

[H.A.S.C. No. 114-135]

**PRESIDENT OBAMA'S NUCLEAR  
DETERRENT MODERNIZATION PLANS AND  
BUDGETS: THE MILITARY REQUIREMENTS**

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HEARING

BEFORE THE

SUBCOMMITTEE ON STRATEGIC FORCES

OF THE

COMMITTEE ON ARMED SERVICES  
HOUSE OF REPRESENTATIVES

ONE HUNDRED FOURTEENTH CONGRESS

SECOND SESSION

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HEARING HELD

JULY 14, 2016



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U.S. GOVERNMENT PUBLISHING OFFICE

20-822

WASHINGTON : 2017

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# CONTENTS

	Page
STATEMENTS PRESENTED BY MEMBERS OF CONGRESS	
Rogers, Hon. Mike, a Representative from Alabama, Chairman, Subcommittee on Strategic Forces .....	1
WITNESSES	
Haney, ADM Cecil D., USN, Commander, U.S. Strategic Command .....	4
Klotz, Lt Gen Frank, USAF (Ret.), Administrator, National Nuclear Security Administration .....	1
Rand, Gen Robin, USAF, Commander, Air Force Global Strike Command .....	5
Scher, Hon. Robert, Assistant Secretary of Defense for Strategy, Plans, and Capabilities, Department of Defense .....	3
APPENDIX	
PREPARED STATEMENTS:	
Cooper, Hon. Jim, a Representative from Tennessee, Ranking Member, Subcommittee on Strategic Forces .....	42
Haney, ADM Cecil D. ....	58
Klotz, Lt Gen Frank .....	44
Rand, Gen Robin .....	74
Rogers, Hon. Mike .....	39
Scher, Hon. Robert .....	52
DOCUMENTS SUBMITTED FOR THE RECORD:	
By Mr. Cooper:	
Henry Kissinger-Brent Scowcroft op ed .....	94
By Mr. Franks:	
Statements on the importance of the LRSO .....	96
By Mr. Garamendi:	
Former Secretary of Defense William Perry article .....	100
Ranking Member Adam Smith article .....	98
By Mr. Rogers:	
Letter to Secretary of Defense Carter from Senators .....	92
President Obama letter to Senator Alexander .....	91
President Obama message to Senate .....	89
WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING:	
Mr. Zinke .....	105
QUESTIONS SUBMITTED BY MEMBERS POST HEARING:	
Mr. Aguilar .....	118
Mr. Cooper .....	111
Mr. Garamendi .....	115
Mr. Rogers .....	109
Dr. Wenstrup .....	119



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HOUSE OF REPRESENTATIVES,  
COMMITTEE ON ARMED SERVICES,  
SUBCOMMITTEE ON STRATEGIC FORCES,  
*Washington, DC, Thursday, July 14, 2016.*

The subcommittee met, pursuant to call, at 2:33 p.m., in room 2118, Rayburn House Office Building, Hon. Mike Rogers (chairman of the subcommittee) presiding.

**OPENING STATEMENT OF HON. MIKE ROGERS, A REPRESENTATIVE FROM ALABAMA, CHAIRMAN, SUBCOMMITTEE ON STRATEGIC FORCES**

Mr. ROGERS. The House Armed Services Subcommittee on Strategic Forces will come to order. We welcome everybody to our hearing today. It is a hearing titled, "President Obama's Nuclear Modernization Plans and Budgets: The Military Requirements."

I want to thank all of our witnesses for being here and the time it took for them to prepare for this hearing. It takes a lot of time. I know it is aggravating, but it is very helpful to us. And we really appreciate your service to our country, but also the time and energy it took to prepare for this hearing and your making yourself available.

Because of scheduling, we have kind of gotten in a time crunch. So the ranking member and I have agreed to dispense with our opening statements. And we would advise the witnesses that your opening statements will be accepted for the record and ask each of you if you could spend about 3 minutes just summarizing the broad text so we can get to the meat of the hearing, which is really the Q&A.

So our witnesses today are the Honorable Frank Klotz, Administrator, National Nuclear Security Administration; the Honorable Robert Scher, Assistant Secretary of Defense for Strategy, Plans and Capabilities; Admiral Cecil Haney, Commander, U.S. Strategic Command; and General Robin Rand, Commander, Air Force Global Strike Command.

And with that, General Klotz, you are recognized for 3 minutes.

[The prepared statements of Mr. Rogers and Mr. Cooper can be found in the Appendix beginning on page 39.]

**STATEMENT OF LT GEN FRANK KLOTZ, USAF (RET.), ADMINISTRATOR, NATIONAL NUCLEAR SECURITY ADMINISTRATION**

General KLOTZ. Thank you Chairman Rogers, Ranking Member Cooper, and members of the subcommittee. Thank you for the op-

portunity to discuss the nuclear modernization program. This committee's leadership and its steadfast support for nuclear security enterprise have been vital to the Nation's ability to maintain a credible deterrent and a safe, secure, and effective nuclear arsenal.

The nuclear deterrent is a foundational capability of U.S. national security. Although it has been decades since the end of the Cold War, our nuclear enterprise continues to play an essential role in preventing conflict and deterring attacks upon the United States, our Armed Forces, and our allies and friends, in an increasingly complex and unpredictable international environment.

We must, therefore, maintain nuclear deterrent capabilities, not only for ourselves, but also for our allies and partners around the world. As NATO [North Atlantic Treaty Organization] reaffirmed just last week in its Warsaw Summit Communiqué, and I quote, "The strategic forces of the Alliance, particularly those of the United States, are the supreme guarantee of the security of the Allies."

Now following direction provided by successive Presidential budget requests and in congressional legislation, the Department of Energy and the NNSA [National Nuclear Security Administration] are currently extending the life of four of the weapons in our stockpile and modernizing the facilities and infrastructure at our national security laboratories and production plants.

The scope, budgets, and schedules of the LEP [life extension program], the infrastructure modernization, and the DOD [Department of Defense] delivery systems have been fully integrated and coordinated in a tightly coupled plan.

As a result of consistent funding provided by Congress and the significant improvements NNSA has made in program management over the past 2 years, all of our LEPs are on schedule and within budget.

However, we are long overdue for an updated, smaller, safer complex that will meet military requirements. I can think of no obstacle that poses a greater risk to the long-term success of our work than the current state of NNSA's aging infrastructure.

To address immediate mission needs, we have begun major investments in the capabilities identified in the Nuclear Posture Review, including building a new uranium processing facility in Tennessee and replacing the chemical and metallurgy research building at Los Alamos in New Mexico.

We are also pursuing third-party financing and public-private partnerships to complement traditional line item capital construction projects as a faster, and in some cases, more effective and efficient means of providing appropriately sized and modernized facilities for our 21st century operations and workforce.

We believe greater use of such approaches should continue to be aggressively explored, and we appreciate this committee's strong endorsement of that view.

In closing, America's nuclear deterrent remains a foundational capability for the security of the United States and its allies. NNSA will continue to assure the stockpile remains safe, secure, and effective without nuclear explosive testing. But achieving our plans for tomorrow's stockpile requires adequate resources, balanced investments, and a constancy of purpose.

Thank you for the opportunity to address you this afternoon, sir.  
[The prepared statement of General Klotz can be found in the Appendix on page 44.]

Mr. ROGERS. Great.

No pressure, Mr. Scher. You are recognized for 3 minutes.

**STATEMENT OF HON. ROBERT SCHER, ASSISTANT SECRETARY  
OF DEFENSE FOR STRATEGY, PLANS, AND CAPABILITIES,  
DEPARTMENT OF DEFENSE**

Mr. SCHER. Chairman Rogers, Ranking Member Cooper, and distinguished members of the subcommittee, thank you for the opportunity to testify today, and I will dive right in.

President Obama's approach to reducing nuclear dangers has consistently included two key pillars: working toward a world without nuclear weapons, and maintaining effective deterrence along the way.

Because we cannot responsibly count on achieving global disarmament before the U.S. arsenal ages into obsolescence, we must proceed with modernized replacements to maintain our nuclear deterrent for us and our allies.

In multiple reviews, the administration concluded that stable deterrence is best provided by sustaining our nuclear triad and dual-capable aircraft [DCA]. The triad and DCA provide the credibility, flexibility, and survivability to meet and adapt to the challenges of a dynamic security environment without requiring us to mirror every nuclear weapon systems others might employ.

The need to sustain effective deterrence and strategic stability drives the requirement to modernize U.S. nuclear forces. And we must make investments now to have replacements ready when needed.

Contrary to frequent mischaracterizations, we are not spending a trillion dollars on nuclear modernization. The modernization costs, spread over 20 years, will be an estimated \$350 billion to \$450 billion.

While not a small amount of money, as you know, the total defense budget in fiscal year 2016 alone was over \$580 billion. The cost for nuclear modernization is substantial, but it is not unreasonable for what Secretary Carter has called the bedrock of our security.

Our modernization plan is also consistent with the President's Prague agenda. It directly supports U.S. nonproliferation and disarmament objectives by enabling reductions in our arsenal while continuing to assure allies that they do not need their own nuclear capabilities.

Claims that U.S. modernization signals a nuclear arms buildup or a renewed arms race do not fairly characterize our activities and those of other countries.

Recapitalizing the triad will preserve existing military capabilities for preventing both large-scale and limited nuclear attacks, even as threats evolve. To deter massive nuclear attack, the United States must maintain a force that is invulnerable to a disarming first strike.

Strategic stability requires a solid foundation that is not susceptible to any single point of failure, and each leg of the triad makes its own unique and critical contributions.

While a massive nuclear strike would bring the greatest devastation imaginable, the more acute threat might be a limited attack aimed at coercing, rather than destroying, the United States or its allies.

An adversary faced with losing a war of aggression might use a small number of nuclear weapons against U.S. forces or allies in an attempt to force capitulation. Our unwavering commitment to the security of our allies should make it clear that this would be a grave miscalculation destined to fail.

Nuclear deterrence and disarmament share the same ultimate goal of reducing the risk of nuclear war. As we continue to work towards a world without nuclear weapons, effective nuclear deterrence is an imperative we must not ignore.

Thank you and this committee's support for that effort.

[The prepared statement of Mr. Scher can be found in the Appendix on page 52.]

Mr. ROGERS. Admiral Haney, you are recognized.

**STATEMENT OF ADM CECIL D. HANEY, USN, COMMANDER,  
U.S. STRATEGIC COMMAND**

Admiral HANEY. Good afternoon, Chairman Rogers, Ranking Member Cooper, and distinguished members of this committee. I am honored to be here today, not only to be with these professionals, but representing all the sailors, soldiers, airmen, and marines and civilians that provide strategic deterrence day in and day out.

These professionals represent our most precious resource and deserve our unwavering support. As a result of their efforts today, our Nation's strategic nuclear deterrence force remains safe, secure, and effective and ready, and strategic stability is sustained.

That said, our capabilities as a whole have lasted well beyond their designed service life. And it is crucial that we modernize our strategic deterrence capabilities, which underpin our national and global security.

You know the threat. You have had many briefs, including with me, over countries like Russia, China, North Korea, in their pursuit associated with nuclear capabilities.

Comprehensive strategic deterrence and assurance and escalation control require a long-term approach, and it is far more than just nuclear weapons and platforms.

The President's budget for 2017 provides a great balance between national priorities, fiscal realities, and begins to reduce some of the risks we have accumulated because of deferred maintenance, sustainment, and modernization. This budget supports my mission requirements.

But let me be clear, there are no margin to absorb new risk. When you look at our triads, we must move forward with replacement programs for our intercontinental ballistic missile programs.

The *Ohio* replacement program is my number one priority, due to the fact that we already have a degradation in that capability over some years due to delays in execution of that program.



Similarly, our bombers provide us the air-delivered nuclear weapons, which offer unique strategic deterrence value associated with air capability that provides both strategic and extended deterrence. And our stockpile is safe, secure, and effective, but it is the oldest it has been.

And as a result, we need to continue to move forward life extension programs and our strategy called the 3+2 warhead strategy. That is a long-term approach.

At the end of the day, we must ensure that no nuclear-armed adversary can think that they can escalate their way out of a failed conflict. They must perceive that restraint is the best course of action.

Thank you, and I look forward to your questions.

[The prepared statement of Admiral Haney can be found in the Appendix on page 58.]

Mr. ROGERS. Thank you, Admiral Haney.

General Rand, you are recognized.

#### **STATEMENT OF GEN ROBIN RAND, USAF, COMMANDER, AIR FORCE GLOBAL STRIKE COMMAND**

General RAND. Chairman Rogers, Ranking Member Cooper, members of the subcommittee, as I complete my inaugural year as the commander of Air Force Global Strike Command, thank you for allowing me to appear with my United States Strategic Command boss, Admiral Haney, to represent our striker airmen.

As you know, Air Force Global Strike Command was created to provide a focus on the stewardship and operations of two legs of our Nation's nuclear triad while also accomplishing the conventional global strike mission. A key to our continued success will be our ability to modernize, sustain, and recapitalize our forces.

Therefore, it is imperative we be flexible enough to operate seamlessly in a world that continues to rapidly change. Potential adversaries continue extensive, some claim unprecedented, modernization efforts across the full spectrum of their nuclear capabilities.

Therefore, Air Force Global Strike Command's mission set needs to continue to evolve and grow as we strive to provide highly effective combat forces to our Nation's combatant commanders.

Hence, my focus is to make sure Air Force Global Strike Command is rightsized with our manpower and resources, while balancing necessary modernization and recapitalization programs.

I look forward to addressing any questions you have about our modernization plans for the Minuteman III ICBM [intercontinental ballistic missile] system, our bomber fleet, the air-launched cruise missile, the UH-1N helicopter, our current B61 weapon series, our nuclear weapon storage areas, and our nuclear command and control communications weapon system.

Finally, I am prepared to offer my opinion on the consequences to our Nation's and our allies' security if these already long-overdue modernization efforts are not carried out according to their scheduled timelines.

Again, thank you for the opportunity to appear before this committee to highlight the need for modernization across Air Force Global Strike Command. I stand ready to address your questions.

[The prepared statement of General Rand can be found in the Appendix on page 74.]

Mr. ROGERS. Thank you, General.

Thank all of you for your outstanding statements. I want to start the questioning.

Admiral Haney, I want to ask you about the overarching strategic picture in the national security environment that our nuclear forces are operating within and trend lines that you see right now.

You have been doing this a long time. And as deputy commander of Strategic Command around the time when our current nuclear consensus was forged in the Strategic Posture Commission, the Nuclear Posture Review, the New START [Strategic Arms Reduction] Treaty, and the commitment to President Obama's nuclear modernization plan.

So you have seen where we were in 2009 and certainly have a good sense of where we are now, and I think where we are heading, based on the conversations I have had with you.

So give us your professional military opinion. What do you see as the trend lines in our national security and our strategic picture since 2009? And are things getting better or worse?

Admiral HANEY. Chairman, thank you for the question. You know, as I look over this time period, and it is unfortunate that we see where our relationship with Russia has occurred, starting with that as one of our five challenges you often hear us talk about, Russia, China, North Korea, Iran, and violent extremists.

Russia has not only modernized a lot of their capability in terms of the nuclear part of the business, that includes not just silo base intercontinental ballistic missiles. They also have mobile base intercontinental ballistic missiles, which means they can move them around—harder to find.

They also have modernized their submarine program. They are continuing to do so. And they have also modernized some of their air capability, and continue to do so, including air-launched cruise missiles, both conventional and nuclear variants.

Russia has been working on modernizing both conventional and nuclear capability, as well as cyber and counterspace capability. And capability is one thing. It is what they do with it and how they talk about it is just the other thing.

The other piece that has changed is the provocative nature of statements that have been made by Russian leaders associated with that. And the display of their capabilities, such as long-range strategic aircraft flights in other areas around the world without transponders on and those kind of things, what I would say is other provocative kind of actions that when you add them all together it is not in a good place.

And I am hopeful that that will improve, associated with our whole-of-government efforts, which is a big part of deterrence going forward. But that is Russia.

China, while you are looking at some of the activity in the South China Sea, has also been a country that has also developed and modernized their nuclear and strategic capabilities in the same areas: nuclear, space, and cyber. And in particular in the nuclear piece, they are not as transparent.

When you look at Russia and the United States, we have the associated treaties, such as New START treaty, that allow us transparency and visibility, which is a good thing in terms of those weapons that come under that treaty.

It doesn't cover all the nonstrategic nuclear weapons that Russia has, but in China's case, we don't have such a thing. So we don't have the transparency, in terms of not just what they have but in the direction in which they are going.

And then, of course, North Korea has been in the news quite a bit here in terms of their aspirations and associated tests, both nuclear tests, missile tests, and what have you. Even recent at-sea tests that shows that piece. Those are the things that I have seen specifically change.

In Iran's case, of course, having the Joint Agreement there has put a change, in my opinion, in the other direction by at least giving us leverage and also some visibility in terms of what is going on in that nation.

While they still have other activities, a lot of testing going on with missile programs and what have you, from a nuclear standpoint there is a mechanism now. And that piece is different as well.

So in the balance of things going through those particular areas in a succinct manner, clearly in an unclassified form, but it is something that we have to balance in terms of maintaining strategic stability, given those directions and developments that those nations have been after.

Mr. ROGERS. Well, thank you. As you and I have discussed, there are some outside advocacy groups who have been calling for changes in our nuclear programs and policies, as well as our modernization plans. More specifically, there is discussion and pressure on this administration to either delay or cancel the LRSO [long-range standoff weapon] and GBSD [ground-based strategic deterrent]. Can you share your thoughts on whether that would be a wise course of action or not?

Admiral HANEY. First, I would say here, as I mentioned in my opening statement, I am very pleased with the President's budget for 2017 that is over here, in terms of meeting the direction and efforts here to modernize where we need to, not just the nuclear weapons, but all the way through the national nuclear command and control capabilities, sensing apparatus, and what have you.

From my perspective, we need to modernize those things, and the future for our intercontinental ballistic missile program is very important. So moving forward with ground-based strategic deterrent, GBSD as we call it, is paramount in terms of the capabilities we need for that part of the triad.

And from an air leg, you mentioned the long-range standoff cruise missile. That missile, too, is very important in terms of having an effective air leg.

In order to have comprehensive deterrence, this requires us to have a complex problem for an adversary. And consequently, I would say today we really need to make sure our triad is a credible capability. Not just today, but well in the future, and that is why those programs are so important.

Mr. ROGERS. Great.

General Rand, the same question. But I would ask, in addition to discussing whether you think it is wise to postpone or delay or to terminate the LRSD or GBSD, these same advocacy groups are arguing that in the alternative—and I make the reference because you made reference to it in your opening statement—that we should instead just try to further upgrade or modernize the Minuteman III. So share your thoughts on those—

General RAND. Yes, sir. Well, I welcome that opportunity. I would break it down into two areas. I would look at weapon systems, and there are two issues I am concerned with, reliability and survivability. In reliability, we get the greatest vote in that. In survivability, enemy and potential adversaries have a vote in that.

Our current systems today are becoming increasingly difficult to remain reliable. They are getting old. And it is harder. And certainly, with the enemy's vote in the increasing A2/AD [anti-access/area-denial] environment that we are going to be operating in if we use nuclear weapons and/or our conventional weapons, it is much more difficult.

And so GBSD and LRSD, in my opinion, are very, very important that we go to that so that we can make sure that if we ever use these weapons as intended, we have a high probability of success that they will hit their intended target. And so delaying those would be of great concern to me.

Mr. ROGERS. What about the efficacy of just upgrading the Minuteman III as opposed to replacing the GBSD?

General RAND. Sir, I think that is unwise. I think that for many reasons the Minuteman III now is coming up on its 50th year in service. It is difficult. There are efficiencies to be gained with a new system. A lot of efficiencies with manpower, with command and control, with the reliability, and certainly then the survivability aspect of that weapon.

And from a cost savings, I know we talked about there will be some costs associated with this, but over the life span of the program we will make a lot of efficiencies that will start getting return on the dollar when we go to this in terms of manpower, the maintenance requirements and the command and control of our facilities that we have. So there is a lot of benefits that will come with that over the course of the life span.

Mr. ROGERS. Great.

The Chair recognizes the ranking member for any questions he may have.

Mr. COOPER. I, too, would like to welcome the distinguished witnesses, and I will be very brief. I have two questions on topics that are coming up in conference.

First, Admiral Haney, is there any military requirement to keep the W84 cruise missile warhead that has been slated for dismantlement prior to 2009—that had been slated for dismantle prior to 2009?

Admiral HANEY. Congressman Cooper, I don't. You know, once a piece goes into the retirement listing, they are—to me, it is ready for disposal. And those associated weapons, like a W84, that are there, to my mind, should be disposed of.

The only savings of, you know, as we look at our inactive stockpile as a whole, is to ensure we have the requisite parts and pieces,

if you will, in case we have a technical or a geopolitical issue. But the W84 it is not one of those from my standpoint.

I would think it may be good to ask General Klotz some of the question from an NNSA perspective.

Mr. COOPER. General Klotz, do you have a viewpoint on that?

General KLOTZ. Mr. Cooper, are we going to have a classified session after this? Is that still—

Mr. COOPER. Yes.

General KLOTZ. I would like to take that to a classified session, if I could.

Mr. COOPER. General Klotz and Admiral Haney, regarding the NDAA [National Defense Authorization Act] that the House passed, the provision regarding restricting dismantlement, what are the consequences for the life extension programs if we restrict dismantlements the way the House-passed NDAA suggests? Does that also have to be held for classified?

General KLOTZ. No, that doesn't. I would be very happy to address that, Congressman Cooper. As you know, the administration had requested in the President's fiscal year 2017 budget request that we increase the funding available for dismantlement.

We have been spending roughly about \$50 million a year to do dismantlement, which involves largely disassembly work at the Pantex Plant in Amarillo, Texas, and the Y-12 Plant in Oak Ridge, Tennessee. We wanted to increase that to \$67 million to accelerate the process by which weapons that have already retired, are already in the dismantlement queue, would be dismantled.

Part of it was to live up to a pledge that Secretary of State Kerry made at the Nuclear Nonproliferation Treaty Review Conference in New York last year, that we would accelerate dismantlement.

We also saw it as an advantage in the sense that, one, it would allow us to hire a lot more technicians at both Pantex and at Y-12. We estimated about 30 to 40 at Pantex and about half that amount at Y-12.

Now, while those people would initially be trained to do dismantlement, in order to do that work they would have to get the necessary security clearances and some of the basic skills associated with working with nuclear weapons so that we could also, at some point, use them for other key and critical work associated with life extension programs, surveillance, and other sorts of things.

So we continue to think that that is an important thing for the country to do. And it is an important thing for NNSA to be able to do.

Mr. ROGERS. The Chair recognizes the gentlemen from Colorado, Mr. Lamborn, for 5 minutes.

Mr. LAMBORN. Thank you, Mr. Chairman, and also thank you for holding this hearing. And I thank all of you for how you are serving our country.

There is a lot of chatter out there from some disarmament advocates pushing a no-first-use policy. However, President Obama considered and rejected that type of policy in both the 2010 Nuclear Posture Review and the 2013 nuclear employment guidance.

So, Secretary Scher, do you agree that before we would ever adopt—and I would hope we wouldn't—but before we would ever

adopt a no-first-use policy, we would want to consult with allies like NATO allies or Asian allies such as Japan and South Korea?

Mr. SCHER. Certainly. I think there is no question that one of the key pieces to our declaratory policy is not just deterrence against conflict with the U.S., but protection of our allies. And hence, I would imagine and could not imagine that we could change the policy without talking to our allies and friends who would be affected by this.

Mr. LAMBORN. And there are no such discussions taking place currently?

Mr. SCHER. No such official discussions are taking place. There has been no decision within the administration to change the no-first-use policy.

Mr. LAMBORN. Thank you. That is reassuring.

Admiral Haney, when the Nuclear Posture Review says that the U.S., quote, "Will work to establish conditions under which such a policy, the no first use policy, could be safely adopted," unquote, has the U.S. come any closer to achieving those kinds of conditions that would allow for a safe adoption of a no-first-use policy?

Admiral HANEY. Congressman, in terms of the conditions that would be required, I am not at a good position to list what those are here in this open hearing. I would just say that we know the current policy has served us well over many years and that it will get—you know, if there is some movement to change that, that would require some scrutiny to make sure we are not going to impact strategic stability at large by such a move.

Mr. LAMBORN. Well, then could you then comment on how such a policy, were it ever to be adopted, would be a limit on a future Commander in Chief in maybe an unacceptable way?

Admiral HANEY. Well, I would just generalize and say that, you know, as I look at part of my job as commander of Strategic Command and what I am responsible for in developing plans and what have you, the real key for me is making sure I can maximize Presidential decision space and options. So that is sort of the approach that I would put globally to most of these things.

Mr. LAMBORN. And what would be your best military professional advice regarding whether the U.S. should adopt a no-first-use policy or not?

Admiral HANEY. Well, given the earlier question that Chairman Rogers asked associated with where our strategic conditions around the globe, that I outlined, I would want to ensure that we had some serious deliberations in terms of trying to balance how that would help, if you were to change that, in terms of its impact on strategic stability.

So, you know, I only have a personal advice in this regard that we need to be very careful given the directions and developments that we see around the world, that we do everything in our power to maintain strategic stability.

Mr. LAMBORN. Okay. And would anyone else care to comment on the desirability or lack of desirability for a no-first-use policy?

Secretary Scher.

Mr. SCHER. I think the decision was carefully considered a number of times, as you noted. And I think the administration currently feels very comfortable with where that is.

Of course, this President and any future President should always take a look at the environment, understand what capabilities we bring to deterrence, what the security environment looks like, and one would hope that any decision would be made based on what increases our strategic stability.

And certainly this President could make a decision one way or the other, as he already has up to this point. And a future President will also want to, I would assume, look at all those conditions and make a determination for him or herself.

Mr. LAMBORN. Okay. Thank you all for your answers.

Mr. Chairman, I yield back.

Mr. ROGERS. I thank the gentleman.

The Chair now recognizes the gentleman from California, Mr. Garamendi, for 5 minutes.

Mr. GARAMENDI. Thank you Mr. Chairman, and thank you for the hearing. And gentlemen, thank you for all of your service, your thoughtful action and work on these issues. I want to get a couple of numbers out of the way right away.

Mr. Scher, you said the total cost over 20 years is \$350 billion to \$450 billion. And the Congressional Budget Office says that for the next 10 years, it is \$348 billion. These numbers don't quite coincide.

Could you further explain why you made the 20-year estimate at a range that might even be lower than the 10-year estimate from the Congressional Budget Office?

Mr. SCHER. Sure, Congressman. I can't speak to the CBO's numbers. The \$350 billion to \$450 billion is what we believe, and, you know, we have to make estimates at some point when we are looking out that far, over the course of 20 years, it will take to recapitalize the three legs of the triad.

So what it takes to modernize each one of the legs. That includes things such as the *Ohio* replacement program submarine, LRSD, the GBSD replacement of the Minuteman, and also the B-21. So it is those particular modernization acquisition programs.

Mr. GARAMENDI. Does that also include the weapons—

Mr. SCHER. It includes—

Mr. GARAMENDI [continuing]. Like bombs and—

Mr. SCHER [continuing]. It includes the deliveries. It does not include the warheads.

Mr. GARAMENDI. Okay. I think what we need here, because there are obviously some significant difference in estimates, and for some time we have been asking for serious estimates beyond the 10 years. And apparently you have that available. So if you could make that available to us it would be helpful because this is an ongoing debate as to what this is going to cost.

Mr. SCHER. And we have had this conversation before, and I will go back to look at it and providing as clear—

Mr. GARAMENDI. Well, sure.

Mr. SCHER [continuing]. The greatest clarity as I can from the people who do the budget.

Mr. GARAMENDI. No, you just said that you just gave us great—you—

Mr. SCHER. And I can defend the \$100 million difference, the estimates.

Mr. GARAMENDI. Yes. Well, we will give it to you in writing. And if you would please respond in as great as detail as you have available that would be helpful.

Mr. SCHER. Of course.

Mr. GARAMENDI. In your testimony you also talked about to deter massive nuclear attack the United States must maintain a force that is invulnerable to disarming strength. What is that force? Is it all of it or is it part of it?

Mr. SCHER. So it needs to be invulnerable to disarming strike.

Mr. GARAMENDI. "Invulnerable to a disarming strike."

Mr. SCHER. Right. So the concept behind the statement is the idea that we do not want to have an arsenal that any of our potential adversaries would think that they can get rid of, that they can eliminate on their own in a first strike.

Mr. GARAMENDI. Okay. So therefore in your view each of the three legs of the triad is vulnerable—

Mr. SCHER. I would—

Mr. GARAMENDI [continuing]. To a first strike. Is that correct?

