (USML), including Category XV, which deals with spacecraft. We will also begin revising and "tiering" dual-use controls in the near future so that the USML and the Commodities Control List (CCL) can be merged into one. On the single IT system, the Department has been designated as the Executive Agent for the new U.S. Government-wide export licensing system that will be based on DoD's USXPORTS system. We are working with the Departments of Commerce and State to establish connectivity with the USXPORTS system. The Executive Order establishing the Enforcement Coordination Center was signed by the President in November 2010, and efforts are underway to establish the Center.

We have not completed our rewrite of controls on spacecraft in the USML; therefore, I cannot provide a detailed assessment at this time of the impacts on the U.S. space industry. However, consistent with our overall approach to export control reform, I expect that we will propose "higher fences around fewer items," and increase transparency and predictability, so that the U.S. space industry will be able to compete globally more efficiently. We are well aware that current U.S. law limits the flexibility of the President in this area. I look forward to working with Congress on any legislative changes that may be required to implement proposed changes.

Ms. SANCHEZ. What would the benefits and drawbacks be of acceding to the European Union proposed Code of Conduct for Space?

Dr. MILLER. There are many potential benefits to the EU's proposed international Code of Conduct for Space. The proposed international Code of Conduct calls on subscribing states to refrain from activities that create long-lived debris and to notify certain space activities, including those that might risk creating debris. Space debris is a growing concern for all space-faring nations.

Another benefit is that the EU's proposed international Code of Conduct reinforces key space norms that the U.S. Government has already endorsed, including pre-launch notifications under the Hague Code of Conduct, UN Debris Mitigation Standards, and safety of flight practices to share collision warning information.

Additionally, the EU's proposed international Code of Conduct explicitly recognizes nations' inherent right of self-defense. This preserves considerable flexibility to implement the National Security Space Strategy, issued by the Department of Defense and the Office of the Director of National Intelligence. The Code of Conduct would not constrain either the development of the full range of space capabilities, nor the ability of the United States to conduct necessary operations in crisis or war.

Ms. SANCHEZ. What is the relationship between non-proliferation, arms control and extended deterrence (particularly with respect to Germany, Japan and Turkey)?

Dr. PERRY. All three of these areas are important components of broader U.S. strategic posture. Turkey, and especially Germany and Japan, have the potential to become nuclear weapons powers rather quickly were they to decide to do so. However, under extended deterrence, U.S. security assurances, including nuclear assurances, virtually eliminate any incentives they or our other allies and friends may have to acquire their own nuclear weapons capabilities. Without a policy of extended deterrence we would face a highly proliferated nuclear world, a world that would be much more unstable than we face today. Arms control relates to extended deterrence by reassuring our allies and friends that the potential Russian nuclear threat is bounded, thus fostering a climate of cooperation that these countries, most of whom lie much closer to Russia than does the United States, very much support, given the dangers they fear could arise if U.S.-Russian relations grew tense and hostile.

Finally, arms control and non-proliferation are linked in several ways. The United States and Russia are both obligated under Article VI of the NPT to work toward nuclear disarmament, offering our allies, and all countries the prospect of ultimate freedom from nuclear threats at some point in the distant future. U.S. participation in the arms control process thus gives these countries important additional incentives to cooperate with the United States in our non-proliferation efforts, working together to block the transfer of nuclear-related technologies and equipment to countries seeking to acquire nuclear capabilities. Effective non-proliferation strategies, supporting verification agreements, and monitoring technologies, also reassure the United States and Russia that they do not need to develop or build additional nuclear weapons to guard against new nuclear-armed states. As Russia and the U.S. have similar non-proliferation interests, progress and cooperation in both arms control and non-proliferation helps contribute to greater trust and improved relations between the two countries, helping to set conditions for future work on tactical and non-deployed nuclear weapons.

Ms. SANCHEZ. What is the relationship between non-proliferation, arms control and extended deterrence (particularly with respect to Germany, Japan and Turkey)?