Mr. SCHER. The submarine force, currently I would ask the operational folks to weigh in, but I think some are more vulnerable than others. Certainly there are known locations for certain pieces. There are unknown for others.

Mr. GARAMENDI. And Admiral Haney, are the submarines vulnerable to a first strike, all of them, part of them, new, old?

Admiral HANEY. Congressman Garamendi, the only time a submarine is vulnerable is when it is in port.

[Laughter.]

The rest of the time when it is underway it is underwater, stealth conditions, not vulnerable.

Mr. GARAMENDI. But is it not our strategy to always have more than one underway?

Admiral HANEY. That is correct, sir.

Mr. GARAMENDI. Therefore they are not vulnerable to a first strike?

Admiral HANEY. That is correct. We—

Mr. GARAMENDI. How does that work, Mr. Scher, from your statement? Don't answer. That is just rhetoric on my part.

I think the rest of this should be in closed session, so we will go there. Thank you.

Mr. ROGERS. I thank the gentleman.

The Chair now recognizes the gentleman from the great State of Alabama, home of the 2016 national football champions, Mo Brooks for any questions he may have.

Mr. BROOKS. I love that introduction.

Secretary Scher, this committee has heard that the administration is considering extending the New START treaty with Russia for an additional 5 years, even though the treaty limits don't even take effect until 2018 and don't expire until 2021.

So this would be extending a treaty 5 years early and pushing expiration out until 2026, which is beyond the limit of the next President's two possible terms. If true, this action drastically limits the options for the next two Presidential terms.

For instance, he or she would have no leverage to get Russia to include its vast stockpile of tactical nuclear weapons in an arms



control regime. Reducing the number of Russia's thousands of tactical nuclear weapons must be a priority as the Senate said when it ratified the New START treaty.

Russia's conduct under Mr. Putin is remarkable, violating the INF [Intermediate-Range Nuclear Forces] Treaty in multiple ways, failing to comply with prohibitions on chemical and biological weapons, invading and annexing parts of the Ukraine, threatening NATO with nuclear weapons. The list is long.

Tell me, is the Obama administration going to seek to extend the New START treaty before its term is up in January?

Mr. SCHER. So Congressman, I do not know the answer of whether or not that the administration will make that determination. Certainly it is an option that is given in the treaty, but it is also not something that must be taken up.

Mr. BROOKS. Who in your judgment would know the answer to that question?

Mr. SCHER. In the end it will be the President that gets to make a determination of whether or not he believes it is in the United States interest to extend the treaty as allowed for in the treaty.

Mr. BROOKS. Anyone between you and the President who would also have knowledge of that and have the answer?

Mr. SCHER. There are ongoing discussions, as you have heard, but I really am not at liberty to talk about ongoing discussions before decisions have been made.

Mr. BROOKS. We know that the Obama administration had the Intelligence Community put together a National Intelligence Estimate [NIE] prior to the New START treaty. This is standard practice so we know what we are getting into. Has the National Intelligence Estimate been put together for a possible extension to the treaty?

Mr. SCHER. I don't know that one has. I will tell you, however, that the Intelligence Community is consulted before any decision of any type like this, whether or not tasked in a formal NIE or not.

Mr. BROOKS. Secretary Scher, let me move to a separate but very much related topic. The rumor mill is swirling, which is often the case on Capitol Hill, thanks to the small in number but very vocal disarmament advocates in Washington. You can help us put a rumor to rest.

In December of last year Under Secretary of State Rose Gottemoeller testified to our subcommittee that the administration would not seek a prohibition on nuclear testing through a United Nations Security Council resolution. There has been talk of pursuing that avenue to skirt the United States Senate, which is unlikely to ratify the Comprehensive Test Ban Treaty any time soon.

Under Secretary Gottemoeller said to a suggestion that they might pursue that option, quote, "I have been in constant battle with our NGO [non-governmental organization] colleagues over this issue. We do not agree with this notion," end quote. And when asked for assurance that this would be pursued she responded, quote, "Correct," end quote.

Can you assure us again that this path is not being considered and will not be pursued by the administration?

Mr. SCHER. Again, I can't disclose what is going on, but I can assure you that there is—understanding I was coming before you and

thinking this might come up I actually talked to the Under Secretary Rose Gottemoeller and she assured me that there is nothing that she is thinking of. She stands by the statement—that would take away the prerogative of the Senate for ratifying treaties.

Mr. BROOKS. Thank you, Mr. Scher.

I yield back.

Mr. ROGERS. I thank the gentleman.

The Chair now recognizes the gentleman from the great State of Washington, Mr. Larsen, for 5 minutes.

Mr. LARSEN. Home of the 2015 rowing champions, the University of Washington Huskies.

[Laughter.]

Maybe we don't play football as well as you down there in Alabama, but it is not the only sport, believe it or not.

[Laughter.]

Secretary Scher, you might know that some of the conversation that we have in this committee, especially on this side of the aisle, goes to the affordability of the modernization.

And in your testimony you, in your written testimony, said that the trillion-dollar number is a mischaracterization. And I guess my question to you, though, is where do you think it comes from, first?

Second, if after 20 years you are at \$450 billion and then we really start to spend money over those next 10 years, I can see a world, in my mind, where there is a trillion dollars over the next 30 years. I don't know that I will be here. I know you won't be here, sitting here.

[Laughter.]

Maybe somewhere else, but not sitting here perhaps.

So in your view where does this come from? Because the main issue, and General Rand in his verbal testimony at the end basically invited us to ask him. And you are great. I like you, but basically invited us to ask you how great nuclear modernization is.

I think it is great. It is greatly expensive as well. And the debate is less about whether or not it is needed.

It is more about you are leaving us a gigantic obligation, what everyone loves, but if I go to the Readiness Subcommittee they have got everything they love over there. Or they have things they love. And we go to the other subcommittees they have got things they love, too.

And pretty soon we don't have a \$580 billion defense budget. It will be much larger because everybody gets what they love and they don't want us to make any choices.

So what are you going to—the number comes from and what are you all doing to convince, well, maybe not all of us, but certainly me that you are prioritizing at all? Because I don't think that you are.

Mr. SCHER. So thank you, Congressman. I can't tell you where the number comes from. Obviously it is a big number and it makes a splash, and I think, you know, depending on how you want to calculate costs for how long, you can get to any number of numbers that you wish.

What I know of is that the modernization piece is what I said. And again, it is a pretty big range given that we have so much un-

certainty out into the out-years, which is why it is hard for us to always pin this down.

There also are additional costs no doubt. One of the costs is the weapons themselves, the warheads. One of the costs is sustaining these pieces, the operations and maintenance piece. So I am sure you can piece together many different expenses on this.

And, you know, all of these are known for today but not known for tomorrow. For example, fiscal year 2017 sustainment of our force is approximately \$12 billion a year. That is for the entire force.

One would imagine, and what acquisition people tell me is when you have a new system it actually costs you less to maintain, although overall costs will go up as well.

So I don't know what that number is going to look like out in the future, but that is sort of another piece to the cost is those sustainment costs.

In terms of affordability, I have said it before and I will be forced to repeat it, it is about prioritization. We in the Department of Defense feel that this is such a critical mission that we must prioritize it at the top and that in fact we will look to take risk elsewhere because it is so important that fundamentally we have nuclear deterrence covered appropriately. And we believe, and the administration has determined, that the triad is the best way of doing that.

It does mean that there are costs in other places, and we always present what we have as a budget that is balanced. It gives me the opportunity to say that sequestration would, of course, throw almost all of this up into the air and to great risk across the board.

So we hope that we can get out of the situation where we are worried about a \$100 billion cut based on sequestration that we had not programmed for and would have to go back and take a look at the full range. But even then, your priorities are affordable if they are your top priorities.

Mr. LARSEN. Well, I guess, I have got, you know, 30-some seconds left. And maybe the problem is with the committee because this subcommittee thinks we are first among equals in the money we should get and the other six believe that as well.

But, you know, we don't have that debate. Everyone avoids that debate on this committee, on the whole committee, that everybody does get what they want.

But if we are the first among equals and what I heard you say at the top of the Department, there is a commitment to the nuclear modernization. You didn't say first and foremost, but you almost said it. Then maybe we need to get there, too, but I don't know that we will.

You know, I have been on this committee 16 years and I always said before the most dangerous thing to give the Department is everything it wants because there are no priorities. And the second most is not giving it enough because then you are not doing all the right things. And we haven't found that balance here.

So happy vacation, committee.

[Laughter.]

Mr. ROGERS. I thank the gentleman.

The Chair now recognizes the gentleman from Utah, Chairman Bishop, for any questions he may have.

Mr. BISHOP. I don't get any State accolades here?

[Laughter.]

Mr. ROGERS. Oh, the great State of Utah, home of the Utes. How is that?

Mr. BISHOP. That is good enough. That is good enough.

General Rand—

Mr. LARSEN. PAC-12 baseball champions.

Mr. ROGERS. What is a Ute, by the way?

Mr. LARSEN. PAC-12 baseball champions, Rob.

Mr. ROGERS. National baseball champions.

Mr. LARSEN. PAC-12—

Mr. BISHOP. Thank you. They are still the Utes, yes.

General Rand and Admiral Haney, I appreciate you being here. Let me—help me make sure I have got this right. The Air Force did conduct an analysis of alternatives on the ground-based strategic deterrent program.

And as I understand, you looked at a simple life extension of the current Minuteman III and the results were—and I think I got out of it you wouldn't actually save any money. And secondly that the military effectiveness requirements would not be there, assuming the adversary continues on their present defensive capability improvements.

So let me ask you, General and then Admiral, why won't this actually save money? Why won't it meet military requirements?

General RAND. Sir, when we looked at the life extension over a 50-year period, which is fair to look at for a Minuteman III, the study revealed it would be in a—\$160 billion.

For the GBSD as we are working our requirements and what we feel our best gouge in our analysis is we can do that same period of time at \$159 billion and then the efficiencies we will gain in terms of manpower saving, security forces, the command and control, the reduction in some of the facilities that we need, not having to go out and do the maintenance on some of the launch control centers that we have to do, there will be in that same period of time additional savings.

Again, you know, writing checks that you can't cash yet, but we are thinking up to \$20 billion over that same period of time.

Mr. BISHOP. All right. And the second—

General RAND. And the GBSD—

Mr. BISHOP [continuing]. Part of that was if you just simply extend the Minuteman III. That does not meet our defense capabilities, right?

General RAND. No, sir. And what that doesn't do, the Minuteman III, and this is my key point is it doesn't address the survivability piece. If that weapon is used and if we are not willing to use it then why have it? If that weapon is used to be a deterrent for this Nation, then it needs to have a high probability that it will get to the target that it is intended for.

Mr. BISHOP. All right. Well, thank you.

And Admiral, let me ask a slightly different question then because I think you got the answer right there. If the Minuteman III then is advanced in aging and we stick to the current schedule for

the GBSD program, what would be the consequences if that GBSD program then is delayed?

Admiral HANEY. Congressman, if that program is delayed it really puts one leg of the triad at significant risk as we go forward from, as was stated, from a reliability standpoint as well as we continue to test, which we have to.

And very important as the system matures to keep your testing program under way, that the number of missile bodies that we will have will also go below my requirements. And then finally we have age-out problem associated with the rocket engines themselves as we go forward.

So when you add all that together it puts the strategic stability and our deterrence capability at significant risk if we were to lose a leg of the triad like that.

Mr. BISHOP. Okay.

And then let me go to Secretary Scher if I could. We still have not seen a request for proposals [RFP] for the first phase of this program, even though I think this committee was assured that that was going to happen in April.

Why do we continue to see a delay in Milestone A decisions to proceed with this program, if indeed that is such an important element to do that?

Mr. SCHER. The Department of Defense and the acquisition side that is looking at this continues to go through this process. They are looking to get out an RFP after the DAB [Defense Acquisition Board] in Milestone A, which I am told is in early August.

And the acquisition professionals I spoke to said that they believe this is along lines with normal practice, but are absolutely looking to move this forward as soon as possible. And we have money in the budget to go forward with this when we get through Milestone A.

Mr. BISHOP. So they recognize that this was scheduled to be done in April and what is this now, almost August. And it might be done in August.

Mr. SCHER. Yes, Congressman.

[Laughter.]

Mr. BISHOP. Well, it seems to me that there is some holdup in a desk at maybe the Under Secretary for AT&L [Acquisition, Technology and Logistics]. Is that basically what is going on?

Mr. SCHER. Honestly, sir, there is a reason I am not an acquisition professional. And I don't know the answer to that. But they have told me that they are moving forward and expect it to be done in August.

Mr. BISHOP. Well, you know, this committee is considering Senate proposals to dismember the AT&L organization, and it doesn't really help us to support the continued existence when necessary programs seem to be delayed and not necessarily appropriately delayed or not having a good reason for it.

And I am over by 7 seconds. I apologize for that. I yield back to the chairman from the great State of Alabama that does have a mediocre football team that lost to Utah in the last bowl game we were together. But other than that—

[Laughter.]

Mr. ROGERS. Roll Tide.

[Laughter.]

The Chair now recognizes the gentleman from the great State of Louisiana, home of the LSU [Louisiana State University] Tigers, Dr. Fleming for 5 minutes.

Dr. FLEMING. Thank you, Mr. Chairman, and again, thank you General Rand and Admiral Haney for being here and the others, General Klotz.

Let us talk about a statement made by former Chief of Staff General Welsh. He said that if he could comment on the weapon station facility recapitalization programs in terms of timeline of what can we expect for the future, General Welsh indicated that Barksdale Air Force Base would begin in fiscal year 2018 but he later explained to me that the program would slip 1 year to fiscal year 2019.

So how confident are you that the weapon storage facility is on track in terms of technical solutions and the budget? And what do you need from this committee to stay on track?

General RAND. Sir, I will take that one. I think that that is a very fair question. The complicating factor with the Barksdale is that the WSF, that is what we will be calling them, the weapons storage facilities, for bombers is more complicated than for it is for our ICBMs.

And we didn't want to come out the chute and have Barksdale be the first one we do—

Dr. FLEMING. Yes.

General RAND [continuing]. Because it is going to be more of a technological challenge for us. And so we wanted to use the one at Malmstrom first and make sure—not that we would fail there. We are not going to fail, but that we didn't get in over our head before we went to Barksdale. And that was the reason to go to 2019.

We are on track to meet that and there are dollars for that. It is in the FYDP [Future Years Defense Plan]. I am very confident that is a top priority, why I mentioned in my statement one of our priorities is the WSF—

Dr. FLEMING. Right.

General RAND [continuing]. Recapitalization and modernization.

Dr. FLEMING. Yes.

General RAND. And I will keep you apprised of—you personally—

Dr. FLEMING. Yes.

General RAND [continuing]. I will keep you apprised of any changes to any timelines.

Dr. FLEMING. Yes. I appreciate that and all that is all very logical. I just wanted to make sure we are on track, remain on track, and there are no other complicating factors. Okay.

Again, for Admiral Haney and General Rand, there has been sufficient discussion as to whether or not the Nation should build a new nuclear cruise missile. The opponents of the missile come onto Capitol Hill, other notable officials such as William Perry argue a cruise missile is destabilizing and unnecessary.

In Dr. Perry's case he argues that the B-2 bomber anti-gravity nuclear bomb, the B61, will be, quote, "around for decades," end quote, to come and ultimately we will see a new stealth bomber, the B-21, of course, making the standoff cruiser unnecessary.

So I would like your perspectives whether a small number of B-2s, which was first made public in 1989 and a new bomber, an aircraft that hasn't even been built yet, the B-21, will be able to guarantee access to a complex threat environment? And hopefully should the B-21 be built on time and on budget, will that new aircraft entirely eliminate the need for a standoff capability?

General RAND. Sir, I will take the first crack at it and then I will defer to my boss. It is my humble opinion and I think to address that question you have to answer why do we need a long-range standoff weapon.

Well, whether it is the current ALCM [air-launched cruise missile] or the LRSO and so there are several good reasons why you want to have standoff capability. One is survivability again.

Dr. FLEMING. Yes.

General RAND. You don't want to get into the eye of the tiger if you can avoid it. It gives the President flexibility. It gives crews flexibility. It causes the enemy targeting challenges.

It allows you to not go as far with your bombers, not need the same amount of tankers. There are a lot of efficiencies. So when you address why do you need standoff, I think it is fairly indisputable.

So then you go why do we need an LRSO then? As you said so well, the B-21 will start being delivered in the mid-2020s, will continue delivering those into the 2030s and 2040s.

The B-52, which is solely reliant on the ALCM right now, the air-launched cruise missile, is going to be with us for a long time. And that is the weapon of choice for that. And that would significantly hinder my boss here in his targeting requirements that he has as a STRATCOM [U.S. Strategic Command] commander.

Dr. FLEMING. Sure.

General RAND. And the ALCM is aged out. It is a 10-year missile that is in its 30th year. It is having difficulties maintaining its reliability. But more importantly, the missile will not be survivable in the ever-increasing A2/AD environment.

Dr. FLEMING. Yes.

General RAND. So if we want that weapon to have a high probability of hitting the target it is intended for, we need a new weapon system, a new LRSO. It is not a new concept.

Dr. FLEMING. Right.

General RAND. And it is not a new warhead.

Dr. FLEMING. Yes.

General RAND. But to get where it needs to go we need to invest in the LRSO.

Boss, I will defer to you.

Admiral HANEY. I would say I echo all of those statements. First and foremost we have an air-launched cruise missile now and we would be ill-advised to allow that to just go away and not have it replaced.

When you look at my capability today and as mentioned, our B-52s will be around well into the 2040s. And as a result, they, in order to have a sufficient air leg, not having the B-52 as part of that would be really, really bad from a deterrence and strategic stability standpoint.

We have one now and we need to continue to have one to avoid making a less complex problem for any adversary that may think they can escalate their way out of a failed conflict. We want to keep that contained, that restrained is a better option.

I would also say it is very important to our extended deterrence commitments as we go forward in terms of having that kind of capability. So that is what I would add to it. Really an impact to strategic stability if we lose that portion of our air leg going forward.

Dr. FLEMING. Right. Thank you, gentlemen.

Mr. COFFMAN [presiding]. Mr. Bridenstine, of Oklahoma.

Mr. BRIDENSTINE. Thank you, Mr. Chairman.

Secretary Scher, I wanted to have you talk for a second about the triad. I believe that each leg of the triad complements the other legs of the triad. I have heard many people suggest that it is redundant, in fact, maybe even some people on this committee have suggested that.

Would you comment on whether or not you believe it is complementary or redundant?

Mr. SCHER. So certainly this administration has determined that these are complementary. Certainly there are a lot of things. There are overlapping capabilities.

Of course, this is what has kept strategic stability for decades, and I think we all believe that having these overlapping capabilities to, as Admiral Haney said, change the calculus and complicate the calculus of any adversaries, is in fact, not just redundant but important to the strategic stability.

Each leg, as you said, has its own particular piece. The submarines, as noted, are the most survivable of them. The air leg is one that when generated is the easiest for messaging because it can be seen. It also is the most important for our allies that the extended deterrence that they see comes from those kinds of options as well as with the lower yields of those weapons.

And as well it is a recallable one until you have actually launched the weapon. It takes hours for an aircraft to be able to get to a point where before it would launch and they can be called back at any time.

Obviously the ICBM force is the most responsive. It has highly secure command and control. And it strengthens deterrence by ensuring that the disarming first strike that I mentioned about isn't possible.

And even if it could, that, you know, they would have to—there is no such thing as a small operation. They would have to go in massively to take that out.

So it is all of these interlocking pieces that we believe and that we have evidence of decades has provided for strategic stability even in the height of the Cold War, that we believe needs to be maintained. And that was the determination of the administration through the Nuclear Posture Review in 2010 and the implementation review in 2013.

Mr. BRIDENSTINE. Thank you for that.

Admiral Haney, from a military requirements perspective, some have criticized President Obama's modernization plan as an, quote, "all of the above strategy, seeking to replicate the Cold War arsenal or even start a new arms race."



This argument, of course, ignores the 85 percent massive reduction in our nuclear forces since the Cold War and the elimination of entire weapon classes, including nuclear artillery shells, sea-launched cruise missiles, and other types of weapons.

Admiral HANEY, do you believe the administration's modernization plan reflects a desire to replicate our Cold War arsenal or start an arms race? Or do you believe that it simply modernizes systems necessary to execute specific military requirements and missions of the highest importance?

Admiral HANEY. Congressman, I would say no, the plan is not to build up for some cold war. Quite frankly it is the latter in the case of having an effective capability in order to maintain strategic stability, deterrence, assurance, and escalation control.

And I would say when you look at the categories of things, warheads significantly reduced, 85 percent since about 1967 to where we are today, as you have mentioned, but also platforms.

When you look at the *Ohio* replacement program it is not the same number of submarines we have today, less tubes than what have been associated with the design.

So in many categories we are only working to modernize and retain what we need in order to maintain.

Mr. BRIDENSTINE. So the idea that we are trying to create a cold war arsenal or start an arms race you would say that is false?

Admiral HANEY. Quite the contrary. False.

Mr. BRIDENSTINE. Okay. That is good.

Finally, Secretary Scher, from a cost perspective I want to talk for a second about the cost of modernization and maybe put it into some perspective.

When you think about nuclear recapitalization and conventional recapitalization from a, you know, when you think about the entire defense budget, can you give us some comparison? What is the—between the two, conventional and nuclear?

Mr. SCHER. Certainly. So nuclear modernization itself as we are looking is going to be less than 4 percent of the overall DOD budget. And even at its peak it is about 11 percent of the total fiscal year 2017 acquisition budget.

So using fiscal year 2017 as a baseline for what the acquisition budget looks like the peak number would be at about 11 percent of the total. Again, we can't predict what our budget number, so, you know, that is our best gauge of, if you will.

But while, again, it is a lot of money but we believe it is important and it is sustainable.

Mr. BRIDENSTINE. Okay. Great. Thank you.

And General Rand, final question, I heard you earlier. You mentioned that you made a decision on the best gouge at the time. Would you share for this committee what gouge is?

General RAND. Oh, I am sorry. It is just our best—

Mr. BRIDENSTINE. And I say that as a Navy pilot who is now in the Air National Guard.

General RAND. Our best estimate.

Mr. BRIDENSTINE. Your best estimate. Got it. Okay.

I yield back.

Mr. ROGERS. Thank the gentleman.

The Chair now recognizes the gentleman from Colorado, Mr. Coffman, for 5 minutes.

Mr. COFFMAN. Thank you, gentlemen, and thank you so much for your dedication and service to our country.

I am not sure who is the best person to answer this question, but obviously very concerned about Russia and their focus on nuclear weapons, both strategically and in tactical nuclear weapons.

And I wonder if one of you could discuss right now their focus in terms of tactical nuclear weapons and their doctrine in terms of deployment of those weapons?

Mr. SCHER. I think I can. Let me talk from the policy perspective that we are looking at. I think one of the concerns we have is the state—certainly just looking at the fact of the modernization and that is something we can go into in classified setting.

It is concerning to see that there is clearly—the Russians are clearly continuing to look at nuclear weapons as a clear and important part of their arsenal. And they are building it up both in size and type—not beyond the limits of the new START agreement, to be clear, but in other areas we certainly see. And they have violated the INF treaty, for example.

Also of concern is the way they look to—and I think Secretary Carter said saber-rattling with nuclear weapons. How they are using them, how they are training with them extensively and in an increased manner.

And finally there is the idea that is floating around in the military circles within Russia of the use to escalate to win a conflict, or escalate to de-escalate is often how it is referred to.

And the idea that there could be a limited nuclear use that could hopefully stop a failed conventional crisis and that they could win a conventional crisis that they might think they are losing or could lose by the use of limited nuclear weapons, as Admiral Haney spoke about in his opening statement.

That is particularly concerning and dangerous. No one, Russians or anyone else, should think that they can use nuclear weapons to escalate their way out of a failed conventional conflict. The use of nuclear weapons would change dramatically and fundamentally the nature of any conflict.

But those kind of issues are ones that we are most concerned about as we look at the developing environment and security environment, especially in regard to Russia.

Mr. COFFMAN. And those are tactical weapons integrated with conventional forces?

Mr. SCHER. That is a separate piece in terms of the actual—what they are doing. They could use any different kinds of weapons, but certainly that is also a concern, their integration of tactical with conventional units.

Mr. COFFMAN. And it is a first strike doctrine, is it not?

Mr. SCHER. They are not calling it such, but there is certainly the implication that—of escalate to, you know, work their way out of a crisis. So we are certainly planning and thinking about that they would or certainly could do that in a worst-case scenario.

Mr. COFFMAN. Oh. What else?

Secretary Scher, can you characterize the risk to national security if we fail to modernize our nuclear forces?

Mr. SCHER. Certainly, and Admiral Haney I think from an operational perspective can add if he wishes, but if we do not modernize these forces we will not have these forces available for use or operations. This is not a question of modernizing or keeping old forces. This is a question of watching them slowly age out from our forces.

So we would prefer to make decisions if we are to draw down our forces, if we feel the security environment is right and can do so with a willing partner, we would prefer to do any such reductions as part of policy, not as part of aging out of old equipment. So that to us is the biggest issue involved here.

Mr. COFFMAN. Admiral Haney.

Admiral HANEY. I would just add that the real key to deterrence is the perception of your adversary. An adversary has to understand that you have not just a safe, secure, and effective, but a ready and reliable and credible capability.

And anything that detracts from that perception will cause that adversary to think that they may be able to do something. And we cannot afford that in terms of nuclear weapons given the existential threat that they would impose upon our way of life and our country.

Mr. COFFMAN. Okay.

Admiral HANEY. I would also say that we don't want to default and lose a leg or a partial leg of a triad because we haven't modernized. And we are to the point now, as I mentioned earlier, that we can ill afford to wait longer. We are to the point now where we have delayed.

The good news was our predecessors designed it built to last and we were able to some life extension programs, et cetera, but now we are in a point where reliability, survivability, as you have heard today, will be at risk. And hence, deterrence and our assurance to our allies will be of question.

Mr. COFFMAN. General Rand, in looking at the next generation bomber is the Air Force considering any existing platforms, any existing airframes to work off of as they did with the refueler that saved a lot of money?

Mr. Chairman, can I take that for the record?

Mr. ROGERS. They can go ahead and answer. Time has already expired.

Mr. COFFMAN. Okay.

Mr. ROGERS. Go ahead and answer.

General RAND. Sir, we have been very fortunate and I can talk in more detail in the classified part. We have been able with the B-21—we are going to be able to use a lot of hard lessons learned from current existing platforms.

This is the family of systems and it was built that way to augment and be able to work with some of our systems. And I can talk about what those are in classified as well.

I would also say we have learned a lot from the B-2. And the B-21 is a Northrop Grumman product. That is not necessarily why we bought it, but there is a lot of resident expertise that will reside there with the company and with our partners. So I am pretty confident that we are going to be able to get this up, platform on time, on schedule, and it is going to be a humdinger.

Mr. COFFMAN. Mr. Chairman, I yield back.

Mr. ROGERS. I thank the gentleman.

The Chair now recognizes the gentleman from Ohio, home of the Ohio State Buckeyes 2015 national football champions.

[Laughter.]

Chairman Turner.

Mr. TURNER. Thank you, Mr. Chairman. Thank you for that Buckeye shout-out.

Gentlemen, I appreciate all the discussion that is happening today, some of it being incredibly technical.

I want to go to just a policy issue or discussion on the issue of nonproliferation versus disarmament. And there is I think a great deal of misconception that happens in the discussions of nonproliferation and disarmament, nonproliferation being keeping weapons out of the hands of others, disarmament is when you get rid of your own.

And I want to go through a series of policy positions that I think you in your evidence of your testimony today, you agree with. And then I want to contrast that with some issues that we are seeing in nonproliferation disarmament, and then I am going to engage the chairman in a discussion here on some further action items here.

So with each of you, I mean, from our discussion today it is my understanding that each of you believe that it is critical to the United States to field the LRSO and GBSD. Correct? If every one of you could you audibly answer and we will go down and we will start here, General?

General RAND. Yes.

Admiral HANEY. Absolutely.

Mr. SCHER. Yes.

General KLOTZ. Yes.

Mr. TURNER. In the United States 2010 Nuclear Posture Review it said that the United States would not announce a no-first-use or a sole purpose declaratory policy. You still agree with that policy perspective, do you not?

General RAND. Sir, my personal opinion is yes.

Admiral HANEY. I agree.

Mr. SCHER. That remains our policy, yes.

General KLOTZ. I agree with Mr. Scher. That remains our policy.

Mr. TURNER. Excellent. And you believe that Secretary Carter, Secretary Moniz, Chairman Dunford, that they all agree also with the issue of the LRSO, the GBSD, the no-first-use or sole purpose declaration policies that we just discussed. You agree that there is consistency in their positions also?