Dr. PAYNE. The relationship among non-proliferation, arms control and extended deterrence is the subject of considerable controversy. Despite numerous confident claims with regard to this relationship, there are few basic facts that allow for confident claims to be made reasonably. For example, the frequent confident claim that further bilateral or multilateral agreements to reduce nuclear weapons among the nuclear states will contribute significantly to non-proliferation is highly speculative. There is no convincing evidence to support the expectation that a strengthened non-proliferation norm will emerge from such agreements and empower more effective global non-proliferation efforts. Despite the many confident claims of this linkage, there is insufficient evidence to conclude that these represent reasonable expectations. Indeed, the deep reductions in U.S. and Russian strategic nuclear weapons since the end of the Cold War seem to have had no such positive effect and the potential reduction in the credibility of the U.S. extended nuclear deterrent will incentivize proliferation in some cases.

There are, however, some basic facts in this regard that can be highlighted. First, some U.S. allies, notably those who face significant threats, including nuclear threats, or who see the potential for greatly increased nuclear threats in their regions, have expressed increasing concerns about the future credibility of the U.S. extended nuclear deterrent. They understandably see negative implications for their security in the potential degradation of the credibility of the U.S. nuclear umbrella. Some of these allies, implicitly or explicitly, have indicated that they do see the U.S. focus on nuclear force reductions and movement toward nuclear zero as contributing to the prospective degradation of U.S. credibility, and thus to the degradation of their own security. One option that these allies may consider if they no longer can rely on the U.S. nuclear deterrent for their security is the acquisition of their own independent nuclear deterrent forces. Some Japanese and South Korean commentators and officials have pointed to this possibility.

There are internal debates along these lines within allied countries and baring some dramatic new threat developments, of the countries identified in the question, my opinion is that we are unlikely to see this concern and consequence in Germany.

The prospects are, I suspect, somewhat higher for Japan and Turkey given the threats and emerging threats these two allies face.

QUESTIONS SUBMITTED BY MR. FRANKS

Mr. FRANKS. We all recall the difficulties surrounding the ratifying of the New START treaty, one of which was whether or not the treaty affected our ability to deploy missile defenses in Europe. There are media reports suggesting that Russia is apparently determined to make any potential negotiations on tactical nuclear-weapon curbs contingent on U.S. concessions over plans to deploy missile defenses in Europe and note Russian warnings that it might withdraw from New START if the U.S. increases the capability of its missile defenses. If you were directed to deploy missile defenses in Europe today, how long will it be before such a system were operation, and in your opinion, what will be Russia's response regarding their commitment to New START?

General KEHLER. U.S. Strategic Command is responsible for synchronizing planning for global missile defense, in coordination with other combatant commands and the services, but we do not serve as the force provider of missile defense assets. The President has already directed the deployment of missile defense assets to Europe in coordination with our NATO allies. U.S. Strategic Command fully supports this effort. Phase 1 of the European Phased Adaptive Approach (PAA) should be complete by late 2011 and provide an initial defensive capability against short-, medium-, and intermediate-range ballistic missiles using the Aegis BMD 3.6.1 weapon system with SM–3 IA interceptors and forward-based AN/TPY–2 and SPY–1 radars. The United States clearly stated on 7 April 2010 that our "missile defense systems are not intended to affect the strategic balance with Russia" and that "The United States intends to continue improving and deploying its missile defense systems in order to defend itself against limited attack and as part of our collaborative approach to strengthening stability in key regions." I look forward to any role USSTRATCOM may play in ongoing cooperation with our Russian partners.

Mr. FRANKS. When the Phased Adaptive Approach was first introduced, deadlines for each phase were set under the impression that long-range missile threats were "slow to develop." Recently you made remarks that suggest North Korea's ICBM and nuclear developments are proceeding faster than expected. This raises concerns that the PAA will not be available to defend against long-range ICBMs before North Korea develops this capability.

In the interim, there must be a hedging strategy. Please identify the hedging strategy you will pursue to defend our Nation's Homeland in the event that North Korea or another rogue nation acquires ICBM capability earlier than expected or if the new Next Generation Aegis Missile has technical problems. Particularly, does the GMD two stage interceptor remain a realistic and flexible hedge against these advancing threats? Also, what is the timeline for a decision on this strategy?

Furthermore, do you have an assessment of other nations' timeline of achieving ICBM and nuclear capabilities able to threaten our homeland, particularly Iran's program.

If not, what is being done to make an accurate assessment of their developments?

General KEHLER. The United States is currently protected against limited ICBM attacks. The United States has 30 deployed ground-based interceptors (GBIs) and is continuing improvements in the ground-based midcourse defense (GMD) system to address potential North Korean and Iranian long-range ballistic missile capabilities. The United States already possesses the capability to counter the projected threat from North Korea and Iran.

Any decision to deploy elements of the hedge will be based on a combination of factors such as threat advancements or delays in SM–3 test progress. I am confident of the intelligence community assessments of timelines for threat development. As an adaptive strategy, the Phased Adaptive Approach is tailored to respond to adversary development, and has the inherent flexibility to meet unanticipated Iranian threats. The Department is in the process of finalizing and refining its hedge strategy, and will return to brief this subcommittee on the results in a classified setting in the next several weeks.

Mr. FRANKS. We all recall the difficulties surrounding the ratifying of the New START treaty, one of which was whether or not the treaty affected our ability to deploy missile defenses in Europe. There are media reports suggesting that Russia is apparently determined to make any potential negotiations on tactical nuclear-weapon curbs contingent on U.S. concessions over plans to deploy missile defenses in Europe and note Russian warnings that it might withdraw from New START if the U.S. increases the capability of its missile defenses. If you were directed to de-

ploy missile defenses in Europe today, how long will it be before such a system were operation, and in your opinion, what will be Russia's response regarding their commitment to New START?

Dr. MILLER. The USS MONTEREY, a guided missile cruiser equipped for ballistic missile defense, will deploy in a few days to the Mediterranean Sea for a six-month mission. This is the start of Phase 1 of the European Phased Adaptive Approach (EPAA). As soon as the MONTEREY arrives on station, it will provide initial operational missile defense capabilities in Europe.

I do not expect any particular Russian response to the deployment of the USS MONTEREY. Russia's stated concerns about the European Phased Adaptive Approach (EPAA) have focused on Phases 3 and 4, planned for 2018 and 2020 respectively. Both before and after the ratification of New START, various U.S. interlocutors have explained to their Russian counterparts that the EPAA will not pose a threat to Russia's offensive missile forces.

Because the EPAA does not threaten Russia's strategic deterrent, I do not believe that Russia will have any reason to withdraw, or threaten to withdraw, from the New START Treaty.

Mr. FRANKS. When the Phased Adaptive Approach was first introduced, deadlines for each phase were set under the impression that long-range missile threats were "slow to develop." Recently you made remarks that suggest North Korea's ICBM and nuclear developments are proceeding faster than expected. This raises concerns that the PAA will not be available to defend against long-range ICBMs before North Korea develops this capability.

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Dr. MILLER. The United States is currently protected against limited ICBM attacks. The United States has 30 deployed ground-based interceptors (GBIs) and is continuing improvements in the ground-based midcourse defense (GMD) system to address potential North Korean and Iranian long-range ballistic missile capabilities. The United States already possesses the capability to counter the projected threat from North Korea and Iran. The Intelligence Community continues to assess and evaluate Iranian and North Korean progress toward achieving ICBM and nuclear capabilities that could threaten the U.S. homeland.

The Department is in the process of finalizing and refining its hedge strategy, and we will be pleased to brief this subcommittee on the results in a classified setting when it is complete.

Mr. FRANKS. We all recall the difficulties surrounding the ratifying of the New START treaty, one of which was whether or not the treaty affected our ability to deploy missile defenses in Europe. There are media reports suggesting that Russia is apparently determined to make any potential negotiations on tactical nuclear-weapon curbs contingent on U.S. concessions over plans to deploy missile defenses in Europe and note Russian warnings that it might withdraw from New START if the U.S. increases the capability of its missile defenses. If you were directed to deploy missile defenses in Europe today, how long will it be before such a system were operation, and in your opinion, what will be Russia's response regarding their commitment to New START?