General RAND. Yes, sir. In my discussion with Admiral Haney, who is closer to those individuals than I am, that is what I have been led to believe.

Admiral HANEY. Well, I would not want to speak for the Chairman. I work for the Secretary of Defense and the President, so I will leave it at that. But while GBSD and LRSO I have had many discussions with the Chairman, the other I have not.

Mr. TURNER. You have no reason to believe that they have a differing opinion?

Admiral HANEY. I do not.

Mr. TURNER. Thank you.

Mr. SCHER. And I will refer to the current policy and the current budget up here, which supports all the things you noted.

Mr. TURNER. Okay.

General KLOTZ. Yes. I try not to speak for Secretary Moniz because I found he is extraordinarily articulate and a lot smarter than I am. I know certainly on the things which the Department of Energy and the NNSA have responsibility for, which is developing the warheads for LRSO and the warhead that would go on the GBSD, we are fully supportive of those programs.

Mr. TURNER. Excellent. Now, I am going to ask you some questions that relate to a public information study that are widely held beliefs by the public and ask your position and your opinion as to whether or not you agree with them.

The public views nuclear weapons as the ultimate protective weapon. Nuclear weapons make us safe. The public views the world as a dangerous place. Are those opinions that the public has that you would also agree with?

General.

General RAND. Sir, I believe the world is a dangerous place, and I believe that nuclear weapons and its deterrent value can't be overstated, and that it does provide us safety and security.

Mr. TURNER. Thank you.

Admiral HANEY. I believe that one has to always look at things in a more complex piece. Deterrence is a complex issue, lots of parts and pieces, and I don't believe in just bumper statements.

Mr. TURNER. But do you believe it is an essential portion, would you not?

Admiral HANEY. But it is definitely. As I have stated before in opening statement, et cetera, that it is essential to our national security.

Mr. TURNER. Excellent.

Mr. SCHER. Nuclear weapons are a critical piece of our national security. And it is a dangerous world.

General KLOTZ. Well, as I said, Congressman, in my opening remarks, even though the Cold War, the end of it was decades behind us, we still live in a very complex, dangerous, international system and that nuclear deterrence is a foundational capability of maintaining our security, but not only our security alone but the security of our allies and friends across the globe.

Mr. TURNER. Well, this report goes on to say that the U.S. public believes that the nuclear arsenal is an effective deterrent that dissuades enemies from attacking us. The thing that I am reading from is from the U.S. in the World talking about issues with Americans, "Talking about Nuclear Weapons with the Persuadable Middle."

It is a study that was done of the American public for the purposes of persuading them not for nonproliferation but of disarmament. And what is concerning about this report is in addition to identifying—some of these studies were done in Indianapolis. They engaged citizens for it and tested messages.

And they came to conclusions. They gave this walk-through of what you can and cannot say with the goal being disarmament and our elimination of our nuclear weapons. They actually come right out and say that one of the things you are not to do in talking to

the persuadable middle is to tell them that your goal is getting to zero as your primary goal.

It goes on to say that nuclear weapons should be presented as a security threat and as a risk to the United States, not as a security issue of the United States.

Mr. Chairman, if I might just for a moment. This study and this group is in part funded by Ploughshares. And Ploughshares, I have been given documents, apparently has significant investments that are in even the Cayman Islands. And there is a grave concern as to how this funds a message alternative that is somewhat disingenuous to the policy perspectives that you have just articulated.

And I want to ask the chairman to join with me in taking the next step of looking at this discussion of disarmament versus non-proliferation and how the message is being funded to try to dissuade the American public of the things that you just testified to we know to be the case with disingenuous statements and misinformation.

So I will be sharing this with the chairman. I hope to get back to you gentlemen and hope to have your assistance also in ways that we can counter the alternative message that I think makes your job harder—

Mr. GARAMENDI. Mr. Chairman.

Mr. TURNER [continuing]. When you come back to us for help.

Mr. ROGERS. Yes.

Mr. GARAMENDI. Excuse me, but you have very successfully put together a hearing here that is becoming extraordinarily one-sided, in part because my Democratic colleagues are not here. However—

Mr. TURNER. Attendance is important, but Mr. Chairman, I didn't yield the time, the additional—that you were giving.

Mr. GARAMENDI. I am sorry, but you—

Mr. ROGERS. The gentleman's time has expired.  
Go ahead.

Mr. GARAMENDI. If I might, Mr. Chairman—

Mr. ROGERS. The gentleman from California, go ahead.

Mr. GARAMENDI. So to complete this, I want to congratulate you on this, the success that you are having in presenting one side of this argument. Others of us, myself and perhaps others, might disagree with many of the things that have been said here, perhaps because of our absence, which is our fault, certainly not yours.

The other side of this story has not been told. First—nobody is talking about disarmament from this side of the aisle. Nobody. Right?

Mr. ROGERS. But here—

Mr. GARAMENDI. I want to make this clear. I have listened to at least a half a dozen on the other side here, and this has gone on and on. Nobody on this side is talking about disarmament. We are talking about let us be wise, let us be smart, and let us recognize that there are limits.

Mr. ROGERS. Well, the chair is going to have to intervene here.

Mr. GARAMENDI. And I would appreciate the opportunity to ask the questions.

Mr. ROGERS. The Chair has recognized the individuals who are present for their questions. They can ask what questions they want to.

The Chair now recognizes the gentleman from Montana for 5 minutes for any questions he may have. Mr. Zinke.

Mr. ZINKE. Thank you, Mr. Chairman. And as a former SEAL [Sea, Air, Land teams] commander I have tried to stay away from nuclear weapons. Some of that earlier in my career. You may recall we had the man-portable one, and I was unfortunately selected to that program. I am glad we see it gone away.

Having said that, the triad, explain to me, General Rand, on the order and magnitude of your rack and stack of operating costs and sustainment. What is the rack and stack of our triad?

General RAND. I will talk to the two legs that I have and I will defer to Admiral Haney on the submarine. Right now the ICBM, the operations and sustainment yearly is \$1.2 billion.

For our bomber fleet that end is \$2.5 billion for operations and sustainment. That is pretty cost effective. That makes up approximately 5.4 percent of the Air Force's TOA [total obligation authority] budget.

Mr. ZINKE. And Admiral.

General RAND. And if I may? The one thing with the bombers I would go while it is more expensive than ICBM, sir, remember it is dual capable. We are also getting conventional use out of all our bombers that are doing multiple things at any given time. So that number is not just supporting the nuclear enterprise.

Mr. ZINKE. And Admiral, want to weigh in?

Admiral HANEY. Congressman, I don't have numbers with me today, so I will have to take it for the record.

[The information referred to can be found in the Appendix on page 105.]

Admiral HANEY. I would just say it is more complicated than looking at a rack and stack of operating costs and what have you. It is the attributes associated with each leg of the triad that have to be balanced with the associated costs.

So to not have your most survivable leg of the triad would have significant consequences to the value of the triad.

Mr. ZINKE. So would it be safe to say that the land-based is a cost-effective part of the triad given what it provides?

Admiral HANEY. Well, I would say every leg of the triad is effective. When you say land-based you are saying, I am assuming, specifically intercontinental ballistic missiles.

Mr. ZINKE. Yes, sir.

Admiral HANEY. But I would say the intercontinental ballistic missiles have certain attributes that are very effective in deterrent, others that are not so much. The business of being able to take a bomber and signal with it, as well as the flexibility with it in terms of things is very important to the deterrence equation.

The business of, as we discussed earlier here, not knowing where the submarine is gives it a unique survivability attribute such that, again, no adversary will want to escalate their way out of a failed conflict.

Mr. ZINKE. Provided the seas remain relatively transparent, right?

Admiral HANEY. Well, I will just say throughout my career, people have been trying to tell me that the seas are going to be transparent. I have done a lot of ASW [anti-submarine warfare] in my years of service, and ASW is hard, anti-submarine warfare. It is not a trivial business, and I don't see in the foreseeable future the oceans becoming translucent.

Mr. ZINKE. Well, let me shift to part of the supporting the land-based is the helicopters. Throughout this process we looked at it, we went back and forth, replace the UH-1 Novembers with another aircraft. Initially I looked at the Black Hawks. There was an existing contract. Let us just put them on there. It made sense from my perspective.

I understand that fleet-wide we need to take a little more time to look at it. Given that what is in the NDAA now is to have it at least under contract by 2018 to allow bidding, have we taken any steps forward since then to look at the requirements of the—the fleet?

General RAND. One thing I can tell you absolutely is Admiral Haney and I are absolutely in lockstep on is the need for a UH-1N replacement.

Mr. ROGERS. The gentleman's time has expired.

The Chair now recognizes the gentlelady from Missouri, Chairman Hartzler, for any questions she may have.

Mrs. HARTZLER. First of all I want to thank you, Mr. Chairman, for allowing me to be here today since——

Mr. ROGERS. Sure.

Mrs. HARTZLER [continuing]. This isn't one of my regular subcommittees. But given the topic of nuclear globalization and the guests that are here today, certainly appreciate the opportunity to visit about the nuclear deterrent, and certainly glad to see once again you, Admiral Haney and General Rand and as well as you, General Klotz.

So the first question I have is for Secretary Scher, Admiral Haney and General Rand. And it kind of builds on some of the questioning that was done by my colleague Mr. Fleming talking about the LRSO a little bit.

But we are hearing arguments that the LRSO should be cancelled, and the reason is because air-launched cruise missiles are, they say, destabilizing because they could be either nuclear-armed or conventionally armed. And that an adversary can mistake one for the other in a conflict.

So are our current AGM-86 cruise missiles both conventional and nuclear? And do you consider them destabilizing? And along with that, do you believe our potential adversaries consider dual-capable cruise missiles destabilizing?

So Secretary.

Mr. SCHER. So I think we have evidence to suggest that we have strategic stability with the current systems, which can be both nuclear or conventionally armed. So I do think that point of your argument raises questions as to why a system that would be recapitalizing and modernizing an existing system and not adding new capabilities would suddenly be destabilizing.

The other piece, of course, is that destabilizing in the nuclear context means does the adversary believe that you can have a dis-



arming first strike? And that is not something that is possible with individual LRSO or the ALCM. So I think we believe that this is, in fact, that strategic stability would be decreased if we did not have an LRSO to replace the ALCM.

Mrs. HARTZLER. Anyone else? Admiral.

Admiral HANEY. I would also add that our adversaries are also, Russia, for example, has had air-launched cruise missiles of both variety. So we have had a history of the air-launched cruise missile, the ALCM, and it hasn't been destabilizing.

So the argument that seems not very thoughtful in that we have had this capability. I think the thing that is destabilizing if we let it decay and not have it, that will be destabilizing.

Mrs. HARTZLER. That is good. Thank you.

General RAND. Ma'am, I agree with what has been said already. We have been using the Air Force and the Navy cruise missiles now for over 30 years. And there hasn't been any indication that it is destabilizing.

I would also submit that if we went that, at least for the air-breather, then any one of our airplanes are dual capable, whether it is an F-16, the Strike Eagle, the B-52, the B-2, they all are carrying conventional weapons as well as nuclear weapons.

So anytime they take off you would have to ask them is that destabilizing?

Mrs. HARTZLER. You anticipate my second point, my second question, exactly. So we have the same issue with the aircraft because they are dual capable. Very good.

General Klotz, I would like to turn to you. What are the impacts to the NNSA if the LRSO and its warhead, the W80-4 is significantly delayed or cancelled.

In particular, and, you know, this is—I have met you before there at the Kansas City. So what are the impacts to the Kansas City National Security Campus as well as the Pantex Plant which do most of the production work and the Livermore National Lab and Sandia National Labs, which have primary design responsibility?

General KLOTZ. Thank you very much for that question. First of all, let me emphasize there has been no decision made to delay the W80-4 life extension program.

Mrs. HARTZLER. Right.

General KLOTZ. And we are proceeding on the program of record as laid out in the President's budget, in our Stockpile Stewardship Memorandum, and in the National Defense Authorization Act, which requires the Secretary of Energy to deliver a first production unit of a life-extended W80 warhead by 2025.

This committee, I believe staff on this committee had asked each of those organizations that you mentioned what the impact would be, so don't take my word for it.

Let me just, if I could, in their responses, for instance, Sandia National Laboratory said, and this is, of course, responding to a hypothetical, that if this program were delayed by 5 years we would need to move the newly trained staff on the order of 300 to 600 people to other currently undefined programs or lose staff by attrition.

And if we ever had to restart that program we would have difficulty in recruiting and rehiring new people do that. Same comments from the other parts of the nuclear security enterprise.

As I mentioned earlier, we have very carefully phased programs in terms of our life extension programs. As we finish work on one or two of them concurrently we are ready to move into the next program using many of the same skilled workforce, many of the same processes, many of the same components that are made in Kansas City and elsewhere.

So if you have a 1 to 2 or 3-, 4-, 5-year gap because of a decision to cancel a program or because of, you know, lack of funding or extended, you know, CRs [continuing resolutions] or whatever the case may be, it has an impact on our ability to get these jobs done on budget and on time.

Mr. ROGERS. The gentlelady's time has expired. I thank the panelist.

The Chair now recognizes the gentleman from Arizona, Mr. Franks, for 5 minutes.

Mr. FRANKS. Well, thank you, Mr. Chairman and thank all of you. General Rand, it is good to see you again.

And Admiral Haney, appreciate you.

I don't know the rest of you quite as well, but I appreciate you for being here.

Mr. Chairman, I have a small document that was put together by my staff and it sort of highlights the list of quotes from some of the senior DOD officials about why we believe that LRSO is so important. And I am asking for unanimous consent to allow it to be put in the record.

Mr. ROGERS. Without objection so ordered.

[The information referred to can be found in the Appendix on page 96.]

Mr. FRANKS. Thank you.

I might just read a couple of quotes off it, Mr. Chairman. From Secretary of Defense Carter in May of last year, he said the reason for the advanced cruise missile is to replace the missile that exists now, in recognition of the fact that air defenses are improving around the world and that keeping that capability to penetrate air defenses with our nuclear deterrent is an important one.

"I think it is important to continue to have a penetrating air-breathing missile for nuclear deterrence." That is Secretary Carter.

Second one from Under Secretary of Defense Frank Kendall. "As potential adversaries acquire more advanced air defenses and nuclear forces, the credibility of our nuclear standoff capability will undoubtedly deteriorate."

"Our allies will feel this deterioration most acutely. And without the LRSO's advanced standoff capabilities, the bomber leg of the triad will gradually become a symbol of our decline rather than a bellwether of our enduring American strength."

Admiral Haney and General Rand, I wanted, if I could, to ask both of you your professional military views on the LRSO. I know you guys have talked about it since before I got here, and I apologize that I missed it. But it is in my mind important enough to maybe reiterate anything that you feel would be necessary.

Can you describe the military requirements that are driving the need for the LRSO? And how do deterrence requirements, aging in our current cruise missile and bombers, and developments in other nations influence this need for the LRSO?

And I will start with you, Admiral Haney, and then to General Rand.

Admiral HANEY. Thank you for the question, Congressman Franks. The LRSO is very important to strategic deterrence, assurance, extended deterrence, and strategic stability. Right now, since we have the air-launched cruise missile, consistent with some of the quotes you read, to not have that kind of capability would be very destabilizing.

It would also make a less complex problem for any adversary. And since we do have adversaries that have nuclear weapons it is important that our deterrence capability is credible going into the future.

And we also have nations that have invested in not only their nuclear arsenal but into anti-access/area-denial kind of capability. And that in itself has to be dealt with.

So we don't want to dilute this problem for any adversary. We want to make sure that deterrence works——

Mr. FRANKS. Yes.

Admiral HANEY [continuing]. Not just now but well into the future and consequently we need that kind of capability.

I will turn it over to General Rand.

General RAND. Sir, as I mentioned earlier, professional airman for 37 years now and the enemy gets a vote. And the improvements in the anti-access and area-denial that the enemy now possesses and will continue to improve upon over the next 10 to 15 years, makes a long-range standoff capability critical for us to be able to put bombs on target, our missiles on target, that are intended to make it to the desired target. So we need that capability.

The current ALCM, air-launched cruise missile, has aged out. It is already 30 years old. It is increasingly difficult to make it reliable, keep it reliable, and it is going to be darn near impossible for it to be survivable——

Mr. FRANKS. Yes.

General RAND [continuing]. If it is needed in the future.

Mr. FRANKS. Well, I guess I would be disingenuous if I wasn't glad you said what you just said. Let me just add one other layer to it. In your professional military judgments, what would be the consequences of choosing to delay or cancel the LRSO program?

I know it is probably you are just reiterating some of the—but what about the delay? What——

Admiral HANEY. A delay would put us at significant risk of impacting our air leg of the triad. Particularly important when you look at my air leg today it is primarily made up of B-52s. So being able to have that capability, not just today, it is a platform that will serve us well into 2040. And consequently that is why it is also important.

And as we look at future platforms their ability to have standoff capability as we see these advances in air threats and what have you, will be very important so that we can maintain strategic stability.

General RAND. I am the force provider of our nuclear forces to Admiral Haney and the President, and I would have to tell Admiral Haney that if we continue to rely on the ALCM past 2030 it would be very difficult for me to be able to provide the resources that he needs to accomplish the mission.

Mr. FRANKS. Thank you, gentlemen. Thank you, Mr. Chairman.

Mr. ROGERS. I thank the gentleman. The gentleman's time has expired.

The Chair will now recognize the gentleman from California for any additional questions he may have.

Mr. GARAMENDI. First of all, if I might put into the record two pieces of writing, one by our ranking member of the committee, Mr. Smith, and another one by former Secretary of Defense, Mr. Perry?

Mr. ROGERS. Without objection so ordered.

[The information referred to can be found in the Appendix beginning on page 98.]

Mr. GARAMENDI. Thank you. Secondly, Mr. Chairman, when I approached you a few moments ago you were saying that it was fair that everybody have a chance to speak, and indeed that is true.

But perhaps because my colleagues are not here and perhaps because there are not as many of us on this side as there are on your side, fairness would seem to be more along the line of equal time. If that were the case, I would request exactly 41 minutes of questioning so that our side would have equal time with your side. Is that possible, Mr. Chairman?

Mr. ROGERS. Committee rules were established at the beginning of the Congress. That is not the way the rules work.

Mr. GARAMENDI. It is on the floor.

Mr. ROGERS. Not in committee.

Mr. GARAMENDI. So I guess the answer is no. Therefore I will take 3 minutes and 48 seconds to try to respond to the questions here. But first let me congratulate you and your staff and your members for putting together a terrific show. One-sided to be sure, and the kind of questions that the American public should be asking, including questions about cost.

Mr. Scher, you were the most disingenuous hearing representative of numbers I have yet heard in this committee. And I must tell you I am very, very disappointed in you because you disassembled the truth by eliminating from the discussion extraordinary costs associated with the bombs, with the command and control, the production facilities, and the cleanup. So understand my disappointment. Your numbers are bullshit.

Now, a couple of questions. Admiral Haney, Secretary Scher, the United States has uncontested conventional superiority, does it not? Conventional superiority?

Admiral HANEY. I—

Mr. GARAMENDI. We also have undetectable submarines. Admiral Haney, thank you for your testimony here today about the submarines and whether they are detectable or not in two different questions, one from mine and one from one of my colleagues here.

It certainly gives a second strike capability. Does those submarines also give us first strike capability? Admiral?

Admiral HANEY. Well, first of all I would say our conventional capability is—

Mr. GARAMENDI. That is not the question I am asking. I am asking the question about the submarines, first strike, second strike. Submarines good for both?

Admiral HANEY. The submarine leg is designed to be the most survivable leg in order to provide us the second strike capability. But clearly the President could decide how he would want to use the capability. The only—

Mr. GARAMENDI. So the answer is yes they are good for first strike as well as second strike.

Admiral HANEY. They could be, yes.

Mr. GARAMENDI. Yes, they could. How much redundant—what is this all about? And the questions here and the discussion here would indicate that we are looking at these nuclear weapons for conventional, for normal warfare. Is that correct?

Or is it only to deter any nuclear? What are we talking about here? What is this all about, the fundamental question?

Admiral HANEY. I think first and foremost, in terms of references, you go back to the Nuclear Posture Review, it specifically cites that we have nuclear weapons in order to provide nuclear deterrence for our country, assurance for our allies. If deterrence fails, it is also my job to provide options to the President in order to carry out his orders.

Mr. GARAMENDI. So it is about deterrence. That is what these nuclear weapons are for, deterrence?

Admiral HANEY. It is to deter strategic—to deter nuclear war, but if deterrence fails let no adversary have any doubt that we have plans in order to deal with that, that have been also articulated in the employment guidance for the nuclear weapons.

Mr. GARAMENDI. Okay. Do we then consider these weapons also for conventional war?

Admiral HANEY. Congressman, I think you know we have conventional options. And to your first point you said we have significant conventional capability. But conventional weapons will not deter nuclear capability from an adversary.

Mr. GARAMENDI. So the answer is yes?

Admiral HANEY. The answer is the answer I gave.

Mr. GARAMENDI. Well, then I will interpret your answer as yes.

Admiral HANEY. You want yes/no answers. I am not into that game. I am a commander of significant military capability. Deterrence is an important issue for our Nation's—our Nation's survivability. Nuclear weapons provide an existential threat to our country.

Mr. GARAMENDI. Indeed.

Admiral HANEY. And we have to deal with it from a deterrence standpoint and an assurance standpoint to our allies.

Mr. GARAMENDI. Well, I would agree with you that the principal purpose, in fact, the only purpose is to deter the use of nuclear weapons in any circumstance.

Well, I have gone 43 seconds into my request for 41 minutes. I guess I had best quit.

Mr. ROGERS. The gentleman's time has expired.

The Chair would make note of the fact that Mr. Scher has demonstrated himself to be nothing but competent, candid, and forth-

right in his responses before this committee in every appearance, including this one.

Mr. GARAMENDI. Well, I disagree.

Mr. ROGERS. I have already noted that.

Mr. Scher, you are welcome to take the floor and make any statements if you would like to, and you don't have to if you don't want to.

Mr. SCHER. I can't imagine there is anything I would say that would solve the problem that Congressman Garamendi has presented.

Mr. ROGERS. Great. I do have one last question. And by the way, you will be pleased to know because we have had such a very fruitful dialogue here today we are not going to have a classified annex session.

But I would like to close, you know, I have met with all of y'all before this hearing and one of the questions I have got is if in fact the administration did choose to go down the path of either delaying or attempting to delay or terminating the LRSD or GBSD, as a practical matter how would they do that?

Mr. Scher, do you have a thought?

Mr. SCHER. I think that is a question I have thought about as well. Obviously the fiscal year 2017 budget, which is still the position of the administration, is up here on the Hill for action. So obviously you all have in your hands that issue.

Certainly we will work on and could develop another budget, but that would be for the next term to do. But I would emphasize that at this point the decisions that hold, the President submitted to the Congress, are the position of the Department and the administration.

Mr. ROGERS. Anybody have anything else to add to that about—your thoughts on that? General Rand.

General RAND. Sir, earlier it was stated that as I almost welcomed to take on questions about—on that I was daring. My job is a force provider.

I have two legs of the triad that I am responsible for. They are old. They are wearing out. And if I am asked to provide forces to do a mission, I have to be candid and tell you there will come a point where I cannot do it with existing capabilities because they are not reliable or they will not be survivable.

I am acutely aware of the costs associated with this. I will give the consequences if we do not replace these aging, wore out systems. Other people decide if we are going to have the triad. I am going to tell you what will happen if we continue to use and rely on the things that we currently have. We need to modernize.

Mr. ROGERS. Great. Thank you all. This Congress and this administration cannot do its job effectively without the wise counsel of individuals such as yourselves. And we appreciate what you have done for our country heretofore, and what you have done for us here today.

And with that, this committee is adjourned.

[Whereupon, at 4:13 p.m., the subcommittee was adjourned.]

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

JULY 14, 2016

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**PREPARED STATEMENTS SUBMITTED FOR THE RECORD**

JULY 14, 2016

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**Opening Remarks – As Prepared for Delivery  
The Honorable Mike Rogers  
Chairman, Subcommittee on Strategic Forces  
House Armed Services Committee**

**Hearing on the “President Obama’s Nuclear Deterrent Modernization  
Plans and Budgets: The Military Requirements”**

**July 14, 2016**

Good afternoon. The subcommittee will come to order.

Welcome to our hearing on “President Obama’s Nuclear Modernization Plans and Budgets: The Military Requirements.”

I want to thank our witnesses for being here today and for serving our country. We know how hard you work—both day-to-day and to prepare for these hearings.

We thank you. Our witnesses are:

The Honorable Frank Klotz  
Administrator  
National Nuclear Security Administration

The Honorable Robert Scher  
Assistant Secretary of Defense for Strategy, Plans, and Capabilities

Admiral Cecil Haney  
Commander  
U.S. Strategic Command

General Robin Rand  
Commander  
Air Force Global Strike Command

The purpose of this hearing is to review and conduct oversight of President Obama’s nuclear weapons modernization plans, budgets, and schedules—and the military requirements driving them.

We will also take a hard look at the nuclear policies that frame and guide our nuclear forces.

Most importantly, we’ll take some time to reflect on the broad, bipartisan consensus that has developed over the past 7 years on the need to support President Obama’s nuclear modernization plan.

The genesis of it was back in 2009, with the report of the bipartisan and congressionally-mandated Strategic Posture Commission. The Commission

blazed a bipartisan trail for U.S. nuclear policy and directly led to the Administration's Nuclear Posture Review.

The consensus crystallized with Senate consideration and ratification of the New START Treaty. The Senate approved the treaty based on President Obama's commitment to modernize all U.S. nuclear forces and request the money required to do so.

Without objection I'd like to introduce for the record two statements by the President on this front.

And here are two short quotes in them from President Obama:

"I intend to modernize or replace the triad of strategic nuclear delivery systems: a heavy bomber and air-launched cruise missile, an ICBM, and a nuclear-powered ballistic missile submarine and SLBM."

"I recognize that nuclear modernization requires investment for the long-term, in addition to this one-year budget increase. That is my commitment to the Congress—that my Administration will pursue these programs and capabilities for as long as I am President."

In the years since then, this subcommittee has sought to ensure the Administration sticks to that commitment. And I think we can judge that—largely—it has.

We've seen civilian leader in the Department of Defense, the Department of Energy, and senior military officers, say time and again that nuclear deterrence is their "highest priority mission" and fund it appropriately.

And that agreement extends to Capitol Hill. My friend and our Ranking Member has said several times that the bipartisan consensus on the nuclear modernization program is remarkable and astonishing.

I agree, and value his leadership and thoughtfulness on these critical national security issues.

Over in the Senate, the most recent example of the bipartisan consensus comes in the form of a letter sent to Secretary Carter last Friday by 14 senators—7 Republicans and 7 Democrats.

Without objection, I'd like to introduce that for the record. A brief quote:

"We strongly believe in the value of the interlocking capabilities of the three legs of the triad... We must modernize these forces to preserve their deterrent capabilities."

These senators and the members of this subcommittee are well aware of why we need to modernize our nuclear deterrent.

Our forces and enterprise are aging rapidly—while potential adversaries are modernizing and deploying new capabilities.

President Putin in particular seems intent on aggressively challenging the U.S., our allies, and international stability in general.

Directly after this hearing, the subcommittee will meet in a closed session to hear the latest details on this front.

Russia's belligerent actions and threatening statements are incredibly dangerous but must be met with resolve and strength.

Russia's actions are not the one-off, reckless actions of subordinate forces—these are highly orchestrated engagements probing for weakness and gaps.

We must signal our professionalism and resolve to both allies and adversaries by calmly carrying out the nuclear modernization program to which we've committed.

So we hope that President Obama, in his final five months in office, sticks to his plan. We hope he will ignore the small—but well-funded and vocal—nuclear disarmament echo chamber.

Making significant changes to the nuclear modernization program and nuclear policy framework would not only endanger U.S. national security, it would send a terrible signal to our allies and adversaries.

Upending this consensus would be foolhardy and dangerous. We need to stick to the plan.

Thank you again to our witnesses—I look forward to the discussion.

**President Obama's Nuclear Deterrent Modernization Plans and Budgets:  
The Military Requirements.**

**OPENING STATEMENT for RANKING MEMBER COOPER**

**July 14, 2016**

I wish to join Chairman Rogers in welcoming Secretary Scher, Admiral Haney, General Rand and General Klotz to this hearing.

While they are not represented here today, I would also like to take the opportunity to commend the Navy for its outstanding stewardship of the nuclear mission.