Dr. PERRY. The key to understanding Russia's edginess about U.S. strategic missile defenses is to recognize that Russia is strongly committed to maintaining a credible nuclear deterrent, just as is the United States, especially given Russia's substantial conventional military and technological inferiority compared to the United States and the status that their nuclear arsenal gives them on the world stage. Accordingly, Russia becomes uneasy in the face of external developments that have the potential to diminish the credibility of their nuclear deterrent. This of course does not mean that the United States should not deploy strategic missile defenses appropriate to our needs—I continue to support the deployment of a missile defense shield to defend against limited threats from countries like Iran or North Korea. The need for missile defenses in Europe is related to defending our allies and friends in that area from ballistic missile threats and I support the Phased Adaptive Approach (PAA) strategy. The PAA timetable for deployments in Europe appears realistic to me.

Russia will likely express uneasiness about this deployment unless we are able to negotiate a level of missile defense cooperation in PAA development that is acceptable to both the United States and Russia, and I believe that we should try to achieve such cooperation. However, Russia remains strongly interested in limiting U.S. strategic offensive forces and would be unlikely to withdraw from New START unless convinced that U.S. missile defense deployments would pose so substantial a threat to Russia's own deterrent force that it would need to increase its strategic nuclear force as a counter-move.

I would also note that if the roles were reversed, and Russia—or China, for that matter—was deploying significant levels of modern strategic defenses, the United States would likely feel uneasy in a similar manner about possible substantial Russian or Chinese strategic defense deployments. Russia and the United States do not see eye-to-eye on the subject of missile defenses, and I support the U.S. position, but I believe it is incorrect to impute dark designs to Russia's expressed concerns on this subject. They are determined to maintain a credible strategic nuclear deterrent, and so are we.

Finally, I would direct anyone interested in this subject to the language on strategic missile defense of the 2009 report of the Strategic Posture Review Commission, which the Commission unanimously supported and which remains as valid today as it was in 2009:

> For more than a decade the development of U.S. ballistic missile defenses has been guided by the principles of (1) protecting against limited strikes while (2) taking into account the legitimate concerns of Russia and China about strategic stability. These remain sound guiding principles. Defenses sufficient to sow doubts in Moscow or Beijing about the viability of their deterrents could lead them to take actions that increase the threat to the United States and its allies and friends. Both Russia and China have expressed concerns. Current U.S. plans for missile defense should not call into question the viability of Russia's nuclear deterrent. China sees its concerns as more immediate, given the much smaller size of its nuclear force. U.S. assessments indicate that a significant operational impact on the Chinese deterrent would require a larger and more capable defense than the United States has plans to construct, but China may already be increasing the size of its ICBM force in response to its assessment of the U.S. missile defense program.
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> *America's Strategic Posture,* Report of the Congressional Commission on the Strategic Posture of the United States, United States Institute of Peace Press, 2009, p. 32.

The United States should absolutely deploy the missile defenses we need, but we would run important and unnecessary risks if we deployed, or seemed seriously interested in deploying, defenses in excess of that needed to defend against limited threats.

Mr. FRANKS. We all recall the difficulties surrounding the ratifying of the New START treaty, one of which was whether or not the treaty affected our ability to deploy missile defenses in Europe. There are media reports suggesting that Russia is apparently determined to make any potential negotiations on tactical nuclear-weapon curbs contingent on U.S. concessions over plans to deploy missile defenses in Europe and note Russian warnings that it might withdraw from New START if the U.S. increases the capability of its missile defenses. If you were directed to deploy missile defenses in Europe today, how long will it be before such a system were operation, and in your opinion, what will be Russia's response regarding their commitment to New START?

Dr. PAYNE. I defer to DOD officials with the responsibility for missile defense research, development and deployment for estimates of the timelines involved for the deployment of the four phases of the PAA. The linkage between U.S. missile defense deployment and the Russian commitment to New START is open to informed comment.

Russian officials see the U.S. desire for New START implementation and for further arms control agreements as the leverage necessary to gain some level of control over the U.S. missile defense program. They seek to exploit U.S. fears by threatening to withdraw from New START if U.S. missile defense threatens their nuclear deterrent capabilities and to exploit U.S. hopes for further nuclear reductions in order to secure limits on U.S. missile defenses and the transfer of U.S. missile defense technical know-how to Russia. This is why Russian officials have linked Russian implementation of New START and the potential for limitations on Russian tactical nuclear weapons to U.S. concessions on U.S. missile defense programs and possible U.S. conventional strategic weapons programs (Prompt Global Strike). Specifically, Russian officials have warned that no further arms control progress will

be possible unless the United States agrees to a joint missile defense system with Russia or accepts geographical, technical, and operational restrictions on U.S. missile defense capabilities.