I strongly support a reliable, safe and secure nuclear arsenal. It is the cornerstone of our security. As I have said many times before, our nuclear arsenal is vital to the defense of our nation and our allies, and I support nuclear modernization investment that will maintain the US nuclear triad throughout this century. This is one of the most important responsibilities for our committee.

Nuclear modernization will not be without challenges.

First, we must continue to ensure that the cultural and morale improvements following the challenges in the missileer force are effective. The men and women carrying out this important mission are one of the most valuable and critical parts of our defense.

Second, we must ensure that we do not unwittingly undermine strategic stability and that neither we nor Russia lower the threshold for nuclear weapons use. Secretary William Perry has expressed concern that we may stumble into a nuclear arms race which benefits neither the United States nor Russia. The prospect of a nuclear arms race is a dangerous risk that we cannot afford to take, and we must remain vigilant to reduce the risk of miscalculation or unintended escalation in a crisis. Reports have indicated that President Obama may take additional steps to address these issues. I hope he will engage Congress early and Congress should stand ready to work with him and the next administration to ensure we continue on a path that maintains strategic stability and reduces the risk of nuclear war, as the consequences of the use of just one nuclear weapon, let alone a nuclear war, remain unimaginable.

Third, the investments for nuclear weapons modernization are expected to ramp up significantly and will double between 2025 and 2035, costing a trillion dollars over the next three decades. Admiral Haney noted that it would likely reach 7-10% of the defense budget, and many of these programs will occur concurrently over the next 10-20 years. We must exercise careful oversight to ensure that plans are in place that will allow successful implementation. The National Nuclear Security Administration annually submits a 25-year plan for nuclear modernization. This long-term planning

informs planning and oversight and the Department of Defense should submit a similar comprehensive plan for its nuclear weapons modernization programs.

Finally, nuclear non-proliferation must go hand-in-hand with nuclear deterrence. These are the two sides of the nuclear security coin. Without strong efforts to reduce the risks of nuclear terrorism and the risk of nuclear weapons spreading to additional countries, we squander valuable and low-cost opportunities to ensure that a terrorist does not detonate a crude nuclear weapon potentially killing hundreds of thousands of innocent people in a crowded city, or that additional countries do not acquire nuclear weapons or the latent capability to make them. Efforts to prevent these outcomes are as important for US and international security. Progress on reducing the dangers of nuclear weapons and the spread of nuclear weapons should be inextricably tied to progress on maintaining a reliable, safe and secure nuclear arsenal. I would also like to submit for the record the 2012 Washington Post op-ed by Henry Kissinger and Brent Scowcroft, "Nuclear weapon reductions must be part of strategic analysis," which still holds true today.

Thank you for contributing your expertise and insights to allow an informed debate and oversight on these important issues.

**Statement of Lieutenant General Frank Klotz, USAF (Ret)**  
**Administrator**  
**National Nuclear Security Administration**  
**U.S. Department of Energy**  
**on**  
***“The Obama Nuclear Deterrent Modernization Plan and Schedule: A Bipartisan Consensus”***  
**Before the**  
**Subcommittee on Strategic Forces**  
**House Committee on Armed Services**  
  
**July 14, 2016**

Chairman Rogers, Ranking Member Cooper, Members of the Subcommittee, thank you for the opportunity to testify on the nuclear deterrent modernization plan and schedule. The Secretary of Energy and I appreciate the attention this Committee has focused on the U.S. nuclear security enterprise, and the steadfast and abiding support it has provided to our Department. NNSA's life extension programs and infrastructure modernization efforts are central to the Administration's goal of maintaining a credible deterrent, and ensuring the safety, security, and effectiveness of our nuclear arsenal.

The nuclear deterrent is a foundational capability of U.S. national security strategy.<sup>1</sup> Although it has been decades since the end of the Cold War, our nuclear enterprise continues to play an essential role in preventing conflict and deterring attacks upon the United States, our armed forces, and our Allies and friends. As Secretary of Defense Ash Carter recently said, “a safe, secure and reliable nuclear arsenal is part of the American security structure as far into the future as I can see.”

The world is increasingly unpredictable – a condition that is unlikely to change. While there have been significant reductions in the size of the Russian and U.S. nuclear weapons stockpiles since the end of the Cold War, thousands of nuclear weapons and large amounts of weapons-usable nuclear materials remain. Countries such as Russia, China, and North Korea are now modernizing, expanding, and diversifying their nuclear arsenals. State and non-state actors continue to pursue nuclear and radiological capabilities. This environment requires a credible deterrent appropriate for advanced military competitors, regional WMD states, and non-state terrorist networks.

We must maintain nuclear deterrent capabilities not only for ourselves, but also for our Allies and partners. As NATO reaffirmed just last week in the Warsaw Summit Communiqué, “As long as nuclear weapons exist, NATO will remain a nuclear alliance. The strategic forces of the Alliance, particularly those of the United States, are the supreme guarantee of the security of the Allies... If the fundamental security of any of its members were to be threatened however, NATO has the capabilities and resolve to impose costs on an adversary that would be unacceptable and far outweigh the benefits that an adversary could hope to achieve.”

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<sup>1</sup> National Security Strategy, February 2015. Available at:  
[https://www.whitehouse.gov/sites/default/files/docs/2015\\_national\\_security\\_strategy.pdf](https://www.whitehouse.gov/sites/default/files/docs/2015_national_security_strategy.pdf)



The nuclear deterrent also serves other important national security interests. It both helps to promote peace and stability and removes incentives for others to develop indigenous nuclear capabilities. These assurances play a critical role in maintaining strategic stability across the globe, and have often overlooked nonproliferation benefits.

The 2010 Nuclear Posture Review (NPR) recognized the necessity of maintaining a safe, secure, and effective deterrent for as long as nuclear weapons exist. In order to do so, the NPR directed that the United States pursue a sound Stockpile Management Program and modernize the aging infrastructure to provide a hedge against technical and geopolitical surprise, while also continuing to reduce the overall size of the U.S. nuclear weapon stockpile.

Today, I will focus on how NNSA has implemented the programs prescribed in the NPR, specifically the life extension programs and major alteration for four of the weapons in our stockpile and our efforts to modernize the facilities and infrastructure at our national security laboratories and production plants. The scope, budgets, and schedules of the life extension programs (LEP), infrastructure modernization, and the Department of Defense's (DoD) nuclear delivery systems have been fully integrated through coordinated and tightly coupled efforts. These programs are the foundation of our ability to maintain today's deterrent as we prepare for the increasingly uncertain security environment of the future.

#### **Life Extension Programs and Alterations**

In order to maintain a safe, secure, and effective stockpile without nuclear explosive testing, NNSA extends the lifespan of weapons that have reached the end of their original design life. As we work on extending the life of the nuclear arsenal, we also exercise the capabilities and maintain the scientific, technical, and engineering proficiency of our workforce and infrastructure.

In accordance with policy objectives for improved safety and security, NNSA is extending the life of our warheads to maintain operational capabilities by replacing nuclear and nonnuclear parts, or inserting new parts that use modern technologies. These major efforts require the use of a significant portion of our capabilities for research, development, testing, and evaluation (RDT&E), and production. Any changes to the configuration of a warhead, such as to improve security and safety or to replace obsolete components, have to be evaluated and certified using experimental and computational tools to ensure the warhead will operate as designed.

#### ***W76-1 LEP***

The W76-1 LEP is associated with the Navy's submarine launched ballistic missile. NNSA started producing the W76-1 in 2008 and, by the end of this year, we will have completed more than 70 percent of the total number of W76-1 warheads to be provided to the Navy.

Throughout the production phase, we had to overcome a variety of challenges to stay on schedule. For example, in the middle of the W76-1 production run, we moved our Kansas City operations -- where we produce or procure non-nuclear components for the stockpile -- from a sprawling, World War II-era factory to our new, state-of-the art Kansas City National Security

Campus. We also had to contend with flooding from unusually heavy rainfalls and frequent lightning from nearby thunderstorms at Pantex, both of which can force a halt to operations.

Nevertheless, we fully expect to complete production of the W76-1 on schedule in 2019. The Navy will then have a life-extended warhead for its ballistic missile submarine fleet that will last for at least another 30 years, and will enable an almost 50 percent reduction of the total number of W-76 warheads currently in the inventory.

#### ***B61-12 LEP***

The B61-12 LEP is critical to modernizing the nuclear gravity weapon stockpile sustaining the Nation's strategic and non-strategic air-delivered nuclear deterrent capability. The development activities of the B61-12 LEP will be leveraged in subsequent life extension activities.

The LEP for the B61-12 gravity bomb has achieved many important milestones in the last year. Working with the Air Force, we successfully completed environmental flight tests on the F-15, F-16, and B-2 aircraft on or ahead of schedule. These tests ensured that the B61-12 is compatible with analog aircraft like F-16s and digital aircraft like F-15s and F-35s, as well as the B-2 bomber.

This past January, the B61-12 LEP completed its System Baseline Design Review, an important milestone which allows us to produce the next round of development hardware, and to continue engineering and testing activities. In May, the Preliminary Design Review and Acceptance Group (PDRAAG), which includes representatives from the Air Force, Navy, and Army, formally determined that the baseline design of the B61-12 meets DOD Military Characteristics and Stockpile-to-Target Sequence requirements.

Last month, the NNSA authorized the Nuclear Weapons Laboratories and production plants to enter Phase 6.4, *Production Engineering*. An important milestone of this phase is the upcoming release of the Baseline Cost Report which will update the program cost, scope, and schedule with information gained from development activities conducted so far.

The B61-12 LEP remains on track for a FPU in March 2020, the date agreed within the NWC and supported by the President's FY 2017 budget request. When the LEP is finished, it will add at least 20 years to the life of the system and consolidate four variants of the B61 into a single variant, and facilitate the retirement of the B83-1. These actions will result in a 50 percent reduction in the number of nuclear gravity bombs in the stockpile and an 80 percent reduction in the amount of nuclear material used in air delivered gravity weapons.

#### ***W88 Alt 370 [with CHE refresh]***

The W88, another submarine-launched ballistic missile warhead, is undergoing a major Alteration (Alt) 370 that was originally authorized to replace the weapon's Arming, Fuzing, and Firing systems, and to make key safety enhancements. In the past year, based on results from the ongoing surveillance of the nuclear weapons stockpile performed by Los Alamos National Laboratory and peer-reviewed by Lawrence Livermore National Laboratory, the NWC decided

to expand the planned W88 ALT 370 program to include replacement of the conventional high explosive (CHE) in the warhead.

We are accelerating all planning activities associated with CHE refresh and will combine them into a single W88 ALT 370 program by the time we enter Phase 6.4, Production Engineering, in February 2017. The Department submitted a \$25 million reprogramming request to Congress in June 2016 to meet this milestone and maintain a FPU of December 2019 and delivery to the Navy shortly thereafter.

#### ***W80-4 LEP***

We are in the initial stages of the W80-4 LEP, in support of the Air Force's Long Range Standoff (LRSO) program. The W80-4, a life-extended version of the existing cruise missile warhead, the W80-1, recently completed the *Concept Study* phase, or Phase 6.1, and received NWC approval to enter Phase 6.2, which initiates the *Feasibility Study*. NNSA's laboratories are already ramping up their hiring to perform this LEP.

The NWC identified, and subsequently reaffirmed, the need for the LRSO. The FY 2015 National Defense Authorization Act requires the Secretary of Energy to deliver the FPU of a life-extended W80 warhead for the LRSO by 2025, and we are on track to meet that timeline.

#### **Infrastructure Requirements**

The NNSA mission depends on facilities, infrastructure, and equipment for success -- we are long overdue to build the modern, smaller, and safer complex that will meet military requirements; keep the deterrent safe, secure and effective; and improve worker and public safety. More than 50 percent of NNSA's facilities are over 40 years old, and almost 30 percent date to the Manhattan Project. Current demands from the LEPs, along with demands of the stockpile stewardship program (SSP), have increased loads on the aging NNSA infrastructure. Without infrastructure modernization, this risk to NNSA's mission will increase.

NNSA cannot accomplish its mission to sustain the nuclear deterrent over the long-term without reliable and modern programmatic, security, and general purpose infrastructure that provides necessary capabilities for today, allows for the opportunity to expand future capacities, and minimizes risks. As stressed in the 2010 NPR, NNSA's infrastructure must be able to not only support the work we currently have planned, but respond to technical challenges and geopolitical surprises.

#### **Key Investments for Uranium and Plutonium Capabilities**

Major investments are currently underway to address a number of critical capabilities identified in the 2010 NPR, including the Uranium Strategy, which includes the Uranium Processing Facility (UPF), and the Plutonium Strategy, which includes the Chemistry and Metallurgy Research Replacement (CMRR) Project.

NNSA is committed to ending enriched uranium (EU) program operations in most of Building 9212 and delivering UPF by 2025 for no more than \$6.5 billion. The project has completed conceptual design on budget and on schedule. Aligned with the Secretary of Energy's rigorous project management guidance, NNSA will ensure the project achieves 90% design maturity on the nuclear facilities before establishing the critical decision (CD) 2 cost and schedule baseline. The project is currently on track to achieve CD-2 in late 2017. Once delivered, UPF will provide new floor space for select building 9212 capabilities (which cannot be relocated) and segregate Enriched Uranium operations by security and hazard requirements.

Following on the heels of the successful completion of the Site Readiness Subproject, which was \$20 million under budget, the UPF Site Infrastructure Subproject is progressing under budget and on schedule as well. NNSA is also making progress on reducing sources of mission and safety risk in the existing plan to ensure long-term EU operations continue safely. We are also increasing the safety posture of Y-12 as the plant makes progress moving material-at-risk to the Highly Enriched Uranium Materials Facility. Key investments with existing EU manufacturing capabilities such as casting, machining, and metal purification will improve the reliability of those systems and further reduce overall mission risk at the plant.

Infrastructure investments are currently being executed under NNSA's three-step plutonium infrastructure strategy. The Plutonium Strategy recapitalizes key plutonium capabilities in the nuclear security enterprise by optimizing existing facilities. NNSA remains committed to meeting the NWC requirements for plutonium pits and we are making progress on the fabrication of a development pit using existing materials. This will help exercise our plutonium capabilities and critical skills and is a major step toward reaching pit manufacturing goals.

The CMRR project maintains continuity of analytical chemistry (AC) and materials characterization (MC) capabilities, and allows the cessation of program operations in the Chemistry and Metallurgy Research Facility in 2019. NNSA is evaluating alternatives to provide infrastructure for future pit production requirements and to address the life of current facilities as part of the Plutonium Modular Approach (PMA). Once the analysis of alternatives is completed and a selection is made, NNSA will begin conceptual design work.

#### **Increasing Resources for Maintenance & Recapitalization**

Despite the recent increases in funding, primarily for key plutonium and uranium capabilities and stockpile LEPs, resources for maintenance, recapitalization, and RDT&E have not kept pace with the needs of an aged enterprise. Funding these shortfalls is necessary to decrease risk in ongoing LEPs, re-establish the capability to produce strategic material needed for the stockpile, and position the enterprise for long term stockpile stewardship without having to resort to underground nuclear explosive testing. These additional investments will also reduce maintenance, operating, and associated security costs and reduce our footprint.

In order to mitigate the current infrastructure challenges, NNSA has improved its infrastructure investment strategy by using the new budget structure improvements approved by Congress, improving decision-making, and implementing program management tools.

Starting in FY 2015, NNSA also began requesting a higher percentage of funding for Recapitalization and Maintenance projects. These funding increases are essential steps to decrease deferred maintenance, arrest the declining state of infrastructure, increase enterprise productivity, improve safety, eliminate costly compensatory measures, and shrink the NNSA footprint through the disposition of unneeded facilities. NNSA also deployed a project prioritization methodology to evaluate return on investment, energy savings, and other efficiencies that lower the cost to operate the NNSA enterprise while balancing programmatic and safety risk reduction. Further, NNSA has improved recapitalization execution by managing all recapitalization work as projects.

NNSA has also made progress in the disposition of excess facilities, demolishing buildings 9744 and 9808 at Y-12 in FY 2014 and 2015 and preparing for the disposition of the Kansas City Bannister Federal Complex in FY 2017. Ultimately, however, the long-term success of the NNSA mission relies on a blend of infrastructure investments including funding for Maintenance and Repair, Recapitalization, and Line-Item construction.

Finally, the Department of Energy and NNSA continue to pursue third-party financing and public-private partnerships to complement traditional line-item capital construction projects as a means of providing appropriately-sized and modernized non-nuclear facilities for our 21<sup>st</sup> century operations and workforce.

We recently achieved a major success with the construction of a brand new facility for the production of non-nuclear components for nuclear weapons in Kansas City, MO. The facility was built by a private developer and then leased by NNSA through the General Services Administration (GSA). The modern Kansas City campus opened for business in August 2014, replacing an antiquated, World War II-era factory. The net result is a 50 percent reduction in our footprint in Kansas City, a \$100 million a year savings to the U.S. Government in operating and maintenance costs, and significantly improved operational efficiency and workforce morale.

Just last month, NNSA authorized the management and operation contractor for the Pantex nuclear weapons assembly and dismantlement facility in Amarillo, TX, to enter into a lease agreement for a new office building that a private developer will build using third-party financing. This project will allow about a thousand employees to move out of dilapidated, 1950s-era buildings into a modern, energy efficient workspace. It will also eliminate approximately \$20 million in deferred maintenance at the Pantex site and enhance recruitment and retention by improving the quality of the work environment.

We strongly believe greater use of such approaches to recapitalizing our aging facilities and infrastructure should continue to be explored, and appreciate this Committee's strong endorsement of that view.

### **Conclusion**

The role of the nuclear deterrent as a foundational capability of the security of the United States and its Allies is unquestionable, and for as long as this deterrent is necessary, NNSA will continue to assure the stockpile remains safe, secure, and effective, without nuclear explosive

testing. But achieving our plans for tomorrow's stockpile will require adequate resources, national commitment, and balanced investments in life extension programs and infrastructure modernization. This approach will enhance our ability to maintain strategic stability, provide for credible deterrence, and assure our allies and partners. Thank you again for giving me the opportunity to testify today on these important priorities before your Committee.

**Lieutenant General Frank G. Klotz, USAF (Ret.)**

Lieutenant General Frank G. Klotz, United States Air Force (Ret), was confirmed by the Senate on Tuesday, April 8, 2014, as the Department of Energy's Under Secretary for Nuclear Security and Administrator for the National Nuclear Security Administration (NNSA).

As Under Secretary for Nuclear Security, Lt. Gen. Klotz is responsible for the management and operation of the NNSA, as well as policy matters across the Department of Energy and NNSA enterprise in support of President Obama's nuclear security agenda.

Prior to his Senate confirmation, Lt. Gen. Klotz served in a variety of military and national security positions. As the former Commander of Air Force Global Strike Command, a position he held from 2009 to 2011, he established and then led a brand new 23,000-person organization that merged responsibility for all U.S. nuclear-capable bombers and land-based missiles under a single chain of command. From 2007 to 2009, Lt. Gen. Klotz was the Assistant Vice Chief of Staff and Director of the Air Staff. He served as the Vice Commander of Air Force Space Command from 2005 to 2007 and was the Commander of the Twentieth Air Force from 2003 to 2005.

Lt. Gen. Klotz served at the White House from 2001 to 2003 as the Director for Nuclear Policy and Arms Control on the National Security Council, where he represented the White House in the talks that led to the 2002 Moscow Treaty to reduce strategic nuclear weapons. Earlier in his career, he served as the defense attaché at U.S. Embassy Moscow during a particularly eventful period in U.S.-Russian relations.

A distinguished graduate of the U.S. Air Force Academy, Lt. Gen. Klotz attended Oxford University as a Rhodes Scholar, where he earned an MPhil in international relations and a DPhil in politics. He is also a graduate of the National War College in Washington, DC. Most recently, Lt. Gen. Klotz was a senior fellow for strategic studies and arms control at the Council on Foreign Relations.

Not for Public Release until Approved by the  
House Armed Services Subcommittee on Strategic Forces

STATEMENT OF  
ROBERT SCHER  
ASSISTANT SECRETARY OF DEFENSE  
FOR STRATEGY, PLANS, AND CAPABILITIES

BEFORE THE HOUSE  
ARMED SERVICES  
SUBCOMMITTEE ON STRATEGIC FORCES

July 14, 2016



Chairman Rogers, Ranking Member Cooper, and distinguished Members of the Subcommittee, thank you for the opportunity to testify on the Administration's plan for modernizing U.S. nuclear deterrent forces.

President Obama's approach to reducing nuclear dangers has consistently included two key pillars: working toward a world without nuclear weapons, and maintaining effective deterrence along the way. Because we cannot responsibly count on achieving global disarmament before the U.S. arsenal ages into obsolescence, we must proceed with modernized replacements to maintain our nuclear deterrent for us and our allies. Nuclear recapitalization is not only necessary; it is also affordable if prioritized appropriately, and is consistent with the President's vision of ultimately reaching a world without nuclear weapons.

Nuclear dangers persist in the world. China and Russia are improving their arsenals and, through development programs already well underway, ensuring their ability to maintain them for decades to come. Russia increasingly employs nuclear threats as tools of intimidation. And North Korea not only continues to pursue nuclear weapons capable of striking our allies and homeland, but has repeatedly and directly threatened such attacks.

We have reduced the prominence of nuclear weapons in our strategy, but we recognize the foundational role nuclear deterrence continues to play. Nuclear forces provide our most potent means of convincing potential aggressors that striking the United States or its allies with nuclear weapons would bring risks that far outweigh any benefits they could hope to achieve.

In his 2009 Prague speech, President Obama committed the United States to work toward global disarmament while at the same time maintaining a safe, secure, and effective nuclear arsenal for as long as nuclear weapons exist. In subsequent reviews, in 2010 and 2013, the Administration concluded that stable deterrence is best provided by sustaining our nuclear triad of strategic bombers, submarines, and intercontinental ballistic missiles, or ICBMs, together with our Dual-Capable Aircraft, or DCA. The triad and DCA provide the credibility, flexibility, and survivability to meet and adapt to the challenges of a dynamic 21<sup>st</sup> century security environment, without requiring us to mirror every nuclear weapon system others might deploy. Our nuclear forces are structured and postured to bolster strategic stability by decreasing incentives for, and the likelihood of, a future arms race. In addition to providing unique and complementary

capabilities, each leg of the triad provides a hedge against changes in the security environment or technical problems in either of the other legs.

The need to sustain effective deterrence and strategic stability drives the requirement to modernize U.S. nuclear forces, and we must make investments now to have replacements ready when needed. At nearly thirty years old, the B-2 bomber is the newest system in the U.S. triad. In the coming decades, our bombers and 1970's-era ICBMs will reach the point where they can no longer be extended without extensive work and investment that in some cases would likely exceed the cost of modern replacements. The air-launched cruise missile is decades beyond its planned service life—its reliability degrading and its viability increasingly challenged by advanced air defenses. And our nuclear-armed submarines will irreversibly age out of service beginning in 2027.

Consequently, the OHIO Replacement Program is essential to sustaining the most survivable leg of the triad. The Ground-Based Strategic Deterrent will maintain the responsiveness and extremely secure command and control of our current ICBM force, and will preserve its role in severely complicating the necessary scale of any adversary attempt to disarm the United States. The B-21 strategic bomber, the B61-12 gravity bomb life extension, the Long-Range Standoff cruise missile, and F-35 nuclear capability will sustain deterrence-signaling ability and the range of options currently available to the President for effectively deterring and credibly responding to limited as well as large-scale nuclear attack against the United States or its allies.

Contrary to frequent mischaracterizations, we are not spending a trillion dollars on nuclear modernization. The modernization costs, spread over twenty years, will be an estimated \$350B-\$450B. To put this in context, the total defense budget in Fiscal Year 2016 alone is \$580B. The cost for nuclear modernization is substantial, but is not unreasonable for what Secretary Carter called the “bedrock of our security.” Sustaining consensus among the executive and legislative branches, and clearly explaining the associated rationale to the public, is essential to pursue a sustainable modernization program.

Our modernization plan is consistent with the President's Prague Agenda. It directly supports U.S. nonproliferation and disarmament objectives by enabling reductions in our arsenal while continuing to assure allies that they do not need their own nuclear capabilities. Claims that U.S.

modernization signals a nuclear arms buildup or renewed arms race fail to fairly characterize the activities of other countries, and do not account for the fact that our modernization is not a response to Russia or China, but merely the sustainment of our current deterrent capabilities — capabilities that have served us well — into the future. For example, replacing legacy warheads will allow further reductions in a stockpile that is already 85 percent smaller than at its Cold-War peak, and we are reducing warhead types in addition to total numbers. We are not developing new nuclear weapons, and warhead life extension programs will not support new military missions or provide for new military capabilities.

Recapitalizing the triad will preserve existing military capabilities for preventing both large-scale and limited nuclear attacks, even as threats evolve.

To deter massive nuclear attack, the United States must maintain a force that is invulnerable to a disarming strike. Survivable forces encourage nuclear restraint on the part of potential adversaries because they ensure that such an attack cannot possibly succeed. Strategic stability requires a solid foundation that is not susceptible to any single point of failure, and each leg of the triad makes its own unique and critical contribution: strategic submarines designed for survivability, a highly responsive ICBM force, and a bomber force that is both survivable once alerted and recallable during its relatively slow approach to designated targets. Preserving this stability provides insurance against the fear and confusion that would accompany any serious military crisis under the nuclear shadow.

While a massive nuclear strike would bring the greatest devastation imaginable, the more acute threat might be a limited attack aimed at coercing rather than destroying the United States or its allies. An adversary faced with losing a war of aggression might use a small number of nuclear weapons, perhaps even one or two, against U.S. forces or allies in an attempt to force capitulation. Our unwavering commitment to the security of our allies should make clear that this would be a grave miscalculation, destined to fail. A flexible nuclear force helps demonstrate this commitment. Retaining a range of capabilities—in explosive power and methods of delivery—strengthens deterrence by showing the United States is prepared to respond in a wide range of scenarios, including an adversary’s calibrated nuclear escalation.

Nuclear deterrence and disarmament share the same ultimate goal of reducing the risk of nuclear war. Forgoing or delaying modernization would increase that risk and impair our ability to protect U.S. and allied vital security interests. As we continue to work toward a world without nuclear weapons, effective nuclear deterrence is an imperative we must not ignore. President Obama has repeatedly noted the consequent need to ensure a safe, secure, and effective nuclear force, and I would like to thank this committee especially for your support in that effort.

**Robert M. Scher**  
**Assistant Secretary of Defense for**  
**Strategy, Plans, and Capabilities**

**CURRENT ASSIGNMENT:** Mr. Robert Scher was appointed as the first Assistant Secretary of Defense for the new Office of Strategy, Plans, and Capabilities in December 2014. Mr. Scher is responsible for advising the Secretary of Defense and the Under Secretary of Defense for Policy on: national security and defense strategy; the forces and contingency plans necessary to implement defense strategy; nuclear deterrence and missile defense policy; and security cooperation plans and policies.

**PAST EXPERIENCE:** Mr. Robert Scher previously served as the Deputy Assistant Secretary of Defense for Plans within the Office of the Deputy Under Secretary of Defense for Strategy, Plans, and Forces. In this role, he oversaw the development of guidance for military campaign and contingency plans, the processes for reviewing and assessing these plans, and the development and implementation of U.S. global defense posture. Prior to serving as DASD Plans, Mr. Scher was the Deputy Assistant Secretary for South and Southeast Asia within the Office of the Assistant Secretary of Defense for Asian and Pacific Security Affairs. In this capacity, Mr. Scher served as the principal advisor to senior leadership within the Department of Defense for all South and Southeast Asia policy matters pertaining to strategies and plans, including international strategy development, and implementation. He was responsible for managing the bilateral security relationships with the nations of this region and spearheaded DoD participation in regional multilateral fora.

Prior to his first appointment in 2009, Mr. Scher was an associate at the consulting firm of Booz Allen Hamilton where he led efforts to assist Asian nations in improving their defense and national security decision making processes. He also led analytical efforts supporting the Office of the Secretary of Defense (OSD) on strategy development and Asia-related issues. Earlier, Mr. Scher worked for 15 years in the Departments of Defense and State, and held numerous posts covering Asian security and defense policy issues. He served as Chief-of-Staff to the Deputy Under Secretary of Defense for Asian and Pacific Affairs in the Office of the Secretary of Defense, overseeing the operation of the OSD office responsible for bilateral and multilateral security relations in Asia. Additionally, Mr. Scher helped develop the strategic basis for U.S. defense strategy, participating in the oversight of the 1993 Bottom-Up Review and the 1997 Quadrennial Defense Review. He co-authored Presidential Decision Directive-56 on conducting complex contingency operations, and was involved in planning for U.S. support to operations ranging from Iraqi election support to deploying U.S. forces to East Timor and the southern Philippines. While at the Department of State, he served on the Secretary's Policy Planning Staff providing advice on Asia, counterterrorism and political military affairs. Mr. Scher entered government service through the Presidential Management Fellowship Program.