My expectation, however, is that Russia sees New START as greatly in its interest. Russian leaders have now repeatedly stated that New START demands reductions *only by the United States*—a point made by New START critics in 2010. Russia apparently will require years to build up its forces to reach New Start limits. Consequently, Russia ultimately will not withdraw from the treaty even if the U.S. goes forward in a measured way with all four phases of its missile defense program. Rather, the Russian hope is that its linkage of New START and further arms control possibilities to limits on U.S. missile defense, complemented by the vocal repetition of this linkage by domestic American critics of U.S. missile defense, will be sufficient to secure its desired limits on U.S. missile defense. For Russia, the existence of negotiations alone may serve this purpose; an agreement may be unnecessary. Russian officials will push hard and vocally on this linkage, but hope to achieve their goals short of being pressed to the point of actually withdrawing from New START. In the past, Soviet leaders engaged in this same type of highly-visible negotiating hardball with President Reagan. They were dissatisfied with U.S. actions regarding INF and following many similar threats, withdrew from negotiations. But President Reagan remained firm in response and the Soviets soon returned to negotiations.

With regard to future limitations on Russian tactical nuclear weapons, my expectation is that Russia will *not agree* to any significant limitations on its tactical nuclear forces if the U.S. demands an associated intrusive monitoring and verification regime. Given the state of Russia's conventional defensive capabilities and the limited prospect for serious Russian military reform, tactical nuclear weapons will remain the centerpiece of Russia's defensive strategies vis-à-vis NATO, China and others. Consequently, Russian officials may seek to trade some modest increase in transparency and nominal, largely unverifiable, numeric limitations on its tactical nuclear weapons in exchange for geographical, technical, and operational restrictions on U.S. missile defense capabilities. But, if pressed for an agreement that requires effective verification and deep reductions in Russia's tactical nuclear forces, Russia is unlikely to agree even if the United States is willing to concede to Russia's preferred limits on U.S. missile defense. Russia is unlikely to accept such an agreement on tactical nuclear weapons under virtually any plausible conditions, which is why New START is not likely to prove to be, as was advertised, the first step toward a verifiable, equitable agreement on tactical nuclear weapons.

QUESTIONS SUBMITTED BY MR. HEINRICH

Mr. HEINRICH. General Kehler, in your submitted testimony you address industrial base concerns in respect to space requirements and explain that, "Many suppliers struggle to remain competitive as demand for highly specialized components and existing export controls reduce their customers to a niche government market."

I couldn't agree more. Our decades-old system for export controls is largely a Cold War legacy that is preventing high tech industries from selling less sensitive items that are readily available in other industrialized countries.

Dr. Miller indicated there are more than 60 nations and government consortia currently operating satellites, and the United States share of worldwide satellite manufacturing has dropped from approximately 65 percent in 1997 to approximately 30 percent in 2008.

I also think it's important to note that many companies in Europe and elsewhere tout their satellites and components as "ITAR-free."

Eliminating unnecessary controls will make us more competitive, create jobs, and boost exports.

This committee actually worked to include a Section in the FY10 NDAA conference report that required an assessment of which technologies may be candidates for removal from the U.S. Munitions list as well as the implications of doing so, but this report has been delayed by over a year.

What is the status of the 1248 report? Can you speak a little about the urgency for reforming our outdated system in a way that both makes sense from both a security and economic standpoint? How can we actively promote the sale of capabilities developed by U.S. companies to partner nations?

General KEHLER. I understand that the final "1248 Report" or "Risk Assessment of U.S. Space Export Control Policy" is in coordination between the Departments of Defense and State. The final report was originally delayed to ensure congruence with the National Space Policy, which has since been completed and released.

USSTRATCOM has reviewed this document and provided feedback to the Joint Staff.