**EDUCATION:** Mr. Scher has a Bachelor of Arts from Swarthmore College, conferred with High Honors, and a Masters of International Affairs from Columbia University's School of International and Public Affairs, where he was awarded a DuPont International Affairs Fellowship.

HOUSE COMMITTEE ON ARMED SERVICES  
SUBCOMMITTEE ON STRATEGIC FORCES

STATEMENT OF  
ADMIRAL C. D. HANEY  
COMMANDER  
UNITED STATES STRATEGIC COMMAND  
BEFORE THE  
HOUSE COMMITTEE ON ARMED SERVICES  
SUBCOMMITTEE ON STRATEGIC FORCES  
14 JULY 2016

HOUSE COMMITTEE ON ARMED SERVICES  
SUBCOMMITTEE ON STRATEGIC FORCES

**INTRODUCTION**

Mr. Chairman and distinguished members of the committee, I am honored to be here today. Thank you for the opportunity to provide testimony on the critical need to modernize America's nuclear deterrent capabilities. I am also pleased to be here with Mr. Frank Klotz, Undersecretary of Energy for Nuclear Security and Administrator for the National Nuclear Security Administration (NNSA); Mr. Robert Scher, Assistant Secretary of Defense for Strategy, Plans and Capabilities; and General Robin Rand, Commander, Air Force Global Strike Command. I thank you all for your continued support to our Nation's defense.

Our ability to ensure global security depends upon the modernization of our aging nuclear enterprise. Recapitalization of our delivery platforms and weapons; reinvestment in our intellectual capital and infrastructure; and continued improvements to our Nuclear Command, Control, Communications (NC3) and early warning systems are vital to maintaining a safe, secure, effective and credible nuclear deterrent force. As nuclear threats continue to endure and evolve, our nuclear enterprise plays a critical role in providing strategic stability in an uncertain world.

**GLOBAL SECURITY ENVIRONMENT**

Today's global security environment is complex, dynamic and volatile. The dangers presented by this unpredictable security environment are compounded by the continued propagation of asymmetric methods, the unprecedented proliferation of advancing technologies, including advances in air-defense technologies, and the increasingly provocative and destabilizing behavior by potential adversaries like Russia, China, North Korea and Iran. Some nations are investing in long-term military modernization programs, including capabilities that could pose an existential threat to the United States. A number of others are developing new

capabilities, sustaining, and/or modernizing their nuclear forces, including weapons and platforms that are mobile, hardened and underground.

**Russia.** Russia's new security strategy makes clear that it seeks to re-assert its great power status at the cost of its neighbors and regional stability. Russia is modernizing its conventional and strategic nuclear military programs, emphasizing new strategic approaches, declaring and demonstrating its ability to escalate if required, and maintaining a significant quantity of non-strategic nuclear weapons (NSNW). Russia has engaged in destabilizing actions in Syria and Ukraine (Eastern and Crimea), continues to make overt and implied threats against our friends and allies in Europe, while also violating the Intermediate-range Nuclear Forces Treaty and other international accords and norms. Finally, Russia is rapidly developing advanced counter-space and cyber capabilities.

Despite these activities, there is continued adherence to the New Strategic Arms Reduction Treaty (New START) by both nations. One benefit of New START is that it promotes stability by maintaining essential equivalency in nuclear weapon numbers and strategic capability. It also promotes transparency via inspections and helps assure our non-nuclear allies, alleviating their need to pursue nuclear deterrent capabilities. However, to maintain strategic stability and ensure a viable and credible strategic and extended deterrence / assurance capability as we draw down to New START central limits, the systems we retain must be safe, secure, effective and credible. This is especially important given there is no arms control agreement limiting Russian (NSNW). Most concerning is that these uncounted weapons are intended for regional use in conditions short of intercontinental war.

In compliance with a series of treaties, the United States has reduced its stockpile by 85 percent relative to its Cold War peak. Instead of dozens of delivery systems, we now have four



strategic delivery platforms. We seek no new military capabilities in our nuclear forces. Rather, we seek to retain and modernize only those capabilities needed to sustain a stable and effective strategic and extended deterrence / assurance capability. We are on track to achieve New START limits of 1550 deployed warheads and 700 deployed delivery systems by February 2018.

**China.** In addition to pursuing regional dominance in the East and South China Seas, China continues making significant military investments in nuclear and conventional capabilities. China is re-engineering its long-range ballistic missiles to carry multiple nuclear warheads and continues to develop and test hyper-glide vehicle technologies. China's pursuit of conventional prompt global strike capabilities, offensive counter-space technologies, and exploitation of computer networks raises questions about its overarching intentions. While China periodically reminds us of its “No First-Use” nuclear policy, these developments – coupled with a lack of transparency on nuclear issues such as force disposition and size – may impact regional and strategic stability and are cause for continued vigilance and concern.

**North Korea (DPRK).** The DPRK’s behavior over the past 60 years has been very erratic, and is cause for significant concern among our allies and partners in the Asia-Pacific region, particularly Japan and South Korea, as well as the international community at large. Kim Jong-Un continues to defy international norms and resolutions, as demonstrated by a number of provocative actions this year, including the DPRK’s fourth nuclear test. We also see the DPRK working to develop Intercontinental Ballistic Missile (ICBM) and Submarine Launched Ballistic Missiles capabilities, as well as an improved Intermediate Range Ballistic Missile. The DPRK’s coercive, irresponsible rhetoric and actions undermine regional stability. The US nuclear modernization strategy must provide credible extended deterrence in this region to assure our allies that they need not pursue nuclear programs of their own.

**Iran.** Iran follows the mandates of the Joint Comprehensive Plan of Action, but it continues to develop ballistic missiles and cyberspace capabilities – and we remain focused on countering its destabilizing activities in the region.

**Violent Extremist Organizations (VEOs).** Ungoverned or ineffectively governed regions remain incubators for those who seek to attack the world's peaceful societies. VEOs recruit and operate freely across political, social, and cyberspace boundaries. Weapons of mass destruction (WMD) in the hands of VEOs would be catastrophic to say the least, and highlights the importance of our non-proliferation and counter-WMD efforts.

In summary, the global strategic environment is increasingly complex. Unlike the bipolar world of the Cold War, today's multi-polar world with state, non-state and mixed-status actors is an environment consisting of many players with diverging interests. This dynamic severely challenges regional security and global strategic stability. Undoubtedly, future conflicts will not be contained within prescribed borders, stove-piped domains, or segregated areas of responsibility. Rather, we must view threats as transregional, multi-domain and multi-functional, requiring a comprehensive approach to strategic deterrence, assurance and escalation control.

#### **USSTRATCOM IN THE 21<sup>ST</sup> CENTURY**

USSTRATCOM counters diverse and complex threats through the execution of its fundamental mission: **to detect and deter strategic attacks against the U.S. and our allies, and to defeat those who attack if deterrence fails.** USSTRATCOM is assigned nine distinct responsibilities: **Strategic Deterrence; Space Operations; Cyberspace Operations; Global Strike; Joint Electronic Warfare; Missile Defense; Intelligence, Surveillance and Reconnaissance; Countering Weapons of Mass Destruction; and Analysis and Targeting.**

These diverse missions are strategic in nature, global in scope, and intertwined with Joint Force capabilities, the interagency process and require a Whole-of-Government approach. **Each mission supports, or is interconnected with the others, and their combined capabilities enable a comprehensive approach to strategic deterrence, assurance and escalation control in the 21<sup>st</sup> century.**

Strategic deterrence is a complex subject that is foundational to our nation's security. It depends on the situation and we must master it to ensure that no adversary will gain the benefits they seek, no adversary can escalate their way out of a failed conflict, and all adversaries understand that we can and will, if necessary, respond in a time, place, and manner of our choosing.

Deterrence is a fundamentally human endeavor, firmly rooted in psychology and social behavior. At the most basic level, deterrence is achieved through one of two mechanisms. The first is an aggressor's recognition that unacceptable costs may be imposed for taking an action and recognition that foregoing this action may result in lesser costs. The second is an aggressor's belief that the contemplated action will not produce its perceived benefit, or that not acting will produce a greater perceived benefit. These elements combine to convince potential adversaries that they will not succeed in an attack, and even if they try, the costs will far outweigh the benefits. USSTRATCOM's capabilities underpin these fundamental elements of deterrence, affording the United States the ability to maintain strategic stability.

Achieving comprehensive strategic deterrence, assurance and escalation control requires flexibility and the analysis of numerous courses of action (COA) to determine the best option or combination of options to address a given situation. These COAs include nuclear weapons systems along with a robust intelligence apparatus; highly diverse conventional and asymmetric

capabilities, including space, cyberspace, kinetic weapons, and missile defenses; global command, control, and communications; and comprehensive plans that link organizations and knit their capabilities together in a coherent way. However, as we look to the future, continued strategic stability is dependent on ensuring our nuclear force modernization plan of record is executed without delay.

**Priorities.** USSTRATCOM is guided by my six overarching priorities:

**1. Deterring strategic attack against the United States and providing assurance to our allies.** Strategic attacks can occur through a variety of means in any domain. They may impact many people or systems, affect large physical areas, act across great distances, persist over long periods of time, disrupt economic or social structures, or change the status quo in a fundamental way.

**2. Providing the Nation with a safe, secure, effective and ready nuclear deterrent force.** Foundational documents such as the 2010 Nuclear Posture Review, the 2013 Report on Nuclear Weapons Employment Strategy, the 2014 Quadrennial Defense Review (QDR), and the 2015 National Military Strategy have consistently repeated this mandate. I am committed to providing our Nation with a viable and credible nuclear deterrent force.

**3. Delivering comprehensive warfighting solutions.** To effectively deter, assure, and control escalation in today's security environment, threats must be surveyed across the "spectrum of conflict." Escalation may occur at any point, in varying degrees of intensity, with more than one adversary, in multiple domains, to include "below threshold activities" that would not ordinarily prompt international action. Our actions and capabilities must convince any adversary that they cannot escalate their way out of a failed conventional conflict, and that restraint is always the better option. Doing so requires a deeper, broader understanding of our

potential adversaries, so that we can deny action; hold critical nodes at risk; and prevent activities, perceptions and misperceptions from escalating. We must also look at our military capabilities in a holistic manner, and fully integrate them within our other elements of national power. We must pursue a Whole-of-Government approach to deterrence, including allies and partners in our efforts, with ready forces in all domains.

**4. Addressing challenges in space and cyberspace with capability, capacity and resilience.** These capabilities are critical to all USSTRATCOM missions, including the strategic deterrent mission.

**5. Building, sustaining and supporting partnerships.** We aim to work seamlessly with the other Combatant Commands, across the federal government, commercial sector, academia and with partners and allies to apply the scope of the USSTRATCOM portfolio toward a synchronized pursuit of national objectives.

**6. Anticipating change and confronting uncertainty with agility and innovation.** Sound decision-making requires thorough analysis to prioritize our activities with flexible, agile and adaptable thinking. This effort includes a variety of wargames, demonstrations and exercises to evaluate deterrence and escalation control options.

#### **MISSION AREA CAPABILITIES & REQUIREMENTS**

We must maintain a military capability that provides our leadership with the decision space to respond in the best interest of the United States. This includes the ability to mitigate current and future risk as it pertains to nuclear threats. Therefore, prioritizing resources to meet our requirements necessitates a thoughtful assessment of national priorities in the context of fiscal realities. The President's Budget supports my mission requirements, but there is no margin

to absorb risk. Any cuts to the budget will hamper our ability to sustain and modernize our military forces, and will add significant risk to our strategic capabilities.

#### **Nuclear Deterrent Forces**

Although the United States possesses conventional weapons and forces that are second to none, we must retain a safe, secure, effective and ready nuclear deterrent force to maintain strategic stability and provide extended deterrence and assurance. Our nation's nuclear capabilities have served the country well for over 70 years. At points throughout this period, tensions have ebbed and flowed in our interactions with adversaries and potential adversaries. One constant during this time has been our nuclear deterrent. The United States deterred strategic attack against our nation and allies and avoided great power war against nuclear-capable adversaries. This capacity to prevent catastrophic conflict has been unprecedented throughout modern history, and highlights the stabilizing influence of America's nuclear arsenal. However, our ability to continue to provide strategic stability depends upon the modernization of our nuclear enterprise. Sustainment alone will not meet future adversarial threats. We simply must modernize.

**Nuclear Triad.** Our nuclear Triad is a requirement. Each leg of the Triad provides unique capabilities and hedges the other legs of the Triad against uncertainty. Combined, they provide a robust deterrent capability in an ever-changing security environment. The policy of maintaining a Triad of strategic nuclear delivery systems was most recently re-iterated in the 2014 QDR. Our ICBMs, Ballistic Missile Submarines (SSBNs), nuclear-capable heavy bombers armed with nuclear Air-Launched Cruise Missiles (ALCM) and gravity bombs, and associated tankers each provide unique and complementary attributes that together underpin strategic stability and extended deterrence /assurance—and each element is in urgent need of continued

investment. Our ICBMs, strategic bombers, and SSBNs were fielded between 1960 and 1980. The extended service of our nuclear delivery platforms is testament to the efforts and ingenuity of our predecessors, as well as our design engineers, maintainers, and industry partners. But these aging capabilities are fast approaching the point at which the effectiveness of our nuclear deterrent will be put at risk. This is critical in a global security environment where other nuclear-capable nations are clearly placing a high priority on developing, sustaining, and modernizing – and in some cases expanding – their nuclear forces. The United States, however, is retaining and modernizing only those systems needed to sustain an effective deterrent.

The Triad provides flexible and tailorable strike options that allow the President alternatives to hold assets an adversary values at risk, while simultaneously hedging against technical problems or changes in the security environment. To do this, the Triad must consist of independently viable weapons systems and platforms which present adversaries with a complex, multi-faceted problem. Additionally, the United States commitment to extended deterrence and assurance of allies is essential to realizing long term nuclear non-proliferation goals.

Air-delivered nuclear weapons offer unique strategic deterrence value in that they are readily capable of providing both strategic and extended deterrence. The B-21 bomber (formerly known as the Long Range Strike-Bomber), Long Range Stand-Off (LRSO) Cruise Missile, and B61-12 gravity bomb are all needed to provide flexibility in strategic deterrence and provide the President tailorable options should deterrence fail. The B61-12 also arms US and allied dual capable aircraft (DCA) in support of NATO commitments.

**Bombers.** Our B-52 and B-2 bombers are the most flexible and adaptable leg of the nuclear Triad and also provide significant conventional capabilities. Bombers play a key role in stabilizing and managing crises by providing a visible signaling option and rapid hedge against

operational and technical challenges in other legs of the Triad. Ongoing and planned sustainment and modernization activities, to include associated NC3 upgrades, will ensure our bombers provide credible deterrent capabilities until their planned end-of-service-life. I fully support the Air Force program for fielding a new, highly survivable penetrating conventional and nuclear B-21 Bomber. When coupled with a new LRSO cruise missile and the B61-12 gravity bomb, the B-21 will provide the President with flexible options to address a range of contingencies in highly contested and non-permissive, anti-access / area denial environments. Maintaining an air-delivered standoff and direct attack capability is vital to meeting our strategic and extended deterrence commitments and denying geographic sanctuaries to potential adversaries. The LRSO is needed to replace the aging ALCM, which has far exceeded its originally planned service life and is being sustained through a series of service life extension programs. Likewise, the B61-12 is needed to extend the life of aging nuclear gravity weapons and provide continued viability for both the B-2 strategic bomber and DCA supporting our NATO and extended deterrence commitments. The B-21 will be capable of employing both the B61-12 and the LRSO.

While some contend there is no need for both the LRSO and a stealth bomber, I am convinced that both systems are absolutely necessary to provide strategic deterrence and stability. The B21 bomber, the LRSO cruise missile, and the B61-12 gravity bomb – in combination – significantly complicate a potential aggressor's planning and strategic investment. Overcoming such a highly complex strategic problem imposes excessively high costs on any potential aggressor. No conventional weapon or combination of conventional weapons can attain a comparable deterrent effect or maintain strategic stability as well as the combined attributes of the B21, LRSO and B61-12 against a nuclear armed adversary.



**ICBMs.** The Minuteman has provided over 50 years of service and the military requirements for this leg of the Triad remain unchanged. Our current plans to replace our existing Minuteman III system are just in time. Recapitalization is necessary to ensure a viable ICBM force well into the future and to ensure that an adversary cannot launch a comprehensive counterforce attack on the United States by striking only a handful targets.

I support the President's budget request for the GBSD program. The Air Force GBSD Analysis of Alternatives (AoA) confirmed the need for Minuteman weapon system recapitalization, concluding the life-cycle costs for a GBSD replacement system were lower than continuing to modernize and life extend the existing Minuteman III capability. The Air Force intends to pursue an operational capability through low risk technology solutions designed to meet warfighter requirements while retaining sufficient flexibility to address future emergent threats. I support the Air Force in their efforts to achieve an operational capability beginning in the late 2020s.

**SSBNs.** Recapitalizing our sea-based strategic deterrent force remains my top modernization priority. The Navy's SSBNs and Trident II D5 ballistic missiles constitute the Triad's most survivable leg. The Ohio-class SSBN fleet is undergoing significant sustainment efforts to maintain our nation's required high operational availability and extend the life of the D5 ballistic missile. USSTRATCOM continues to strongly support and work with the Navy as it works to modernize the SSBN fleet. The Ohio Replacement SSBN, currently in development and expected to be fielded beginning in 2031, will continue to serve as the Nation's survivable strategic deterrent into the 2080s. Despite a hull life extension from 30 to 42 years, the current Ohio-class is quickly approaching the end of its effective service life. No further extension is possible. Any further delay will put the reliability of our sea-based nuclear deterrent at

unacceptable risk. In addition, we must continue our commitment to the United Kingdom to develop and field the Common Missile Compartment to ensure both nations' SSBNs achieve operational capability to replace the existing platforms. The FY 2017 budget request funds the Ohio-Replacement Program to ensure the uninterrupted deployment of the Triad's most survivable leg. Ohio-Replacement remains my top modernization priority, and we can accept no more risk or delays to this effort.

**Weapons and Infrastructure.** Today's stockpile remains safe, secure, effective and credible and meets operational requirements. However, our nuclear weapons (now averaging 27 years of service) and supporting infrastructure (some dating back to the Manhattan Project) are in dire need of modernization and life extension. Our stockpile is the oldest it has ever been. Surveillance activities, Life Extension Programs (LEPs), and Stockpile Stewardship efforts are essential to mitigate age-related effects and incorporate improved safety and security features without a return to underground nuclear explosive testing. Continued talent pool investment with our nuclear scientists and engineers is also paramount to provide viability to our stockpile requirements.

As a member of the Nuclear Weapons Council (NWC), I work closely with my DOD and NNSA counterparts to ensure we maintain a safe, secure, and effective nuclear stockpile. Active and sustained execution of the NWC's long-term "3+2" strategy to deliver three ballistic missile warheads and two air-delivered weapons (B61-12 and LRSO) is crucial to address near-term technical needs and future capability requirements. W76-1 and B61-12 LEPs are on track and are necessary to maintain confidence in the reliability, safety and intrinsic security of our nuclear weapons. The LRSO will not field a new nuclear warhead. Rather, the W80-4 warhead will reuse the W80-1 warhead design fielded on the current ALCM, supplemented with additional

surety features. Early activities are underway to synchronize the LRSO cruise missile program with the W80-4 warhead LEP to ensure these programs are fielded in time to maintain a viable stand-off nuclear capability. The President's Budget ensures schedule alignment of the cruise missile and its associated warhead. The contract for the B-21 bomber was awarded to Northrup Grumman in October 2015.

**Budget.** Sustaining and modernizing the nuclear enterprise infrastructure is crucial to maintain a viable nuclear deterrent force. It is impressive to see today's systems working well beyond their expected service life, but we cannot rely on this indefinitely. Aging weapon systems and supporting infrastructure are stressing our ability to maintain a viable and credible force.

I share concerns about the cost of modernization, but the greater worry is the cost of not making needed investments. There must be a sustained, multi-decade investment program in our weapons, delivery systems and supporting infrastructure. Referencing Congressional Budget Office studies, while current sustainment cost of our strategic deterrent capability is 3 percent of defense appropriations, the expected cost of nuclear forces during modernization, including sustainment and operation of force as well as recapitalization, will represent approximately 5 percent to 7 percent of the total costs of the planned defense budgets for the next ten years. The importance of the foundational nuclear deterrent force to national security, assurance to our allies, our non-proliferation objectives and strategic stability far outweigh the expense of recapitalization. Failing to provide the resources requested in the FY 2017 budget would delay the development of these programs and unacceptably degrade our credibility and ability to deter and assure. Our Nation must make this investment.

**CONCLUSION**

Strategic deterrence is foundational to current and future strategic stability and our nation's security. We must maintain the ability to ensure that potential aggressors always see restraint as the better option, that they will not gain the benefits they seek, that they cannot escalate their way out of a failed conflict, and that we can and will, if necessary, respond appropriately to any manner of attack against the United States and our allies.

Achieving strategic deterrence, assurance and escalation control will require a multi-faceted, long-term approach to modernizing strategic capabilities and a renewed commitment to sustaining intellectual capital. Investment in our Nation's strategic capabilities is sorely needed and must not be delayed.

The importance of these capabilities to strategic stability are essential when considering nations like Russia, China, and the DPRK continue to develop, field and maintain strategic-range nuclear capabilities. Sustainment alone will not meet future adversarial threats. Modernization is not only necessary to maintain capabilities for today's threats; it is necessary to ensure we have the flexibility and options to address future uncertainty.

In today's uncertain times, your continued support, combined with the hard work of the exceptional men and women of United States Strategic Command, will ensure that we remain ready, agile and effective in deterring strategic attack, assuring our Allies and partners, and addressing current and future threats.

**Admiral Cecil D. Haney**  
**Commander, U.S Strategic Command**

Admiral Cecil Haney, a native of Washington, D.C., is a 1978 graduate of the United States Naval Academy.

His career as a submariner includes assignments in USS John C. Calhoun (SSBN 630), USS Frank Cable (AS 40), USS Hyman G. Rickover (SSN 709), USS Asheville (SSN 758), and Submarine Squadron 8, culminating in command of USS Honolulu (SSN 718).

Subsequent fleet command assignments include Submarine Squadron 1 from June 2002 to July 2004, and Submarine Group 2 from October 2006 to March 2008.

Haney's shore duty tours include administrative assistant for enlisted affairs at Naval Reactors; congressional appropriations liaison officer for the Office of the Secretary of Defense (Comptroller); deputy chief of Staff of Plans, Policies and Requirements, U.S. Pacific Fleet (N58); director, Submarine Warfare Division (N87); director, Naval Warfare Integration Group (N00X); deputy commander, U.S. Strategic Command and Commander, U.S. Pacific Fleet.

Haney holds master's degrees in Engineering Acoustics and System Technology from the Naval Post Graduate School, and a master's degree in National Security Strategy from the National Defense University.

Haney's decorations include the Navy Distinguished Service Medal (two awards), Defense Superior Service Medal (two awards), Legion of Merit (four awards), Navy Commendation Medal (three awards), Navy Achievement Medal (two awards), and various campaign and unit awards. In addition, he was the 1998 Vice Admiral James Bond Stockdale Leadership Award recipient.

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HOUSE ARMED SERVICES COMMITTEE  
STRATEGIC FORCES SUBCOMMITTEE  
UNITED STATES HOUSE OF REPRESENTATIVES

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE HOUSE ARMED SERVICES COMMITTEE  
STRATEGIC FORCES SUBCOMMITTEE  
UNITED STATES HOUSE OF REPRESENTATIVES

SUBJECT: The Obama Nuclear Deterrent Modernization Plan and Schedule

STATEMENT OF: General Robin Rand, Commander  
Air Force Global Strike Command

July 14, 2016

NOT FOR PUBLICATION UNTIL RELEASED BY  
HOUSE ARMED SERVICES COMMITTEE  
STRATEGIC FORCES SUBCOMMITTEE  
UNITED STATES HOUSE OF REPRESENTATIVES

**Introduction**

Chairman Rogers, Ranking Member Cooper, and distinguished Members of the Committee; thank you for allowing me to come before the committee today to discuss nuclear deterrence and the need for modernization. I look forward to explaining why nuclear deterrence and long range global strike are absolutely critical to this Nation's interests; we cannot afford to delay modernizing and recapitalizing these important weapon systems.

**Air Force Global Strike Command (AFGSC) Mission**

As you know, the Command was created to provide a focus on the stewardship and operation of two legs of our nation's nuclear triad while also accomplishing the conventional global strike mission. In the near future, the command will also become responsible for all Air Force activities supporting USSTRATCOM, overseeing Nuclear Command, Control, and Communications (NC3) as a weapon system, and assuming responsibility for the E-4B and the USNORTHCOM Mobile Command and Control Center. Therefore, it is imperative we be flexible enough to operate seamlessly in a world that continues to rapidly change. Until we have the peace and security of a world without nuclear weapons, we must never forget the stabilizing influence the triad has on our allies, partners, and adversaries. In order for us to be effective across the spectrum of conflict, from day-to-day deterrence and assurance operations to nuclear engagement, our Airmen must be ready and equipped with the right tools to do the job.

The Command's top priority is to ensure our nuclear arsenal is safe, secure, and effective. This priority underlies every nuclear-related activity in AFGSC whether it is the maintainer turning wrenches or our planners working on future weapon systems. We must never fail in the special trust and confidence the American people have bestowed on our nuclear warriors. It means that leaders must continue to support and advocate for the sustainment, modernization, and survivability of these weapon systems.

**Threat Environment**

The current nuclear threat environment facing our nation has never been more complex, and will only become more so in the near future. Potential adversaries continue an unprecedented modernization effort across the full spectrum of nuclear capabilities including

Intercontinental Ballistic Missiles (ICBMs), Submarine Launched Ballistic Missiles (SLBMs), and land attack nuclear weapons.

Russia places the highest priority and investment on the maintenance of its robust arsenal of strategic and nonstrategic nuclear weapons. It is modernizing its strategic nuclear forces and upgrading its command and control facilities. Russia will field more road-mobile SS-27 Mod-2 ICBMs with multiple independently targetable reentry vehicles, deploy more Dolgorukiy class ballistic missile submarine with SS-N-32 Bulava submarine launched ballistic missiles, and will continue the development of next generation ICBMs and cruise missiles

In the Pacific, China has the world's largest and most comprehensive missile force, and has prioritized the development and deployment of regional ballistic and cruise missiles to expand its conventional strike capabilities. China is modernizing its nuclear forces by enhancing silo and underground facility-based ICBMs and adding more road-mobile systems. In addition, the People's Liberation Army Navy deployed the JIN-class nuclear-powered ballistic missile submarine in 2015, which, when armed with the JL-2 SLBM, provides Beijing its first sea-based nuclear deterrent.

North Korea's nuclear weapons and evolving ballistic missile programs underscore the growing threat. The North Korean display of a new or modified road mobile ICBM during a recent parade and its recent tests of a new submarine-launched ballistic missile capability highlight its commitment to diversifying its missile forces and nuclear delivery options, while strengthening missile force survivability. North Korea also continues efforts to expand its stockpile of weapons grade fissile material. In early January, North Korea issued a statement claiming it had successfully carried out a hydrogen bomb test, and on February 7, Pyongyang launched a space launch vehicle from a west coast testing facility. The technology involved in a satellite launch would be applicable to North Korea's other long-range missile programs and is prohibited under United National Security Council resolutions. As of June 21, North Korea has attempted six MUSUDAN Intermediate Range Ballistic Missile (IRBM) launches with one assessed as a limited success and have claimed that they now possess the technology to miniaturize a nuclear warhead. North Korea's continued development of long and short range missiles threaten our allies in the region and will ultimately threaten the U.S. mainland as their ICBM program matures.



### **Air Force Global Strike Command Forces**

#### ***Intercontinental Ballistic Missile Forces***

The 450 dispersed and hardened missile silos maintain strategic stability by presenting potential adversaries a near insurmountable obstacle should they consider a disarming attack on the U.S. Currently, no potential adversary can hope to destroy this force without depleting its own arsenal. Additionally, the ever alert ICBM force provides the President with a rapid response capability which in turn allows bombers to execute conventional missions and the submarine fleet to maintain sustainable port rotations. ICBMs are a cost effective force multiplier for the air and sea legs of the triad. In order to continue providing strategic stability and day-to-day employment flexibility, it is imperative that we must recapitalize our ICBM fleet. Parts and reverse-engineering manufacturing are becoming problematic, and in the long term, more expensive than fielding a new or recapitalized weapon system. Additionally, ICBM boosters have an age out date of 27 years while the ICBM guidance system's age out date is 25 years after manufacture.