One of the defining characteristics of today's national security operating environment is the extraordinary pace of technological change—a rate that continues to grow, increasing the level of difficulty for U.S. companies to compete in the global marketplace. At the same time, decreased competitiveness in the U.S. industrial base can portend fewer advancements and greater difficulty maintaining a competitive edge in space technology. This in turn, could have significant, negative national security implications, if neither the industrial base nor cutting-edge technology is available. In short, diminishing U.S. commercial space industry leadership is a step toward diminishing overall U.S. leadership in space—steps we can ill afford to take, especially at today's pace of global change. Effective export policies, as outlined in the National Space Policy, require analyses and reforms that should begin as soon as possible. Our commercial and security interests will be far better served by a more agile, transparent, predictable, and efficient export control regime.

This is best addressed by the private sector or departments of the government responsible for export promotion. However, U.S. leadership is by far the most important means of ensuring the strength of our U.S. commercial space industrial base. Export control reform should ease the transfer of less-sensitive products and technologies to key allies and partners with whom we seek interoperable solutions.

Mr. HEINRICH. You highlighted the importance of funding our nuclear weapons complex in your testimony and expressed specific concerns with the proposed year-long House CR that would cut in half the additional funding for Weapons Activities.

This cut deeply concerns me, as well as the significant cut to nonproliferation—$647M. How will these cuts impact our nuclear weapons complex overall modernization plans and how will these cuts affect the New START Treaty?

General KEHLER. Proposed cuts will jeopardize and delay necessary recapitalization of the nuclear weapons complex as well as negatively impact our ability to sustain the stockpile. Although I cannot speak for the National Nuclear Security Administration, we anticipate they will prioritize available resources to support the reconfiguration of our strategic forces in accordance with the New START Treaty.

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What is the status of the 1248 report?

Dr. MILLER. The report required by Section 1248 of the National Defense Authorization Act for Fiscal Year 2010 is currently in coordination. It was originally delayed to ensure that it could take account of the new National Space Policy, which was completed in June 2010, and the National Security Space Strategy, released in January 2011. In preparing the Section 1248 report, DoD has worked with the Department of State and a broad cross section of organizations, including the intelligence community, NASA, and the Department of Commerce. Many DoD organizations, including those in the acquisition, policy, and operations communities, participated in the preparation of the report. We are working to complete coordination so that we can provide the report to Congress as soon as possible.

Mr. HEINRICH. Can you speak a little about the urgency for reforming our outdated system in a way that both makes sense from both a security and economic standpoint?

Dr. MILLER. There are compelling security arguments for fundamentally changing the regulations and procedures we have had in place since the Cold War for exporting weapons and dual-use equipment and technology. Over the years, we have made incremental changes—but this is not enough. We need to establish new rules, orga-

nizations, and processes that deal effectively and efficiently with 21st Century challenges. This is the basis for the "four singles" of our export control reform effort: a single control list, a single licensing agency, a single enforcement coordination center, and a single information technology (IT) system for export licensing. The export control reform initiative is focused on protecting items and technologies that are the U.S. "crown jewels." By doing so, we will be better able to monitor and enforce controls on technology transfers with real security implications while helping to speed the provision of equipment to Allies and partners who fight alongside us in coalition operations. A more efficient export control system, based on revised controls and new licensing policies and procedures, would allow U.S. companies to compete more effectively in the world marketplace.

Mr. HEINRICH. How can we actively promote the sale of capabilities developed by U.S. companies to partner nations?

Dr. MILLER. This is an area more appropriately addressed by the private sector or U.S. Government departments and agencies with export promotion responsibilities. However, we expect that export control reform would result in the ease of transfers of many less-sensitive items and technologies to U.S. Allies and partners.

Mr. HEINRICH. You highlighted the importance of funding our nuclear weapons complex in your testimony and expressed specific concerns with the proposed year-long House CR that would cut in half the additional funding for Weapons Activities. This cut deeply concerns me, as well as the significant cut to nonproliferation—$647M. How will these cuts impact our nuclear weapons complex overall modernization plans and how will these cuts affect the New START Treaty?

Dr. MILLER. Last November, the President announced his commitment to modernize the nuclear infrastructure, which supports our nuclear deterrent, and our nonproliferation efforts. The President's Fiscal Year (FY) 2011 budget request represents the first step towards that commitment. The proposed cuts, $624M for Weapons Activities and $647M for Nonproliferation Activities, would not have any direct effect on the New START Treaty, but they would delay much needed investments in our nuclear infrastructure, and reduce our ability to secure nuclear materials and prevent proliferation globally.

Mr. HEINRICH. I took particular interest in one of the recommendations the Commission presented which was that the President should *designate* the nuclear weapons laboratories as "National Security Laboratories." Can you speak a little as to why this is important?

Dr. PERRY. The National Laboratories already perform a substantial amount of work for not just the Department of Energy, but also the Department of Defense and Homeland Security, and the Intelligence Community as well. This is beneficial for everyone concerned, but it in some sense shortchanges the Labs, because these other agencies can contract for services "a la carte," without having a larger stake in the overall health of the Laboratory complex. The Posture Commission was quite explicit in its concerns over the health of the intellectual infrastructure of the Labs and believed that, as your question points out,

> The President should designate the nuclear weapons laboratories as National Security Laboratories. This would recognize the fact that they already contribute to the missions of the Departments of Defense and Homeland Security and the intelligence community in addition to those of DOE. The president should assign formal responsibility to the Secretaries of Energy, Defense, State, and Homeland Security and the Director of National Intelligence for the programmatic and budgetary health of the laboratories.
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> *America's Strategic Posture,* Report of the Congressional Commission on the Strategic Posture of the United States, United States Institute of Peace Press, 2009, p. 64.

In a related recommendation, the Posture Commission also pointed out:

> To reinforce this designation, the Commission recommends that the President issue an Executive Order formally assigning the Secretaries of Defense, Energy, State, and Homeland Security and the Director of National Intelligence joint responsibility for the health of these laboratories. The White House should establish an interagency process to accomplish this and ensure that work in defense, homeland security, and intelligence is assigned to the national laboratories, building on work already in progress.
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> Such a step is needed because that work already in progress has brought home an essential lesson: elements of the federal government outside DOE are keen to utilize the capabilities of these laboratories but they are not keen to invest in the underlying science and engineering that generates those capabilities. As one expert has put it, the rest of the government is anxious to buy wine by the glass, but no one wishes to invest in the vineyard (Frances Fragos Town-

send in remarks at the Nuclear Deterrence Summit, December 3, 2008). The Commission believes that this diversification of support is the most—and perhaps the only—effective way to maintain the excellence of the laboratories. But much more buy-in is needed from outside DOE. What is required is not a series of small projects but a few, large, sustained efforts that will support capability building. To accomplish this objective would require strong, high level support and, so far, this has been lacking. The directors of the weapons laboratories have established the following criteria for support from a broader range of agencies: projects should be synergistic with the Laboratory mission, of national importance, and done with excellence using unique Laboratory capabilities. The Commission endorses these criteria.

America's Strategic Posture, Report of the Congressional Commission on the Strategic Posture of the United States, United States Institute of Peace Press, 2009, p. 54.

The revised designation for the Labs thus would reflect this broader national security reality and strengthen the programmatic and budgetary health of the Labs.

QUESTIONS SUBMITTED BY DR. FLEMING

Dr. FLEMING. General, since the closure of the Barksdale Weapons Storage Area in 2007, we have a single point of failure in the ALCM mission, a critical vulnerability that I have serious concerns about. As part of its Nuclear Roadmap, the Air Force reached the decision in 2009 to re-certify the Barksdale WSA, going as far to request funding for the project in its Fiscal Year 2010 budget request. However, in testimony before the full committee on February 17th of this year, General Schwartz indicated that the Air Force does not intend to move forward with this project, citing concerns over its cost. At that time General Schwartz stated he was confident that Air Force Global Strike Command has a "workable" solution in place to mitigate training and readiness issues that result from having our nuclear bombers at Barksdale separated from nuclear munitions. While day-to-day readiness and proficiency are critically important, I remain more concerned about operational impacts—specifically impacts to STRATCOM's ability to execute Presidentially-directed OPLAN cruise missile missions.

Can you describe in-detail STRATCOM's involvement, if any, in the initial assessment to re-certify the Barksdale WSA? If such an assessment were performed, were any conclusions made or courses of action recommended?