As part of our plan to meet New START limits of 400 operational silos, we have pulled missiles from 27 of the planned 50 launch facilities (LF). This action reduces the number of deployed ICBMs consistent with New START limits. These 50 fully operational silos are spread throughout the force and will remain capable of receiving a booster if needed. Also, as directed by the Nuclear Posture Review to enhance strategic stability and meet New START warhead limits, we have reduced the entire MMIII force each to a single warhead.

#### ***Minuteman III***

We continue to sustain the Minuteman III ICBM to ensure it is safe, secure, and effective through its remaining life cycle. This includes upgrading the command, control, and communications systems and support equipment. We continue moving forward on the Transporter Erector Replacement Program (TERP) and the Payload Transporter Replacement (PTR) to modernize our existing fleet of large maintenance vehicles utilized to transport missile components to and from the field. We currently expect TERP to reach initial operational capability (IOC) in FY18 and PTR to begin production in FY17.

We are also equipping ICBM launch control centers (LCC) and the airborne launch control system (ALCS) with critical communications systems upgrades to replace degrading, obsolete systems and to update encryption capability. We continue to push forward on

improving Remote Visual Assessment at our remote LFs, a significant security upgrade, to improve situational awareness and security. We expect this program to be IOC in FY19. Another very important program, ICBM Cryptographic Upgrade II, is scheduled to begin production in FY17 and will improve our cryptographic security while dramatically streamlining code change operations.

The Minuteman III system has proven to be a steadfast and capable contribution that underpins our nation's strategic deterrence posture. Unfortunately, we are at a point where continuing subsystem modifications and just in time sustainment actions are no longer a viable option to extend the life of this aging system. A replacement system is necessary to preserve the stabilizing land-based force presence beyond 2030 and take advantage of efficiencies of state of the art technologies and architectures.

***Ground Based Strategic Deterrent (GBSD)***

The Minuteman flight system, currently on its third model, has been on continuous alert since the early 1960s and has proven its value in deterring our adversaries and assuring our allies well beyond the platform's initial 10-year lifespan. ICBM capability gaps were identified and validated by the Joint Requirements Oversight Council, and subsequently approved in August 2012 by the Air Force Chief of Staff, resulting in an Analysis of Alternatives (AoA). The AoA was completed in 2014 and concluded that integrated full-scale replacement to the MM III weapon system was the most cost-effective approach to filling capability gaps and addressing supportability issues. Additionally, we are engaged with our Navy partners to further investigate areas for intelligent commonality between potential GBSD systems and future Navy weapons. We hope to find areas of overlap with the objective of reducing design, development, manufacturing, logistics support, production, and testing costs for the nation's strategic systems while still acknowledging that the different weapon systems will have some requirements that necessitate unique solutions due to their differing missions and operational environments. We are also collaborating with the NNSA to develop a life extension program for our aging W78 nuclear warhead, which will operate on GBSD.

The Minuteman III flight system experiences propellant/component age out and subsystem attrition issues in the 2030 timeframe. In addition, the command and control (C2), supporting subsystems (power, environmental, etc.) and infrastructure [facilities] recapitalization is necessary to continue safe, secure, and effective operations. It is no small task to upgrade the

C2 systems along with the underlying infrastructure supporting the weapon system. For example, at our largest missile field operated by the 341st Missile Wing, we must connect and support hardened systems across almost 14,000 square miles, an area the size of Maryland. This vital nuclear C2 is currently serviced by buried copper wire and equipment installed in the 1960s. AFGSC is defining approaches to replace C2 and modernize necessary facilities that are supportable over the life cycle and reduces the costs to operate the system. GBSD cannot be viewed as just another life extension to our existing MMIII; it is time to field a replacement ground-based capability that can be integrated into a modernized C2 system so we can continue assuring our allies and deterring potential adversaries well into the future. Thank you for your continued support of GBSD and ensuring it will lead to a viable replacement for the MM III ICBM.

#### ***UH-1N***

AFGSC is the lead command for the Air Force's fleet of 62 UH-1N helicopters. The majority of these aircraft support two critical national missions: nuclear security in support of the ICBM force and the Continuity of Operations and transport missions in the National Capitol Region. They also actively participate in the Defense Support of Civil Authorities program often being called upon to help with search and rescue activities.

The UH-1N does not meet the missile field needs for range, speed, and capacity as outlined by DOD and USSTRATCOM requirements. We have aggressively employed mitigation measures such as arming the UH-1N, providing re-fueling stations throughout the missile complex, fast rising B-Plugs at our launch facilities, and additional forward positioning of security forces "defenders" in the missile fields; however, these measures drive addition manpower, training, and infrastructure costs that would be eliminated with a properly equipped medium lift helicopter.

#### ***UH-1N Follow On***

We are dedicated to replacing the UH-1N with a medium lift helicopter capable of meeting mission requirements. The UH-1N Replacement Program was funded in FY 2016 and we are now moving out to deliver this capability in order to close this critical gap. This past January, the Air Force conducted a High Performance Team which confirmed our most critical capability requirements. Our counterparts in SAF/AQ and Air Force Materiel Command (AFMC) are developing and presenting an acquisition strategy, in August 2016, to support a full

and open competition for the UH-1N Replacement Program. While we work to deliver the aircraft, we must also work through support challenges such as infrastructure, maintenance, and aircrew training. I can assure you that Secretary James, General Goldfein, and I are completely dedicated to delivering the replacement helicopters as soon as possible.

#### ***Bomber Forces***

The B-52 is an extremely versatile weapon system providing precision, large payload, and timely global strike capabilities both conventional and nuclear weapons. Complementing the B-52, the B-2 can penetrate an adversary's most advanced Integrated Air Defense Systems to strike heavily defended and hardened targets. Our flexible dual-capable bomber fleet is the most visible leg of the nuclear triad. They provide decision makers the ability to demonstrate resolve through generation, dispersal, or deployment. Additionally, our ability to rapidly place bomber sorties on alert ensures their continued survival in support of the President and to meet combatant command requirements.

#### ***B-52***

The B-52 may be the most universally recognized symbol of American airpower...its contributions to our national security through the Cold War, Vietnam, Desert Storm, Allied Force, Iraqi Freedom, Enduring Freedom and now Operation Inherent Resolve are well documented. Our Airmen continue to enable the B-52 to deliver the highest mission capable rate of all bombers as it flies in combat against ISIL even while it shows our resolve deployed to the Pacific and northern Europe. The B-52 is able to deliver the widest variety of nuclear and conventional weapons. Even now, we maintain complete coverage of our Nuclear Deterrence Operations requirements while supporting our overseas Continuous Bomber Presence for Pacific Command.

I anticipate the B-52 will remain a key element of our bomber force beyond 2050. Its airframe and multi-faceted capabilities continue to prove robust, so it is paramount to invest resources into this aircraft now to keep it more viable in both conventional and nuclear mission areas for the next 30 years. Our B-52s are still using 1960s radar technology which is creating maintenance challenges because of the radar's high mean time between failure rate. This causes a 35% chance of the radar's failure during a 20 hour combat mission, which is unacceptable. The current radar on the B-52 will be even less effective in the future threat environment, and without an improved radar system on the B-52, there will be increased degradation in mission

effectiveness. To address this deficiency, the B-52 Radar Modernization Program is approaching the conclusion of a Cost Capability Analysis Study and will be working toward an AoA sufficiency review and a Material Development Decision this year. Additionally, we are always looking at cost-effective ways to improve efficiency and performance so we continue to investigate the value added in replacement of the 1960's engines from an operational and financial perspective.

Finally, I want to point out that we are still working to convert 29 operational B-52 aircraft and 12 in storage to a conventional-only configuration as part of our plan to meet New START commitments. As of June 27, we have converted all of the aircraft in storage and 18 of the planned 29 operational B-52s. We are on track to meet our New START Treaty commitments well before the FY18 deadline.

#### ***B-1***

AFGSC acquired the B-1 in October of last year. While no longer nuclear-capable, the B-1 has been the backbone of the USAF's fight against terrorism for the past 10 years, first in Afghanistan and more recently against ISIL in Iraq and Syria. The B-1s came home earlier this year as they continue to undergo the Integrated Battle Station modification, the most extensive update to the aircraft in its 30+ year history. Finally, the B-1 contributes to AFGSC's mission by providing a large payload of conventional weapons to support our primary deterrence mission. It will also be the only USAF threshold platform for fielding the Navy's Long Range Anti-ship Missile, a vital capability for Combatant Commanders.

#### ***B-2***

For over 25 years, our 20 B-2s have provided the nation with an assured penetrating bomber capability. In each of our nation's last conflicts, the B-2 has led the way. This is a direct result of the outstanding Airmen who work to operate, maintain, and secure the aircraft.

We will preserve and improve the B-2's ability to penetrate hostile airspace and hold any target at risk. Two major modernization programs that enable the B-2's effectiveness in future conflicts are the Defensive Management System Modernization and Extremely High Frequency SATCOM programs. These programs are essential to ensure the B-2's ability to penetrate and strike targets in the anti-access and area denial environment (A2AD). We are striving to maintain the proper balance of fleet sustainment efforts, testing, aircrew training, and combat readiness. The dynamics of a small fleet continue to challenge our sustainment efforts primarily

due to vanishing vendors and diminishing sources of supply. AFMC is working to ensure timely parts availability; however, many manufacturers do not see a strong business case in supplying parts for a small aircraft fleet. Problems with a single part can have a significant readiness impact on a small fleet which lacks the flexibility of a large force to absorb parts shortages and logistics delays. In spite of these challenges, the B-2 is able to penetrate enemy defenses and deliver a wide variety of nuclear and conventional weapons due to its stealth and long-range capabilities.

### ***B-21***

The combat edge of our B-2 is being challenged by proliferating next generation air defenses. The B-21 program will extend American air dominance against next generation capabilities and advanced air defense environments. We continue to work closely with partners throughout the Air Force to develop the B-21 and field a fleet of new dual-capable bombers scheduled to become operational in the mid-2020s. Make no mistake – the B-21 will be a nuclear bomber, however it will not be delayed for use in a conventional capacity while it undergoes final nuclear certification. The B-21 is being designed with an open architecture which will allow us to integrate new technology and respond to future threats for many years into the future. Thank you for your continued support for this critical program as it moves forward.

### ***Air Launched Cruise Missile***

The AGM-86B Air Launched Cruise Missile (ALCM) is an air-to-ground, winged, subsonic nuclear missile delivered by the B-52. It was fielded in the 1980s and is already twenty years past its design life which makes it very difficult to maintain. To ensure the USAF maintains its credible stand-off nuclear capability, the ALCM requires Service Life Extension Programs (SLEP). These SLEPs require ongoing support and attention to ensure the ALCM will remain viable through 2030, but this does not in any way remove the need for Long Range Stand Off (LRSO) Missile. Despite the SLEP, this Combatant Command required system is becoming increasingly vulnerable to advanced A2AD threats and our ability to ensure its continued reliability with SLEPs is a concern.

### ***Long Range Stand-Off Missile***

The LRSO is the replacement for the aging ALCM. The ALCM has significant capability gaps that will only worsen through the next decade. The LRSO will be a reliable, flexible, long-range, and survivable weapon system to complement the nuclear Triad. The

LRSO missile will ensure the bomber force (B-52, B-2 and B-21) can continue to hold high value targets at risk in an evolving threat environment, to include targets within an anti-access environment. Additionally, we have synchronized our efforts with NNSA to develop the W80-4 warhead to be fully integrated with LRSO.

#### ***B61***

The B61-12 Life Extension Program (LEP) will result in a smaller stockpile, reduced special nuclear material in the stockpile, and improved B61 surety. AFGSC is the lead command for the B61-12 Tail Kit Assembly program, which is needed to meet USSTRATCOM requirements on the B-2. The B61-12 Tail Kit Assembly program is in the Engineering and Manufacturing Development Phase 1 and is synchronized with NNSA efforts. The design and production processes are on schedule and within budget to meet the planned Fiscal Year 2020 First Production Unit date for the B61-12 Tail Kit Assembly, and support the lead time required for the March 2020 B61-12 all-up round. This joint Department of Defense (DOD) and Department of Energy endeavor allows for continued attainment of our strategic requirements and regional commitments.

#### ***NC3***

The nation's NC3 systems are the life blood by which the President will collaborate with combatant commanders and communicate his nuclear command and control authorities to the nuclear forces. Many of these systems are well past their planned life span and face diminishing manufacturing sources and material shortages. The Air Force has begun a journey to put rigor back into sustainment and modernization of these NC3 systems. With continued focus, exploitation of technological advances, and partnership with industry, NC3 systems will continue to contribute to the nuclear surety of the Nation's arsenal.

#### **Conclusion**

Thank you for your continued support of Air Force Global Strike Command and our strategic deterrent and global strike missions. The President's 2015 National Security Strategy is clear: "As long as nuclear weapons exist, the United States must invest the resources necessary to maintain – without testing – a safe, secure, and effective nuclear deterrent that preserves strategic stability." Fiscal constraints, while posing planning challenges, do not alter the national

security landscape or the intent of competitors and adversaries, nor do they diminish the enduring value of long range, strategic forces to our nation.

Although we account for only 1% of the DOD budget, AFGSC forces represent two-thirds of the nation's nuclear triad and play a critical role in ensuring U.S. national security, while also providing joint commanders rapid global combat airpower. AFGSC will continue to seek innovative, cost-saving measures to ensure our weapon systems are operating as efficiently as possible. Modernization, however, is necessary to continue to meet U.S. nuclear deterrence requirements. AFGSC is operating B-52s built in the 1960s with equipment designed in the 1950s; operating ICBMs with 1960s infrastructure; and utilizing 1960s era weapon storage areas. We cannot afford to delay modernization initiatives across the two legs of the nation's nuclear triad and the NC3 systems which connect our capabilities to the President.

I would like to take this opportunity to thank the Congress for your ongoing support of the nuclear enterprise. Your support does not go unnoticed and is absolutely critical to ensuring AFGSC provides the nuclear and conventional capabilities this Nation deserves. It is my privilege to lead this team empowered with special trust and responsibility. It is truly an honor to be a Wingman to the outstanding Airmen who make up Air Force Global Strike Command.



### **General Robin Rand**

Gen. Robin Rand is the Commander, Air Force Global Strike Command, Barksdale Air Force Base, Louisiana. He is responsible for organizing, training, equipping all U.S. intercontinental ballistic missile and bomber forces. The command's mission is to provide strategic deterrence, global strike and combat support. The command comprises more than 31,000 professionals operating at nine wings that control the nation's inventory of Minuteman III intercontinental ballistic missiles, B-1, B-2 and B-52 bomber aircraft.

General Rand was commissioned in 1979 after graduating from the U.S. Air Force Academy. He's had multiple flying tours; served as an air liaison officer with the U.S. Army; and has had staff tours on the Joint Staff, Office of the Secretary of Defense, and Air Staff. General Rand's previous commands include the 36th Fighter Squadron, USAF Weapons School, 8th Fighter Wing, 56th Fighter Wing, 332nd Air Expeditionary Wing at Salad Air Base, Iraq, 12th Air Force (Air Forces Southern), and prior to this assignment, Air Education and Training Command.

General Rand is a command pilot with more than 5,080 flying hours, including more than 470 combat hours.

#### **EDUCATION**

1979 Bachelor of Science, Aviation Science, U.S. Air Force Academy, Colorado Springs, Colo.  
 1983 Squadron Officer School, Maxwell AFB, Ala.  
 1986 Air Command and Staff College, by seminar  
 1988 Master of Science, Aeronautical Science, Embry-Riddle Aeronautical University, Fla.  
 1990 U.S. Air Force Fighter Weapons Instructor Course, Nellis AFB, Nev.  
 1998 Master of Arts, National Security Policy, Naval War College, Newport, R.I.  
 2010 Joint Flag Officer Warfighter Course, Maxwell AFB, Ala.  
 2012 Pinnacle Course, National Defense University, Fort Lesley J. McNair, Washington, D.C.

#### **ASSIGNMENTS**

1. July 1979- July 1980, Student Pilot, undergraduate pilot training, Williams AFB, Ariz.
2. August 1980 -December 1980, T-37 Pilot, pilot instructor training, Randolph AFB, Texas
3. January 1981 -May 1984, T-37 Instructor Pilot, 82nd Flying Training Wing, Williams AFB, Ariz.
4. May 1984- July 1984, AT-38 Pilot, fighter lead-in training, Holloman AFB, N.M.
5. August 1984- January 1985, F-16 Pilot, F-16 training, 63rd Tactical Fighter Squadron, MacDill AFB, Fla.
6. February 1985- December 1986, F-16 Pilot, 612th Tactical Fighter Squadron, Torrejon AB, Spain
7. December 1986- June 1988, Air Liaison Officer, 3rd Brigade, 1st Armor Division, Bamberg, West Germany
8. July 1988- October 1988, F-16 Pilot, F-16 training, 311th Tactical Fighter Squadron, Luke AFB, Ariz.

General Oct.10, 2013

(Current as of November 2015)



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**DOCUMENTS SUBMITTED FOR THE RECORD**

JULY 14, 2016

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## Message from the President on the New START Treaty



TO THE SENATE OF THE UNITED STATES:

I have considered the United States Senate's December 22, 2010, Resolution of Advice and Consent to Ratification of the Treaty between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms, signed in Prague on April 8, 2010, with Protocol, including Annexes (the "New START Treaty"; Treaty Document 111-5), and I hereby certify that:

1. United States National Technical Means, in conjunction with the verification activities provided for in the New START Treaty, are sufficient to ensure effective monitoring of Russian compliance with the provisions of the New START Treaty and timely warning of any Russian preparation to break out of the limits in Article II of the New START Treaty.
2. The New START Treaty does not require, at any point during which it will be in force, the United States to provide to the Russian Federation telemetric information under Article IX of the New START Treaty, Part Seven of the Protocol, and the Annex on Telemetric Information to the Protocol for the launch of (a) any missile defense interceptor, as defined in paragraph 44 of Part One of the Protocol to the New START Treaty; (b) any satellite launches, missile defense sensor targets, and missile defense intercept targets, the launch of which uses the first stage of an existing type of United States intercontinental ballistic missile (ICBM) or submarine-launched ballistic missile (SLBM) listed in paragraph 8 of Article III of the New START Treaty; or (c) any missile described in clause (a) of paragraph 7 of Article III of the New START Treaty.
3. I intend to (a) modernize or replace the triad of strategic nuclear delivery systems: a heavy bomber and air-launched cruise missile, an ICBM, and a nuclear-powered ballistic missile submarine (SSBN) and SLBM; and (b) maintain the United States rocket motor industrial base.
4. (a) The United States will seek to initiate, following consultation with NATO Allies but not later than 1 year after the entry into force of the New START Treaty, negotiations with the Russian Federation on an agreement to address the disparity between the non-strategic (tactical) nuclear weapons stockpiles of the Russian Federation and of the United States and to secure and reduce tactical nuclear weapons in a verifiable manner; and (b) it is the policy of the United States that such negotiations shall not include defensive missile systems.
5. I intend to (a) accelerate, to the extent possible, the design and engineering phase of the Chemistry and Metallurgy Research Replacement (CMRR) building and the Uranium Processing Facility (UPF); and (b) request full funding, including on a multi-year basis as appropriate, for the CMRR building and the UPF upon completion of the design and engineering phase for such facilities.

7/14/2016

Message from the President on the New START Treaty

6. It is the policy of the United States to continue development and deployment of United States missile defense systems to defend against missile threats from nations such as North Korea and Iran, including qualitative and quantitative improvements to such systems. As stated in the resolution, such systems include all phases of the Phased Adaptive Approach to missile defenses in Europe, the modernization of the Ground-Based Midcourse Defense system, and the continued development of the two-stage Ground-Based Interceptor as a technological and strategic hedge. As I stated in my letter to the Senate of December 18, 2010, the United States believes that these systems do not and will not threaten the strategic balance with the Russian Federation. Consequently, while the United States cannot circumscribe the sovereign rights of the Russian Federation under paragraph 3 of Article XIV of the Treaty, the United States believes continued improvement and deployment of United States missile defense systems do not constitute a basis for questioning the effectiveness and viability of the Treaty, and therefore would not give rise to circumstances justifying the withdrawal of the Russian Federation from the Treaty.

The report called for in the sixth Condition of the Resolution will be provided under separate cover to the Committees on Armed Services and Foreign Relations.

BARACK OBAMA

THE WHITE HOUSE,  
February 2, 2011.

THE WHITE HOUSE  
WASHINGTON

December 20, 2010

The Honorable Lamar Alexander  
United States Senate  
Washington, D.C. 20510-4206

Dear Senator Alexander:

Thank you for your letter regarding funding for the modernization of the nuclear weapons complex and for your expression of support for ratification of the New START Treaty.

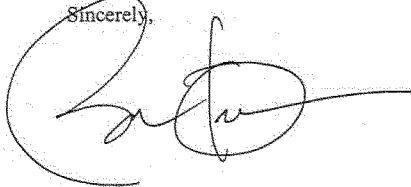
As you know, in the Fiscal Year 2011 budget, I requested a nearly 10 percent increase in the budget for weapons activities at the National Nuclear Security Administration (NNSA). In May, in the report required by Section 1251 of the National Defense Authorization Act for Fiscal Year 2010, I laid out a 10 year, \$80 billion spending plan for NNSA. The Administration submitted an update to that report last month, and we now project over \$85 billion in spending over the next decade.

I recognize that nuclear modernization requires investment for the long-term, in addition to this one-year budget increase. That is my commitment to the Congress – that my Administration will pursue these programs and capabilities for as long as I am President.

In future years, we will provide annual updates to the 1251 report. If a decision is made to limit non-defense discretionary spending in any future budget requests, funding for nuclear modernization in the NNSA weapons activities account will be considered on the same basis as defense spending.

In closing, I thought it important for you to know that over the last two days, my Administration has worked closely with officials from the Russian Federation to address our concerns regarding North Korea. Because of important cooperation like this, I continue to hope that the Senate will approve the New START Treaty before the 111th Congress ends.

Sincerely,



United States Senate  
WASHINGTON, DC 20510

July 8, 2016

The Honorable Ashton B. Carter  
Secretary of Defense  
United States Department of Defense  
1000 Defense Pentagon  
Washington, DC 20301

Dear Secretary Carter:

You and several of your civilian and military colleagues at the Department of Defense have expressed to us your strong support for maintaining and modernizing our nation's nuclear triad. We appreciate this support during your time as Secretary of Defense and welcome the robust Fiscal Year 2017 budget request for nuclear modernization that DoD provided to Congress. We therefore are concerned about recent statements from staff members of the National Security Council that question the nuclear modernization agenda and threaten to undermine the Department's long-established position on this vital national security issue.

We strongly believe in the value of the interlocking capabilities of the three legs of the triad. The sea leg's unparalleled stealth introduces uncertainty into any adversary attempt to threaten the U.S. or its interests. The air leg provides us with the flexibility to redeploy deterrent assets, signaling intent and demonstrating resolve to both adversaries and allies alike. Finally, the land-based ballistic missiles provide persistent deterrence and a widely dispersed target set that complicates any adversary plan to threaten the United States and serves as an overwhelming barrier against any aspiring nuclear power mounting a nuclear challenge to our nation.

We must modernize these forces to preserve their deterrent capabilities. We must maintain the pace of replacing our Ohio-class submarines before the fleet's hulls and reactors reach the end of their service lives. Continuing development of the B-21 will provide us with a much needed new nuclear-capable bomber to defeat future advanced air defense systems. We also need a new air-launched standoff weapon to hold the broadest possible array of targets at risk. Finally, we must reconstitute our intercontinental ballistic missile force before the existing system degrades and becomes obsolete. In addition, the warheads carried on each of these delivery systems must be refurbished so that their deterrent capability remains unquestioned.

The Senate recently authorized the administration's FY17 nuclear modernization request in the FY17 National Defense Authorization Act. We are therefore particularly concerned that the Administration now may consider steps to slow down modernization programs or withdraw them from future year defense plans. We seek your assurance that the Department of Defense will: 1) advance existing modernization programs as expeditiously as possible, including approving critical milestones for the Ground Based Strategic Deterrent program and the Long Range Stand Off cruise missile program; 2) preserve a robust program of nuclear modernization across the next five year defense plan; and 3) continue to articulate the value of strategic deterrence and the need for nuclear modernization in light of a wide array of strategic challenges facing the United States.



We are grateful for your past support in the effort to modernize the triad, and we hope you can reassure us of the Department's support for the ongoing modernization agenda. We look forward to your response and to continuing to work with you to ensure the United States retains a safe, reliable and effective deterrent for the foreseeable future.

Sincerely,

John Hosen

Joe Donnelly

Steve Daines

Mark R. Warner

Mr. H

Mr. K

John Barrasso

Jon Tester

Heidi Heitkamp

John Hatch

David Vitter

Mr. R

Rob Fischer

Jack Reed

## Nuclear weapon reductions must be part of strategic analysis

[http://www.washingtonpost.com/opinions/nuclear-weapon-reductions-must-be-part-of-strategic-analysis/2012/04/22/gIQAkG4aT\\_story.html](http://www.washingtonpost.com/opinions/nuclear-weapon-reductions-must-be-part-of-strategic-analysis/2012/04/22/gIQAkG4aT_story.html)

By Henry A. Kissinger and Brent Scowcroft

By Henry A. Kissinger and Brent Scowcroft April 22, 2012

*Henry A. Kissinger was secretary of state from 1973 to 1977 and national security adviser from 1969 to 1975. Brent Scowcroft was national security adviser from 1975 to 1977 and 1989 to 1993.*

A New START treaty reestablishing the process of nuclear arms control has recently taken effect. Combined with reductions in the U.S. defense budget, this will bring the number of nuclear weapons in the United States to the lowest overall level since the 1950s. The Obama administration is said to be considering negotiations for a new round of nuclear reductions to bring about ceilings as low as 300 warheads. Before momentum builds on that basis, we feel obliged to stress our conviction that the goal of future negotiations should be strategic stability and that lower numbers of weapons should be a consequence of strategic analysis, not an abstract preconceived determination.

Regardless of one's vision of the ultimate future of nuclear weapons, the overarching goal of contemporary U.S. nuclear policy must be to ensure that nuclear weapons are never used. Strategic stability is not inherent with low numbers of weapons; indeed, excessively low numbers could lead to a situation in which surprise attacks are conceivable.

We supported ratification of the START treaty. We favor verification of agreed reductions and procedures that enhance predictability and transparency. One of us (Kissinger) has supported working toward the elimination of nuclear weapons, albeit with the proviso that a series of verifiable intermediate steps that maintain stability precede such an end point and that every stage of the process be fully transparent and verifiable.

The precondition of the next phase of U.S. nuclear weapons policy must be to enhance and enshrine the strategic stability that has preserved global peace and prevented the use of nuclear weapons for two generations.

Eight key facts should govern such a policy:

First, strategic stability requires maintaining strategic forces of sufficient size and composition that a first strike cannot reduce retaliation to a level acceptable to the aggressor.

Second, in assessing the level of unacceptable damage, the United States cannot assume that a potential enemy will adhere to values or calculations identical to our own. We need a sufficient number of weapons to pose a threat to what potential aggressors value under every conceivable circumstance. We should avoid strategic analysis by mirror-imaging.

Third, the composition of our strategic forces cannot be defined by numbers alone. It also depends on the type of delivery vehicles and their mix. If the composition of the U.S. deterrent force is modified as a result of reduction, agreement or for other reasons, a sufficient variety must be retained, together with a robust supporting command and control system, so as to guarantee that a preemptive attack cannot succeed.

Fourth, in deciding on force levels and lower numbers, verification is crucial. Particularly important is a determination of what level of uncertainty threatens the calculation of stability. At present, that level is well within the capabilities of the existing verification systems. We must be certain that projected levels maintain — and when possible, reinforce — that confidence.

Fifth, the global nonproliferation regime has been weakened to a point where some of the proliferating countries are reported to have arsenals of more than 100 weapons. And these arsenals are growing. At what lower U.S. levels could these arsenals constitute a strategic threat? What will be their strategic impact if deterrence breaks down in the overall strategic relationship? Does this prospect open up the risk of hostile alliances between countries whose forces individually are not adequate to challenge strategic stability but that combined might overthrow the nuclear equation?

Sixth, this suggests that, below a level yet to be established, nuclear reductions cannot be confined to Russia and the United States. As the countries with the two largest nuclear arsenals, Russia and the United States have a special responsibility. But other countries need to be brought into the discussion when substantial reductions from existing START levels are on the international agenda.