General KEHLER. Our involvement with the initial assessment to re-certify the Barksdale WSA was in response to the Air Force's Nuclear Road Map and the reinvigoration of the nuclear enterprise effort. My staff conducted an internal look to determine the feasibility of reopening the Barksdale WSA. After reviewing the costs associated with sustainment of all WSAs, and evaluating the analysis conducted under the original 2006 PDM III study, which determined a single WSA at Minot AFB was feasible to meet our operational requirements, we decided the operational risk to meeting our OPLAN mission requirements was acceptable and decided not to pursue recertification of the Barksdale WSA.

Dr. FLEMING. Did the Air Force consult with STRATCOM prior to the Air Force making the decision not to move forward with the Barksdale WSA recertification? If so, did STRATCOM raise any concerns or objections regarding potential operational impacts of not recertifying the Barksdale WSA?

General KEHLER. Yes. The Air Force collaborated closely with us and the nuclear enterprise to ensure our operational requirements were a factor in the decision. As we worked through this decision process, we evaluated the potential operational and support risks to execution of our OPLAN, concluded the risk was acceptable, and did not submit any objections to this decision.

Dr. FLEMING. At any point in time did STRATCOM planners perform a vulnerability assessment related to consolidating the ALCM mission at Minot AFB?

General KEHLER. Yes. My staff was closely involved with supporting the 2006 Program Decision Memorandum–III (PDM–III) directed studies and assessments. We participated on the team responsible for assessing nuclear cruise missile force structure changes and developing missile consolidation options and ensured STRATCOM operational requirements were addressed throughout the process. The results of this study verified we could meet all operational requirements and execute all directed missions operating from a single WSA location.

Dr. FLEMING. Did the Commander of JFCC–GS raise any objections or concerns over consolidating the ALCM mission at Minot AFB?

General KEHLER. The ALCM fleet was consolidated at Minot AFB prior to the standup of Air Force Global Strike Command (AFGSC). Establishing a WSA at

Barksdale would be operationally beneficial; however, we have achieved a workable solution to the USSTRATCOM mission by consolidating the ALCM at Minot AFB. This consolidation is due to the fact that the number of ALCMs have decreased; therefore, the initial workload since 2007 has decreased. Accordingly, given the fixed variables of facilities, support equipment, and personnel, the current solution is meeting mission requirements.

The ALCM mission is operationally viable today with the single WSA at Minot AFB. Discussion with the Commander of JFCC–GS at the time of consolidation revealed that concerns were captured as part of the risk analysis of this OSD budget driven decision. These concerns were over the pace and magnitude of Program Budget Directives (PBD) in terms of how fast the personnel and supply resources were drawn down in light of the responsibility to maintain safe and secure stewardship of the nuclear assets.

Dr. FLEMING. Did the Commander of AFGSC raise any objections or concerns over consolidating the ALCM mission at Minot AFB?

General KEHLER. The ALCM fleet was consolidated at Minot AFB prior to the standup of Air Force Global Strike Command (AFGSC). Establishing a WSA at Barksdale would be operationally beneficial; however, we have achieved a workable solution to the USSTRATCOM mission by consolidating the ALCM at Minot AFB. This consolidation is due to the fact that the number of ALCMs have decreased; therefore, the initial workload since 2007 has decreased. Accordingly, given the fixed variables of facilities, support equipment, and personnel, the current solution is meeting mission requirements.

Dr. FLEMING. Does STRATCOM concur with the Air Force's decision not to move forward with recertifying the Barksdale WSA?

General KEHLER. Yes, I concur with the Air Force's decision. While two nuclear-certified WSAs would provide us greater operational flexibility, several other issues throughout the nuclear enterprise have higher priority funding shortfalls. I am confident we are able to execute all OPLAN ALCM mission requirements using one ALCM WSA. We have assessed the inherent vulnerabilities and risks associated with operating a single ALCM storage at Minot and I have determined they are manageable through force posturing, force management and planning considerations.

Dr. FLEMING. What mission impact assessments or risk assessments has STRATCOM conducted or participated in to examine the single ALCM location at Minot and whether any planned activities in the next few years will impact the ability of ALCM assets at Minot to support STRATCOM mission requirements? Please provide a summary of those assessments at the appropriate classification level and, if mission impacts or risks are identified, discuss how STRATCOM is mitigating these.

General KEHLER. [The information referred to is classified and is retained in the subcommittee files.]

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