Seventh, strategic stability will be affected by other factors, such as missile defenses and the roles and numbers of tactical nuclear weapons, which are not now subject to agreed limitations. Precision-guided large conventional warheads on long-range delivery vehicles provide another challenge to stability. The interrelationship among these elements must be taken into account in future negotiations.

Eighth, we must see to it that countries that have relied on American nuclear protection maintain their confidence in the U.S. capability for deterrence. If that confidence falters, they may be tempted by accommodation to their adversaries or independent nuclear capabilities.

Nuclear weapons will continue to influence the international landscape as part of strategy and an aspect of negotiation. The lessons learned throughout seven decades need to continue to govern the future.

**Statements by senior DOD civilian and military leaders on the importance of LRSO.**

*"The Department of Defense has an established military requirement for a nuclear capable stand-off cruise missile for the bomber leg of the U.S. triad. Nuclear capable bombers with effective stand-off weapons assure our allies and provide a unique and important dimension of U.S. nuclear deterrence in the face of increasingly sophisticated adversary air defenses... Our current air-launched cruise missile had a planned service life that ended almost two decades ago. Regardless of the missile's physical sustainability, as potential adversaries acquire more advanced air defenses and nuclear forces, the credibility of our nuclear stand-off capability will undoubtedly deteriorate. Our allies will feel this deterioration most acutely. Without the LRSO's advanced stand-off capability, the bomber leg of the triad will gradually become a symbol of our decline rather than a bellwether of enduring American strength."*

**Under Secretary of Defense Kendall, Letter to Senate Appropriations, 24 Jun 2014**

*"Modernizing our air-delivered standoff capability is vital to assure Allies and effectively conduct operations if deterrence fails in the future threat environment. LRSO complicates adversary planning and defensive capabilities which are growing in numbers, complexity, and sophistication. If deterrence fails, an air-delivered standoff capability is required to meet our extended deterrence commitments and to effectively conduct operations in increasingly sophisticated anti-access and area-denial (A2AD) environments. The AGM-86 has served well in this respect for over 30 years, but is far beyond its planned 10-year service life; aging issues will begin to adversely affect reliability, availability, and survivability. LRSO addresses these concerns, ensuring we retain the flexibility of an effective standoff capability."*

**Admiral Haney, Letter to Rep. Fleming, 16 Mar 2015**

*"The reason for the advanced cruise missile is to replace the missile that exists now, in recognition of the fact that air defenses are improving around the world, and that keeping that capability to penetrate air defenses with our nuclear deterrent is an important one....I think it is important to continue to have a penetrating air-breathing missile for nuclear deterrence."*

**Secretary of Defense Carter, Testimony to Senate Defense Appropriations, 6 May 2015**

*"Having an air-launched cruise missile complements the capability of the current and future penetrating bomber force by extending its range and severely complicating the adversary's air defense problem. Without the ALCM capability, our only air-delivered nuclear response option would require bombers to fly over their targets, bringing increased mission risk."*

**Acting Under Secretary of Defense McKeon, Testimony at HASC hearing, 24 Feb 2016**

*"The LRSO is an important element of a modernization program designed to support the policy objective of maintaining strategic stability with Russia and China.... The LRSO will further contribute to strategic stability by retaining a response option that does not pose the threat of a disarming surprise attack to Russia or China...The Administration's decision to develop a Long-Range Standoff (LRSO) cruise missile to replace the aging Air-Launched Cruise Missile*

*(ALCM) is essential to maintain the ALCM's unique contribution to the range of credible options available to the President for responding to nuclear attack... The ALCM capability strengthens the President's ability to respond proportionately to a limited nuclear attack, which in turn strengthens our ability to deter such attacks from ever taking place. This is critical in a world where we must not only avoid unintended escalation, but also deter deliberate nuclear escalation like that envisioned in Russia's current strategy."*

**Assistant Secretary of Defense Scher, Response to QFR from HASC hearing, 2 Mar 2016**

*"Mr. Chairman, I think it is absolutely critical that we have an LRSO, not only for the new B-21, but also for our B-2 and B-52, and that is largely because of the ever increasing anti-access area denial that we are facing, and for survivability, we need to have a stand-off capability, period, dot."*

**General Rand, Commander of AFGSC, Testimony at HASC hearing, 2 Mar 2016**

*"The Air Force fully supports the President's commitment to maintaining a credible and effective nuclear triad—both GBSD and LRSO are essential to that effort."*

**General Goldfein, Nominee for Air Force Chief of Staff, SASC confirmation hearing, 16 Jun 2016**

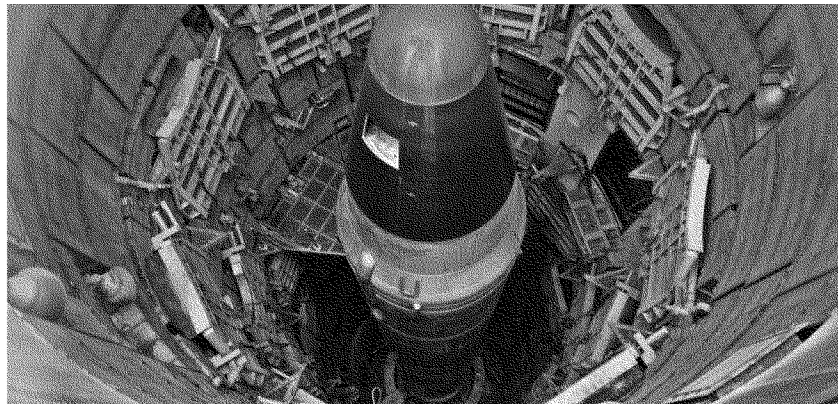
## America Already Has More Than Enough Nuclear Missiles

 [foreignpolicy.com/2016/06/17/nuclear-missiles-triad-congress-budget/](https://foreignpolicy.com/2016/06/17/nuclear-missiles-triad-congress-budget/)

Argument

But Republicans are pushing a \$1 trillion nuclear modernization program, which would not only bankrupt the Pentagon but could spark a global nuclear arms race.

- By Adam Smith Representative Adam Smith (D-WA) is the ranking member on the House Armed Services Committee.
- June 17, 2016



This summer, Congress has been tying itself up in knots, trying to decide how to adequately fund U.S. national defense priorities, given the limits imposed by sequestration. But the difficult reality is that, however we choose to address immediate challenges, any rational attempt to plan for America's future security must begin with a clear-eyed reassessment of the costs, trade-offs, and dangers of the trillion-dollar plan Washington is undertaking to modernize the U.S. nuclear weapons complex. That reassessment should include an effort to eliminate the new nuclear cruise missile.

This week, I co-sponsored an amendment to the defense appropriations bill that would cut funding for the development of this missile, the Long-Range Standoff Weapon, by \$75.8 million. If adopted, that preliminary cut would have slowed its development by three years.

The United States needs a strong and credible nuclear arsenal. But our current nuclear forces are excessive. With over 5,000 deployed and stockpiled nuclear weapons — and thousands more awaiting dismantlement — we have a nuclear force stacked with redundancy. The "nuclear triad" that we would use to deliver these weapons consists of

over 400 land-based intercontinental ballistic missiles on high alert and undetectable nuclear ballistic submarines, each armed with two types of warheads. We also deploy nuclear gravity bombs that could be delivered from bombers or fighter aircraft, and air-launched nuclear cruise missiles. In addition, the United States maintains non-deployed nuclear weapons that act as an additional hedge to our deployed nuclear weapons, along with thousands of nuclear components and, of course, the ability to build even more nuclear weapons.

The truth is that the United States can retain a credible nuclear deterrent with significantly fewer nuclear weapons and fewer delivery systems, at a fraction of the cost.

Instead, and with little debate, Congress has embarked on a plan to modernize all of these systems and increase these capabilities at an estimated total cost of \$1 trillion over 30 years. This effort largely results from decisions made before the advent of the Budget Control Act and an ideological commitment to nuclear weapons by the Republican majority, which recently described them as our national security priority and “the foundation of all our defense efforts” in its security strategy. That plan means purchasing new nuclear weapons production facilities and labs, refurbishing warheads, land-based ballistic missiles, ballistic missile submarines, building new strategic bombers and nuclear-capable fighter aircraft, and, to top it all off, a new nuclear cruise missile.

These expenses will soon constitute a huge proportion of the U.S. defense budget: Yearly nuclear modernization costs will soon balloon and then more than double in the ensuing years, requiring at least \$40 billion annually between 2024 and 2036, or nearly 10 percent of defense costs. This modernization “bow wave” — a term meant to describe the bulging costs resulting from new defense programs, like the waves that spread from the bow of a ship — will crowd out other defense priorities, consuming money for conventional weapons, cyber security, taking care of military families, and everything else. For comparison, consider that \$40 billion would fund an additional 330,000 troops, and is almost twice the yearly cost of the Marine Corps.

That is an enormous problem that we are unprepared to handle. The comptroller of the Department of Defense has called the cost of nuclear modernization “the biggest acquisition problem we don’t know how to solve yet.” Brian McKeon, principal deputy undersecretary of defense for policy, stated that the Pentagon is “wondering how the heck we’re going to pay for it,” and that current leadership is “thanking our stars we won’t be here to have to answer the question.” Meanwhile, Republicans on the House Armed Services Committee repeatedly voted down and blocked amendments that would require more comprehensive cost assessments for these plans.

What’s more, this nuclear investment would actually undermine U.S. security by driving an emerging global nuclear arms race, undercutting American credibility in the pursuit of nuclear nonproliferation. Indeed, over the past few years, Russia and China have been modernizing their nuclear deterrents. Much of their spending is meant to assure the relevance of their deterrents and offset conventional military deficiencies. That doesn’t mean that the Pentagon must counter these new Russian and Chinese investments; America already has a reliable, credible nuclear deterrent. We must be careful to avoid creating incentives for a self-fulfilling cycle that heightens the risk of using atomic weapons.

To avoid going down this road and to ensure that we maintain the capabilities we need, we should cancel redundant systems such as the planned development of the Long-Range Standoff Weapon, which I proposed reducing funding for this week in a defense appropriations amendment; adopt substantial cuts to our nuclear arsenal, which could save tens of billions of dollars; and increase accountability and transparency by requiring the Defense Department to submit a 25-year plan for nuclear deterrent modernization to explain how it plans to manage these costs. Now is the time for serious oversight and a realistic approach to these issues in order to stop an emerging arms race and avoid wasting billions of dollars we cannot afford.

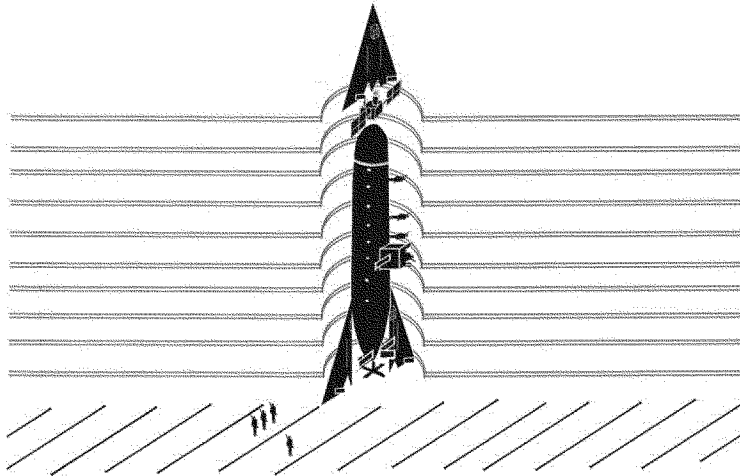
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## Why It's Safe to Scrap America's ICBMs

www.nytimes.com/2016/09/30/opinion/why-its-safe-to-scrap-americas-icbms.html

By WILLIAM J. PERRY



Ryan Peltier

In recent years, Russia and the United States have started rebuilding their Cold War nuclear arsenals, putting the world on the threshold of a dangerous new arms race. But we don't have to repeat the perilous drama of the 20th century. We can maintain our country's strength and security and still do away with the worst of the Cold War weapons.

The American plan to rebuild and maintain our nuclear force is needlessly oversized and expensive, expected to cost about \$1 trillion over the next three decades. This would crowd out the funding needed to sustain the competitive edge of our conventional forces and to build the capacities needed to deal with terrorism and cyberattacks.

The good news is that the United States can downsize its plans, save tens of billions of dollars, and still maintain a robust nuclear arsenal.

First and foremost, the United States can safely phase out its land-based intercontinental ballistic missile (ICBM) force, a key facet of Cold War nuclear policy. Retiring the ICBMs would save considerable costs, but it isn't only budgets that would benefit. These missiles are some of the most dangerous weapons in the world. They could even trigger an accidental nuclear war.

If our sensors indicate that enemy missiles are en route to the United States, the president would have to consider launching ICBMs before the enemy missiles could destroy them; once they are launched, they cannot be recalled. The president would have less than 30 minutes to make that terrible decision.



This is not an academic concern. While the probability of an accidental launch is low, human and machine errors do occur. I experienced a false alarm nearly 40 years ago, when I was under secretary of defense for research and engineering. I was awakened in the middle of the night and told that some Defense Department computers were showing 200 ICBMs on the way from the Soviet Union. For one horrifying moment I thought it was the end of civilization. Then the general on the phone explained that it was a false alarm. He was calling to see if I could help him determine what had gone wrong with the computer.

During the Cold War, the United States relied on ICBMs because they provided accuracy that was not then achievable by submarine-launched missiles or bombers. They also provided an insurance policy in case America's nuclear submarine force was disabled. That's not necessary anymore. Today, the United States' submarine and bomber forces are highly accurate, and we have enough confidence in their security that we do not need an additional insurance policy — especially one that is so expensive and open to error.

As part of the updates to America's nuclear arsenal, the government is also planning to replace nuclear-armed submarines and bombers. If we assume that the Defense Department is critically analyzing the number of systems needed, this makes far more sense than replacing ICBMs. The submarine force alone is sufficient to deter our enemies and will be for the foreseeable future. But as technology advances, we have to recognize the possibility of new threats to submarines, especially cyberattack and detection by swarms of drones. The new submarine program should put a special emphasis on improvements to deal with these potential threats, assuring the survivability of the fleet for decades to come.

The new stealth bomber will provide a backup to submarines. This is not likely to be necessary, but the bomber force is a good insurance policy. The new bomber would be capable of carrying out either conventional or nuclear missions. But the development of new air-launched nuclear cruise missiles, which has been proposed, is unnecessary and destabilizing. We can maintain an effective bomber force without a nuclear cruise missile.

Instead of overinvesting in nuclear weapons and encouraging a new arms race, the United States should build only the levels needed for deterrence. We should encourage Russia to do the same. But even if it does not, our levels of nuclear forces should be determined by what we actually need, not by a misguided desire to match Moscow missile for missile. If Russia decides to build more than it needs, its economy will suffer, just as during the Cold War.

The Obama administration says it is looking for ways to reduce nuclear dangers. If this examination leads to a reduction in planned nuclear programs and costs, it would be consistent with the Democratic Party's new platform, which states that the party "will work to reduce excessive spending on nuclear weapons-related programs that are projected to cost \$1 trillion over the next 30 years."

In addition, 10 senators recently wrote to the president, calling on the administration to "scale back plans to construct unneeded new nuclear weapons and delivery systems." A similar letter from House members warns that the nuclear plan may be "neither affordable, executable, nor advisable."

Russia and the United States have already been through one nuclear arms race. We spent trillions of dollars and took incredible risks in a misguided quest for security. I had a front-row seat to this. Once was enough. This time, we must show wisdom and restraint. Indeed, Washington and Moscow both stand to benefit by scaling back new programs before it is too late. There is only one way to win an arms race: Refuse to run.



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**WITNESS RESPONSES TO QUESTIONS ASKED DURING  
THE HEARING**

JULY 14, 2016

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**RESPONSE TO QUESTION SUBMITTED BY MR. ZINKE**

Admiral HANEY. Details concerning Triad operating costs are included in the annual Report on the Plan for the Nuclear Weapons Stockpile, Nuclear Weapons Complex, Nuclear Weapons Delivery Systems, and Nuclear Weapons Command and Control System [as specified in Section 1043 of the National Defense Authorization Act for Fiscal Year 2012]. The operations and sustainment (O&S) costs for nuclear delivery systems include legacy system operations and maintenance and associated personnel to support those systems.

The Ohio-class submarine and Trident II (D5) ballistic missile approximate average annual O&S cost is \$4.2B (FY16–FY20). The Intercontinental Ballistic Missile (ICBM) force approximate O&S annual cost average is \$1.5B (FY16–FY20). Finally, the strategic bomber and air delivered weapon approximate O&S annual cost average is \$2.8B (FY16–FY20). [See page 27.]



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**QUESTIONS SUBMITTED BY MEMBERS POST HEARING**

JULY 14, 2016

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### QUESTIONS SUBMITTED BY MR. ROGERS

Mr. ROGERS. Secretary Scher, does the Department of Defense believe President Obama's nuclear modernization plans are undercutting nuclear nonproliferation efforts? Do our allies fear that recapitalizing the U.S. nuclear triad, building the LRSO cruise missile, and life-extending our nuclear warheads is creating a new nuclear arms race?

Mr. SCHER. The U.S. modernization program is fully consistent with the Administration's nonproliferation efforts and is not triggering a nuclear arms race; it is designed to decrease the likelihood of a future arms race. We are decreasing the number of nuclear warheads and types of delivery systems in the arsenal, not increasing them. The Administration's plan focuses on sustaining and modernizing the platforms, delivery systems, and warheads of our current triad to preserve existing military capabilities in the face of evolving threats, rather than developing new nuclear weapons with new military capabilities. This approach decreases the likelihood of a future arms race by maintaining a deterrent capability that is robust and stable, rather than one that is necessarily reactionary to every move by potential adversaries. Our allies and partners in both Europe and Asia are counting on U.S. nuclear modernization to enable the continuance of extended deterrence commitments that help assure them they do not need to pursue their own nuclear arsenals.

Mr. ROGERS. Secretary Scher, does the building of the LRSO nuclear cruise missile result in a more "usable" weapon than the existing cruise missile? Is it going to lower the nuclear-use threshold and be used for nuclear warfighting—or does it strengthen deterrence?

Mr. SCHER. Like all U.S. nuclear weapons, the fundamental role of the Long-Range Standoff (LRSO) cruise missile is to deter nuclear attack. LRSO will not be more "usable" than the existing AGM-86B Air-Launched Cruise Missile (ALCM) it replaces. Rather, it is critical for maintaining the range of explosive yields and response options currently available to the President for deterring and, if necessary, responding to nuclear attack. Retaining capabilities that maintain credible means for responding to a nuclear attack strengthens our ability to deter such an attack from ever taking place. The United States has long maintained a high threshold for contemplating nuclear use. Sustaining the capability currently provided by the ALCM will not lower the threshold for U.S. nuclear use.

Mr. ROGERS. Secretary Scher, do you think President Obama's nuclear modernization plan is affordable? What are its costs in both an absolute sense and a relative sense—compared to the defense budget or the Federal budget, for instance? How do nuclear recapitalization costs compare to broader conventional recapitalization costs within DOD?

Mr. SCHER. Sustaining effective nuclear deterrence is the highest priority of the Department of Defense (DOD). The Administration's nuclear modernization program is affordable if prioritized appropriately by the Department, Congress, and the Nation. DOD estimates that the total cost for recapitalizing our nuclear forces will be in the range of \$350–\$450B over the next twenty years. To put this in context, the total defense budget in FY 2016 alone is \$580B. Annual costs for nuclear modernization, which are separate from nuclear sustainment and operations, are projected to peak in the late 2020s at 3–4 percent of FY 2017-level annual DOD spending, or about the equivalent of 11 percent of the DOD's total FY 2017 acquisition budget, if projected out assuming 2 percent annual inflation.

Sustaining effective nuclear deterrence is the highest priority of the Department of Defense (DOD). The Administration's nuclear modernization program is affordable if prioritized appropriately by the Department, Congress, and the Nation. DOD estimates that the total cost for recapitalizing our nuclear forces will be in the range of \$350–\$450B over the next twenty years. To put this in context, the total defense budget in FY 2016 alone is \$580B. Annual costs for nuclear modernization, which are separate from nuclear sustainment and operations, are projected to peak in the late 2020s at 3–4 percent of FY 2017-level annual DOD spending, or about the equivalent of 11 percent of the DOD's total FY 2017 acquisition budget, if projected out assuming 2 percent annual inflation.

Mr. ROGERS. Secretary Scher, you chair a key committee within NATO related to nuclear and deterrence planning. Based on its most recent communique from the Warsaw Summit, does NATO support a nuclear no-first-use declaratory policy? What would be the impacts to NATO if the U.S. were to declare a nuclear no-first-use policy of its own?

Mr. SCHER. NATO's nuclear declaratory policy was most recently reiterated in the Warsaw Summit: the fundamental purpose of NATO's nuclear capability is to preserve peace, prevent coercion, and deter aggression. This policy was developed in the context of the current U.S. declaratory policy. The circumstances in which NATO might have to use nuclear weapons are extremely remote, but if the fundamental security of any of its members were threatened, NATO has the capabilities and resolve to impose costs on an adversary that would be unacceptable and far outweigh the benefits that an adversary could hope to achieve. Any decisions regarding changes to U.S. nuclear declaratory policy should be done in consultation with our allies, including NATO, to ensure that our allies remain confident of our nuclear security commitments.

Mr. ROGERS. Secretary Scher, as we've discussed before, I'm deeply worried about what I consider to be a failure to respond to Russia's violation of the INF treaty. I believe such failure emboldens Russia to act illegally in a manner of ways, not just on this treaty. So, I ask you, do you believe Russia has paid a price for its violation of the INF treaty? In what way?

Mr. SCHER. Yes. Russia's violation of the INF Treaty is a serious challenge to the security of the United States and its allies and partners; however, the development of Russia's INF Treaty-violating system is only part of an overall pattern of Russia's recent coercive and aggressive behavior. The Administration determined the best approach is to consider Russian actions with regard to the INF Treaty in the context of this overall bellicose behavior, and to respond across a range of areas. The Department of Defense (DOD) identified a range of military responses to Russia's intermediate-range capabilities, including Russia's Treaty-prohibited ground-launched cruise missile. The responses included active defenses to counter intermediate-range strike systems, counterforce capabilities to prevent Russian intermediate-range strikes, and countervailing strike capabilities to enhance U.S. or allied forces. These investments, taken together, form a comprehensive response to the broader strategic environment, including Russian military actions, Russia's aggressive behavior, and its violation of the INF Treaty. The responses will make impose a cost on Russia for aggressive behavior, to include actions that they may consider in the future, and include a range of efforts pursued unilaterally, bilaterally with allies and partners, and also collectively with the NATO Alliance.

For example, DOD plans to continue the European Reassurance Initiative (ERI), with \$789.3 million requested in Fiscal Year (FY) 2016. Under the ERI, the United States has increased our persistent, rotational air, land, and sea presence in the Baltics and in Central Europe to reassure Allies and to deter Russian aggression. ERI also enables the United States to expand bilateral and multilateral exercises in Europe to improve interoperability and to strengthen U.S. warfighting capability in the face of newer threats from Russia. DOD is seeking funding for ERI in FY 2017.

Mr. ROGERS. Secretary Scher, what are the counterintelligence risks of allowing China to inspect our THAAD site in South Korea, once that missile defense capability has been deployed? Can you commit to this committee that we will have access to any intelligence assessment done to evaluate this question before the Administration makes any decision to allow such access?

Mr. SCHER. The Department of Defense currently has no plans and has made no decisions regarding third-party access to a future Terminal High-Altitude Aerial Defense (THAAD) site in the Republic of Korea. Regarding any intelligence assessment of the site, we would defer to the Intelligence Community on releasability questions.

Mr. ROGERS. Admiral Haney, in your capacity as commander of Strategic Command, would you find yourself more likely to recommend to a President that he use an LRSO than you would with our current air-launched cruise missile? Is LRSO more "usable" in your mind—and therefore more likely to be used?

Admiral HANEY. As stated in the 2010 Nuclear Posture Review, the use of nuclear weapons would only be considered in extreme circumstances to defend the vital interests of the United States and its allies. As such, the Long Range Standoff (LRSO) cruise missile will not be "more usable" than the current Air Launched Cruise Missile (ALCM).

The LRSO program replaces the aging ALCM which has far exceeded its originally planned service life. The LRSO will continue to provide the President an effective nuclear standoff capability to address a range of contingencies in non-permissive environments.

Mr. ROGERS. Admiral Haney, the administration has sought further reductions in deployed strategic nuclear forces beyond the levels in the current New START Treaty. Do you believe these further reductions should be done unilaterally, or must they be done in concert with Russia via a bilateral and verifiable treaty? Are more robust and intrusive verification measures needed at such lower force levels?

Admiral HANEY. Any proposal to change our deployed strategic nuclear forces beyond the levels in New START should be examined within the context of a bilateral and verifiable treaty architecture. Such a path moving forward offers the best means to preserve strategic stability through qualitative and quantitative parity.

More robust verification measures are not necessarily needed at lower force levels. There is not a simple tradeoff between lower force structure levels and more robust and intrusive verification measures. Over the course of numerous U.S.-Russia arms control agreements both parties have approved sufficient measures to achieve verification. The challenge is in determining what verification mechanisms are appropriate. It would be premature to provide an assessment on the necessary verification measures without further information regarding the specific context of any proposed negotiations at lower force levels.

#### QUESTIONS SUBMITTED BY MR. COOPER

Mr. COOPER. Several independent estimates place DOD and NNSA costs associated with the nuclear deterrence mission over the next 30 years at approximately \$350 billion per year for the next 10 years. These costs for modernization will grow significantly in the late-2020s, with the nuclear deterrence mission potentially costing about a trillion dollars over 30 years. Please provide further information detailing Secretary Scher's assessment of \$350-\$450 billion over 20 years for nuclear modernization/recapitalization.

General KLOTZ. This question would be more appropriate for DOD to answer.

Mr. COOPER. What are the risks and benefits of a no-first-use policy? Under what circumstances would the U.S. benefit from using nuclear weapons first?

Mr. SCHER. Adopting a no-first-use policy could, in theory, be beneficial if it reduced the risk of nuclear attack or coercion against the United States and its allies, or otherwise led nuclear-armed potential adversaries to reduce the role of nuclear weapons in their security strategies. The risk of adopting a no-first-use policy is that it might instead undermine deterrence and weaken our ability to assure allies and partners that they do not need their own nuclear arsenals.

We will not speculate about the benefits and risks of using nuclear weapons in hypothetical scenarios; however, we should be clear that the purpose of U.S. nuclear weapons is to deter nuclear attack on the United States and its allies and partners, deter other threats against U.S. and allied vital interests, and achieve U.S. objectives if deterrence fails. Therefore, we must assess alternative declaratory policies not only for the impact they might have on U.S. employment decisions, but also for how potential adversaries and U.S. allies and partners would perceive those policies and the consequent effect they would have on extended deterrence, assurance, and our nonproliferation objectives.

Mr. COOPER. Do you believe we could control escalation once a nuclear weapon is used?

Mr. SCHER. No one should have absolute confidence in their ability to control escalation in a conflict between States with nuclear arsenals postured to ensure second-strike capabilities. This understanding underscores our view that the fundamental role of nuclear weapons is to deter nuclear attack against the United States, its allies, and partners. However, effective deterrence requires a balanced approach to escalation risk. We must be prepared if an adversary creates a conflict and drives it across the nuclear threshold; we do not want to simply assume that if the nuclear threshold is crossed that escalation cannot be limited. We are tasked with providing the President with credible options for responding to nuclear threats and nuclear aggression, including responding to limited nuclear use. Possessing an appreciation of escalation risk together with a range of options for responding to nuclear attack makes credible our message that adversaries cannot escalate their way out of failed conventional aggression.

Mr. COOPER. What are the benefits and risks of doing away with launch-on-warning policy? What impacts, if any, could changes to this policy have on force structure?

Mr. SCHER. The United States does not have a launch-on-warning policy. We instead retain the option for the President to launch intercontinental ballistic missiles (ICBMs) under attack, while also planning to ensure that we are not reliant on doing so. The difference between launch-on-warning and launch-under-attack is at-

tack assessment. Launch-under-attack is not based solely on a single warning indicator; rather, an attack assessment considers data from multiple sensors and the apparent intent of the incoming attack in the context of the international situation.

This policy of retaining the option to launch under attack enhances deterrence of large-scale nuclear attack. Potential adversaries with large nuclear arsenals cannot be certain of their ability to destroy U.S. ICBMs because the President has the option of launching those forces before the incoming adversary strike reaches its targets.

The capability to launch ICBMs before they are destroyed by an incoming attack does not place a requirement on the President to do so. Although the United States has the ability to launch its ICBMs promptly after an authenticated, encrypted, and securely transmitted order from the President, this does not mean our nuclear forces are on a “hair-trigger” alert posture. The United States employs multiple, rigorous, and redundant technical and procedural safeguards to protect against accidental or unauthorized launch or a launch based on incorrect information.

Eliminating the option to launch under attack would reduce Presidential flexibility, as the President would not have the option of launching ICBMs before an incoming strike destroyed all or a portion of them. This, in turn, would reduce uncertainty about the consequences of a large-scale nuclear attack against the United States. Eliminating launch-under-attack does not increase Presidential decision-time; it only takes away the President’s option to decide.

Eliminating the ability to launch under attack would not necessitate any changes in force structure, but eliminating the responsiveness of the ICBM force could lead to future requirements to bolster other elements of U.S. nuclear force structure and posture, such as bomber alert levels. Some argue that the United States could reduce the alert-level of our ICBMs if there was no ability to launch under attack. This change to our nuclear posture, however, would entail serious risks to strategic stability, because de-alerting ICBMs might incentivize an adversary to strike first in a crisis before forces were re-alerted. It would also degrade our ability to hold time-sensitive targets at risk with ICBMs.

Mr. COOPER. The 2010 Nuclear Posture Review stated that the use of nuclear weapons would only be contemplated in the most extreme circumstances to defend U.S. or allied survival. Is this still the policy of the United States? And in this context, would the use of low-yield nuclear weapon be required as a response to a potential use of a low-yield nuclear weapon by Russia?

Mr. SCHER. The policies laid out in the 2010 Nuclear Posture Review Report remain in effect. The fundamental role of U.S. nuclear weapons, which will continue as long as nuclear weapons exist, is to deter nuclear attack on the United States, its allies, and partners. The United States would only consider the use of nuclear weapons in extreme circumstances to defend its vital interests.

The nuclear and conventional forces of the United States support a range of options available to the President for responding to nuclear attack, including options for responding to an adversary’s potential use of a low-yield nuclear weapon. Determining what response best serves the security interests of the United States and its allies and partners is a Presidential decision. There is no required response to any specific type of adversary attack.

Mr. COOPER. Several independent estimates place DOD and NNSA costs associated with the nuclear deterrence mission over the next 30 years at approximately \$350 billion per year for the next 10 years. These costs for modernization will grow significantly in the late-2020s, with the nuclear deterrence mission potentially costing about a trillion dollars over 30 years. Please provide further information detailing Secretary Scher’s assessment of \$350–\$450 billion over 20 years for nuclear modernization/recapitalization.

Mr. SCHER. The Department of Defense (DOD) Office of Cost Assessment and Program Evaluation estimates that the total cost of recapitalizing U.S. nuclear forces will be \$350 billion–\$450 billion over the next twenty years. DOD will continue to refine its estimate as a number of modernization programs mature in the coming years.

This estimate covers the full cost of recapitalizing the nuclear weapon delivery systems and warheads of the U.S. strategic triad. It includes the Ohio Replacement Program submarine; the Ground-Based Strategic Deterrent; the Long-Range Stand-off cruise missile; the Air Force tail kit assembly for the B61–12 gravity bomb; and the full cost of the B–21 bomber (even though this aircraft is also being developed to meet conventional warfighting requirements). It also includes modernization of nuclear command, control, and communications. Finally, this estimate includes annual DOD funds reprogrammed to the National Nuclear Security Administration (NNSA) to support warhead modernization activities, including Life Extension Programs described in NNSA’s Stockpile Stewardship Management Plan.

The DOD estimate excludes nuclear force sustainment and operation, which are \$12 billion in FY 2017. It also excludes NNSA infrastructure recapitalization, such as construction of new uranium and plutonium facilities. These additional costs are necessary for the United States to remain a nuclear weapons state irrespective of what our nuclear modernization plans entail.

Mr. COOPER. Is there a military requirement to make the Long-Range Stand-Off Weapon have conventional capability?

Admiral HANEY. The Fiscal Year 2014 National Defense Authorization Act [Section 217(a)(1)] requires the Air Force develop a conventional variant of the LRSO prior to the retirement of the existing Conventional Air Launched Cruise Missile (CALCM). The CALCM retirement timeline has not been established and DOD does not have a specific plan for developing a conventional LRSO variant at this time.

Mr. COOPER. What are the risks and benefits of a no-first-use policy? Under what circumstances would the U.S. benefit from using nuclear weapons first?

Admiral HANEY. As stated in the 2010 Nuclear Posture Review, the current policy is:

The U.S. will continue to strengthen conventional capabilities and reduce the role of nuclear weapons in deterring non-nuclear attacks with the objective of making deterrence of nuclear attack on the United States or our allies and partners the sole purpose of U.S. nuclear weapons. The U.S. would only consider the use of nuclear weapons in extreme circumstances to defend the vital interests of the U.S. or its allies and partners. The U.S. will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the Nuclear Non-Proliferation Treaty and in compliance with their nuclear non-proliferation obligations. This policy is an important contributor to maintaining strategic stability. U.S. extended deterrence and assurance commitments ensure that our allies remain confident in our capabilities, with the added benefit of reducing the likelihood of nuclear proliferation. Beyond the implications this has for achieving Nuclear Non-Proliferation Treaty goals, the ability of the U.S. to dissuade nuclear weapon acquisition minimizes strategic risk. In short, the current policy promotes strategic stability and guarantees the safety and security of our allies under any scenario when their very existence and way of life may be threatened. Substantial analysis and dialogue should be conducted including specific analysis associated with U.S. allies and partner assurance perspectives to weigh the impact a “No First Use” policy would have. Among other things, such analysis should consider the following:

“No First Use” policy removes ambiguity for U.S. adversaries. Potential aggressors may not fear U.S. nuclear response even if they attacked with advanced conventional, chemical, and/or biological weapons. They would risk U.S. nuclear retaliation only if they attacked with nuclear weapons. Allies and partners would no longer be assured via the U.S. nuclear umbrella. As such they may even consider acquiring their own nuclear weapons.

Mr. COOPER. Do you believe we could control escalation once a nuclear weapon is used?

Admiral HANEY. Yes, I believe it may be possible but I hope to never find out. Efforts to control escalation must consider and employ all elements of national power via a whole of government approach. A military response, be it nuclear, conventional or non-kinetic, is merely one tool available to the President. As discussed in the “Report on Nuclear Employment Strategy of the United States” specified in Section 491 of 10 U.S.C. (June 2013), the Presidential guidance “...directs that DOD will maintain a sufficient, diversified and survivable capability at all times with high confidence and capability to convince any potential adversary that the adverse consequences of attacking the United States or our Allies and partners far outweigh any potential benefit they may seek to gain from such an attack. It also preserves the flexibility to respond with a range of options to meet the President’s stated objectives should deterrence fail”. In keeping with this guidance, USSTRATCOM has developed options across the spectrum of potential responses, including nuclear options, in order to provide decision space to the President so he/she can respond appropriately to the conditions at hand. However, it is solely a Presidential decision if and when those options are executed.

Mr. COOPER. What are the benefits and risks of doing away with launch-on-warning policy? What impacts, if any, could changes to this policy have on force structure?

Admiral HANEY. As discussed in the “Report on Nuclear Employment Strategy of the United States” specified in Section 491 of 10 U.S.C. (June 2013), the revised Presidential Guidance recognizes the significantly diminished possibility of a disarming surprise nuclear attack and directs DOD to examine further options to reduce the role Launch Under Attack plays in U.S. planning, while retaining the ability to Launch Under Attack if directed. Thus USSTRATCOM has developed options

across the spectrum of potential responses, including nuclear options, in order to provide decision space to the President so he/she can respond appropriately to the conditions at hand. It is solely a Presidential decision if and when those options are executed.

Mr. COOPER. The 2010 Nuclear Posture Review stated that the use of nuclear weapons would only be contemplated in the most extreme circumstances to defend U.S. or allied survival. Is this still the policy of the United States? And in this context, would the use of low-yield nuclear weapon be required as a response to a potential use of a low-yield nuclear weapon by Russia?

Admiral HANEY. The 2010 Nuclear Posture Review remains the policy of the United States, to wit, "the U.S. would only consider the use of nuclear weapons in extreme circumstances to defend the vital interests of the U.S. or its allies and partners."

How and when the United States uses a nuclear weapon is a Presidential decision. The current and planned conventional and nuclear force structures are specifically designed to provide the President with the best possible range of tailorable response options. This provides the President and his senior advisors with the flexibility to evaluate courses of action in light of a host of considerations.

Mr. COOPER. Are you confident that the required changes in culture to improve the morale and performance of missileers are being implemented effectively? What challenges, if any, remain?

General RAND. Yes. Over the last two years, we have worked very hard to improve the overall culture in the missile community, and we are now seeing the benefits of our efforts focused on manning, training, operations, equipment, infrastructure and morale. Our Command has built a culture of empowerment versus one of strict compliance, allowing our young and motivated officers to set and achieve goals, while distinctively recognizing and rewarding them for excellence in the nuclear enterprise.

With respect to manning, we overhauled the missileer career path to retain experience and further promote the development of weapon system expertise. We are attracting talent with ROTC scholarships and active recruiting. Additionally, we repositioned instructors from centrally-located wing organizations and moved them out to the operational missile squadrons. As part of this initiative, we've mandated instructors be on their second assignment as a missileer to ensure they have a wider breadth of knowledge to share with younger officers. We also added two field grade officers in leadership positions to every squadron. These actions provide our young missileers opportunities for daily mentorship, as well as guidance on viable options for career paths. As a result we have made more effective use of our human resources, while simultaneously promoting career development.

On the training and operations front, we revised our AFGSC directives governing training, completely re-vamping our methods—from part-task training to mission execution. Mirroring other comparable USAF operations disciplines, we shifted to pass-fail testing and refocused the emphasis from test performance to training and learning. These combined efforts shifted our missileers' focus from grades to tasks, ultimately resulting in enhanced mission proficiency. Operationally, we've promoted stability in alert scheduling of missile crews through effective utilization of all wing assigned and qualified personnel, as well as established the means to monitor and detect if an organization exceeds established alert rate levels. Rigorous attention on scheduling of alert and training activities provides greater predictability and protects the time off of Missile Wing personnel.

As a result of Force Improvement Funds, we acquired 95 new vehicles in FY14 for missileers and maintenance personnel to travel to their remote operating locations, and an additional 576 vehicles in FY15 and FY16 for all nuclear bases. With the FY16 NDAA \$322M infusion for modernization of equipment and infrastructure at our installations, we were able to fund a new Weapons Storage Facility at F.E. Warren Air Force Base and a Tactical Response Force Alert Facility at Malmstrom Air Force Base. Looking forward, we are requesting \$440M for future nuclear infrastructure requirements across the command. Our desire is to fund the Minuteman III and UH-1N replacement. In the last two years, we have made great strides to improve the Morale, Welfare and Recreation facilities at our bases. All our fitness centers have implemented 24/7 operating hours, providing access for all our Airmen, regardless of duty shifts. The Air Force Food Transformation Initiative continues to be implemented at our installations and will provide our Airmen more dining options with expanded menus. Additionally, we have expanded non-appropriated funds for locally-developed programs.

Our challenge is to ensure we never return to the culture of old. To this end, I've established a directorate in my command to focus on leadership development, lessons learned and innovation. This helps promote the flow of ideas for improvement

from the lowest levels in the field directly to myself. I personally chair a monthly council which reviews all our initiatives, fosters best practices, and allows for sharing of lessons learned between Wings and Numbered Air Forces. I receive regular status updates on our open force improvement items. I solicit input from my Commanders in the field where inefficiencies and redundancies exist that undermine our Airmen's time and weaken their motivation. I empower them to stop doing those things that take away our ability to fulfill our mission responsibilities and weaken morale.

I appreciate your support as we continue to improve our nation's nuclear forces, ensuring our Strikers have the resources necessary to ensure they are always prepared to safely, securely and effectively carry out their duties which our nation has entrusted to them.

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#### QUESTIONS SUBMITTED BY MR. GARAMENDI

Mr. GARAMENDI. General Klotz: How many plutonium pits are required for planned life extension programs? How many new pits are required?

General KLOTZ. This information was previously provided to the Committee as part of the classified annex to the Fiscal Year (FY) 2017 Stockpile Stewardship and Management Plan in April 2016. NNSA remains committed to achieving war-reserve (WR) pit production levels set forth in the FY 2015 National Defense Authorization Act, and agreed to as part of the Nuclear Weapons Council (NWC) Strategic Plan, to support stockpile requirements for newly-manufactured pits.

Mr. GARAMENDI. Admiral Haney and General Klotz: How many pits are required to address geo-political surprise? What analysis was done to arrive at this number? Can you deliver this analysis to Congress? Why do we need to expand plutonium pit production capacity?

General KLOTZ. The 2010 Nuclear Posture Review and 2013 Report to Congress on the Nuclear Employment Strategy (specified in 10 U.S.C. 491) state that a non-deployed hedge, properly sized and ready to address technical risks, also fulfills the requirements of a geopolitical hedge. Pits are only one of many critical components in a nuclear warhead, and are managed to support all stockpile activities (e.g., life extension programs, surveillance, and aging concerns). The January 16, 2014 Assessment of Nuclear Weapon Pit Production Requirements Report to Congress confirmed the requirement for achieving 50–80 pit per year production capacity by 2030. This requirement was codified by Congress most recently in the 2016 NDAA (Sec. 3140), and is informed by the following factors: 1) U.S. policy objectives to maintain a safe, secure and effective nuclear deterrent is contingent on the national capability to produce plutonium pits, 2) Pit aging studies conclude pits will not have unlimited lifetime, and even with pit reuse, plutonium work may be required to assure weapon safety, security, and long term reliability to preclude the need for weapon testing, and 3) The ability to produce plutonium pits in sufficient quantity and timeliness to address technical issues is essential to the long term reduction of the non-deployed weapon stockpile.

To meet our commitments, as set forth in the Fiscal Year 2015 National Defense Authorization Act and agreed to as part of the Nuclear Weapons Council (NWC) Baseline Plan, NNSA needs to produce newly-manufactured pits to support future stockpile requirements. NNSA's current efforts to optimize existing infrastructure for plutonium operations at Los Alamos National Laboratory will support a maximum 30 pits per year (ppy) production capacity by 2026. In order to achieve production capacity beyond 30 ppy and support future stockpile needs, additional infrastructure is required.

Mr. GARAMENDI. Mr. Scher and Mr. Klotz, what is the plan to pay for nuclear modernization? Will the top line be raised or will other parts of the defense and energy budgets suffer? If so, which ones? Have discussions begun about how to pay for the nuclear enterprise during the coming bow wave in the 2020s and 2030s?

General KLOTZ. Supporting the Administration's agenda to maintain a safe, secure, and effective nuclear weapons stockpile, modernizing our nuclear security enterprise, and reducing the threat of nuclear proliferation remains a top priority. I am confident that the FY 2017 President's budget for NNSA will fully meet all of our national nuclear security requirements. We have a very clear and shared view of what those requirements are. DOD and DOE, through the Nuclear Weapons Council, continue to assess budgets and programs to meet requirements in the coming years. The budget projections for future years, FY 2018–FY 2021, remain subject to the sequester caps set in the Budget Control Act of 2011.

Mr. GARAMENDI. Mr. Scher, on page two of your written testimony you state that "The modernization costs, spread over twenty years, will be an estimated \$350B–

\$450B.” You then stated during the hearing that this figure did not include some costs associated with nuclear modernization, such as life extension programs for warheads. Please provide the committee with the source and precise composition of this figure. What costs, programs, and operations does the \$350B–450B figure include? What costs reasonably associated with the nuclear mission does it exclude (such as warhead modernization, command and control modernization, operations, pit production capacity expansion, etc.)?

Mr. SCHER. The Department of Defense (DOD) Office of Cost Assessment and Program Evaluation (CAPE) estimates that the total cost of recapitalizing U.S. nuclear forces will be \$350 billion–\$450 billion over the next twenty years. DOD will continue to refine its estimate as a number of modernization programs mature in the coming years. This estimate covers the full projected cost of recapitalizing the nuclear weapon delivery systems and warheads of the U.S. strategic triad. It includes the Ohio Replacement Program submarine; the Ground-Based Strategic Deterrent; the Long-Range Standoff cruise missile; the Air Force tail kit assembly for the B61–12 gravity bomb; and the full cost of the B–21 bomber (even though this aircraft is also being developed to meet conventional warfighting requirements). CAPE’s recapitalization estimate also includes modernization of nuclear command, control, and communications. Finally, this estimate includes annual DOD funds reprogrammed to the National Nuclear Security Administration (NNSA) to support warhead modernization activities, including Life Extension Programs described in NNSA’s Stockpile Stewardship Management Plan.

The DOD estimate excludes nuclear force sustainment and operation, which are \$12B in FY 2017. These costs would be necessary even if forgoing modernization and warhead life extension were a viable option. It also excludes NNSA infrastructure recapitalization, such as construction of new uranium and plutonium facilities, which like sustainment costs would be necessary even if forgoing force modernization were a viable option.

Mr. GARAMENDI. Mr. Scher, you are the chairman NATO’s Nuclear Planning Group. Can you describe the range of views our NATO allies have on the current U.S. nuclear modernization plan?

Mr. SCHER. As is the case in the United States, views in Allied governments are wide-ranging and I will not speak to the opinions of other nations individually. However, it is very clear, as was reaffirmed most recently in the Warsaw Summit Communiqué, that all NATO governments fully endorse the enduring importance to the Alliance of nuclear deterrence, along with the unique role the United States plays in maintaining that deterrence. This role depends in part on modernizing U.S. nuclear weapons to ensure that NATO’s nuclear deterrence capability remains credible and effective.

Mr. GARAMENDI. Mr. Scher and Mr. Klotz, what is the plan to pay for nuclear modernization? Will the top line be raised or will other parts of the defense and energy budgets suffer? If so, which ones? Have discussions begun about how to pay for the nuclear enterprise during the coming bow wave in the 2020s and 2030s?

Mr. SCHER. The nuclear modernization program is fully funded in the President’s Fiscal Year 2017 Budget Request. Modernization is affordable if prioritized appropriately by the Department, Congress, and the Nation. The Department scrutinizes its budget submission annually and evaluates potential tradeoffs to align with both near- and long-term national defense priorities. DOD will continue to work with the White House in building future budgets to determine how best to fund the modernization of the nuclear enterprise.

Mr. GARAMENDI. Under what circumstances would the U.S. consider the first use of the nuclear weapon? How do these scenarios influence military requirements and U.S. nuclear posture? How do these specific first-use scenarios affect the planned nuclear modernization?

Mr. SCHER. The United States would only consider the use of nuclear weapons in extreme circumstances to defend the vital interests of the United States or its allies and partners. In the case of countries not covered by our negative security assurance—States that possess nuclear weapons and States not in compliance with their nuclear non-proliferation obligations—there remains a narrow range of contingencies in which U.S. nuclear weapons play a role in deterring a conventional, chemical, or biological weapon attack against the United States or its allies and partners.

The U.S. nuclear modernization plan is designed to preserve Presidential flexibility to respond with a range of options to achieve U.S. and allied objectives should deterrence fail. Any potential specific first-use scenarios do not affect the planned U.S. nuclear modernization.

Mr. GARAMENDI. Admiral Haney, is reducing our deployed nuclear forces in accordance with the New START Treaty in the national security interests of the



United States? Would you support further, bilateral reductions below the current New START central limits?

Admiral HANEY. Yes, the New START Treaty preserves strategic equivalence between the United States and Russia. It is a useful component in preserving strategic stability. Both the U.S. and Russia are on track to achieve the New START Central Limits within the terms set by the treaty. Continuing to remain in compliance is prudent.

U.S.-Russia arms control agreements are in the best interests of the both parties and the Euro-Atlantic community. If further bilateral reductions below the current New START central limits are contemplated, the reduction would require further analysis and scrutiny, including a deep understanding of the scale and scope of any proposed reductions.

Mr. GARAMENDI. Admiral Haney: President Obama stated in 2013 that the United States could “ensure the security of America and our allies—and maintain a strong and credible strategic deterrent—while reducing our deployed strategic nuclear weapons by up to one-third”. If a negotiated reduction could be reached, how would you recommend structuring U.S. nuclear forces if one-third fewer warheads? Would you recommend eliminating certain platforms? Rebalancing between legs of the triad? Simply reducing numbers with the same overall structure?

Admiral HANEY. The current U.S. nuclear force structure provides the President a flexible, reliable, and survivable range of deterrence and assurance options to meet our strategic stability objectives. As part of the New START deliberation process, the Department completed a very thorough analysis process to inform negotiations. I would recommend that any future force structure or deployed weapon changes, as part of a negotiated reduction, occur in a similar manner.

The value of the Triad in maintaining strategic stability is not strictly related to deployed launcher or weapon numbers. As stated in the 2010 Nuclear Posture Review, the Triad provides an assured second strike capability and the ability to mitigate unexpected technological problems or operational vulnerabilities in any single Triad leg. Therefore, even at reduced deployed weapon levels, the U.S. should maintain a credible and effective Triad to maintain strategic stability and meet our deterrence objectives and assurance commitments.

Mr. GARAMENDI. Admiral Haney: Please provide to the committee a list of consultants or contractors that STRATCOM uses for nuclear deterrence studies.

Admiral HANEY. USSTRATCOM conducts nuclear deterrence studies and related analytical activities to ensure we meet our primary mission of deterring strategic attack on the U.S. and our allies. Formal policy recommendations and strategic decision making are internal functions conducted primarily and routinely by military and government civilian staff. Periodically, USSTRATCOM utilizes external and independent organizations to provide their perspectives on strategic deterrence. External organizations consist of the University Affiliated Research Center (UARC) and the Deterrence and Assurance Academic Alliance.

—The UARC is the academic outreach USSTRATCOM utilizes for nuclear deterrence studies and is a 5-year sole sourced Individual Delivery, Indefinite Delivery Indefinite Quantity (IDIQ) contract in partnership with the University of Nebraska. There is currently a contract agreement with the University of Nebraska which consists of five task orders supporting nuclear deterrence strategy and policy. The task orders are: Behavioral Influence, Deterrence Strategic Stage Set, Risk of Extended Deterrence, Development/Assessment of Narrative/Counter-Narrative, and Horizontal and Vertical Nuclear Proliferation.

—The Deterrence and Assurance Academic Alliance is not a contracted entity but is a collaborative partnership with 31 confirmed member universities and partners. Objectives of the alliance include developing the next generation of deterrence professionals, establishing relationships and continuous dialogue with Academia, and stimulating new thinking in deterrence and assurance studies. USSTRATCOM currently has eight student teams and advisors at local universities and three National Defense University USSTRATCOM Scholars conducting research on deterrence and assurance issues. The Strategic Advisory Group (SAG) is an independent organization not funded by or in contract agreement with USSTRATCOM. With the SAG, nuclear deterrence strategy and policy subject matter experts provide their strategic deterrence and assurance perspectives to CDRUSSTRATCOM.

Mr. GARAMENDI. Admiral Haney and General Klotz: How many pits are required to address geo-political surprise? What analysis was done to arrive at this number? Can you deliver this analysis to Congress? Why do we need to expand plutonium pit production capacity?

Admiral HANEY. The 2010 Nuclear Posture Review and 2013 Report to Congress on the Nuclear Employment Strategy (specified in Section 491 of 10 U.S.C.) states that a non-deployed weapon stockpile, properly sized and ready to address technical

risks, also fulfills the requirements for addressing geopolitical surprise. Accordingly, pit quantities are managed to support the non-deployed weapon stockpile as well as all required stockpile sustainment and life extension activities to maintain a safe, secure and effective nuclear arsenal. The January 16, 2014 Assessment of Nuclear Weapon Pit Production Requirements Report to Congress confirmed the requirement for achieving 50–80 pit per year production capacity by 2030. This requirement was codified by Congress most recently in the 2016 NDAA (Sec. 3140), and is informed by the following factors: 1) U.S. policy objectives to maintain a safe, secure and effective nuclear deterrent is contingent on the national capability to produce plutonium pits, 2) Pit aging studies conclude pits will not have unlimited lifetime, and even with pit reuse, plutonium work may be required to assure weapon safety, security, and long term reliability to preclude the need for weapon testing, and, 3) The ability to produce plutonium pits in sufficient quantity and timeliness to address technical issues is essential to the long term reduction of the non-deployed weapon stockpile.

Mr. GARAMENDI. Admiral Haney, please describe the current level and frequency of dialogue between the United States Government and Russia on strategic matters, to include military-to-military communication. Are you currently facing any statutory restrictions which interfere with your ability to communicate with Russia and ensure strategic stability?

Admiral HANEY. U.S. and Russian officials regularly meet through a variety of bilateral and multilateral venues and at multiple levels. For instance, senior officials meet semiannually as part of the New START Bilateral Consultative Commission. Similarly, the Open Skies Consultative Commission holds working-level sessions on a monthly basis. More importantly, there are a wide array of regular and ad hoc meetings between U.S. and Russian governmental officials.

While I lack awareness of all the intergovernmental interactions that occur with Russia, Public Law 114–92 (Fiscal Year 2016 NDAA) Subtitle E—Matters Relating to the Russian Federation “Section 1246. LIMITATION ON MILITARY COOPERATION BETWEEN THE UNITED STATES AND THE RUSSIAN FEDERATION,” does specifically address funding limitations for any bilateral military-to-military cooperation between the Governments of the United States and the Russian Federation pending certain actions.

Mr. GARAMENDI. Under what circumstances would the U.S. consider the first use of the nuclear weapon? How do these scenarios influence military requirements and U.S. nuclear posture? How do these specific first-use scenarios affect the planned nuclear modernization?

Admiral HANEY. I would refer to the policy articulated in the 2010 Nuclear Posture Review:

- The U.S. will continue to strengthen conventional capabilities and reduce the role of nuclear weapons in deterring non-nuclear attacks, with the objective of making deterrence of nuclear attack on the United States or our allies and partners the sole purpose of U.S. nuclear weapons
- The U.S. would only consider the use of nuclear weapons in extreme circumstances to defend the vital interests of the U.S. or its allies and partners
- The U.S. will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the Nuclear Non-Proliferation Treaty and in compliance with their nuclear nonproliferation obligations

Thus, first use may be considered “in extreme circumstances to defend the vital interests of the U.S. or its allies and partners”. It is our policy not to specify what those “extreme circumstances” are in order to preserve Presidential decision space ensuring they have the ability to respond as appropriate to the crisis at hand. This ambiguity enhances deterrence.

We develop options that can be executed across a range of capabilities. Whether they are executed is solely a Presidential Decision. “First use” does not drive or even directly affect our posture or modernization. The modernization program must continue to ensure that the nuclear force structure is safe, secure, and effective. Without a modernization program that is intended to address the three aforementioned attributes, U.S. senior leaders would have less effective options.

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#### QUESTIONS SUBMITTED BY MR. AGUILAR

Mr. AGUILAR. In your testimony you estimated that modernization costs, spread over 20 years, would be an estimated \$350B–\$450B. However, during the hearing you mentioned that this estimate did not include the warheads, sustainment costs, or command and control among others.

A) Do you have a 25-year estimated costs plan that not only includes modernization, but also warheads, sustainment, and command and control? If so, when will it be delivered to the members of this committee? If not, why not and when is the Department planning on producing such a document?

B) If this estimate were extended to 30 years, would the Department then agree that nuclear modernization could cost an estimated 1 trillion dollars as some commentators have predicted?

Mr. SCHER. The joint Department of Defense (DOD) and National Nuclear Security Administration (NNSA) nuclear weapons sustainment and modernization strategy is presented in the Nuclear Weapons Council Baseline Strategic Plan. The plan, which provides the basis for nuclear weapons budget planning, is a 25-year view summarizing the timelines for production and deployment of nuclear warheads, DOD delivery systems, and associated NNSA production infrastructure such as pit and tritium production. DOD generally does not develop 25-year program cost estimates. The DOD estimates that the total cost of recapitalizing U.S. nuclear forces will be \$350 billion–\$450 billion over the next 20 years. This excludes sustainment and operation of the existing force, which currently costs about \$12B per year. The recapitalization estimate includes modernization of nuclear command, control, and communications, as well as modernization of DOD delivery systems in all three legs of the U.S. strategic nuclear triad. It includes the full cost of the B–21 bomber, even though this aircraft is also being developed to meet conventional warfighting requirements. DOD's recapitalization estimate also includes annual DOD funds reprogrammed to NNSA to support warhead modernization activities, including Life Extension Programs described in NNSA's Stockpile Stewardship Management Plan. DOD will continue to refine its cost estimate as a number of modernization programs mature in the coming years. DOD's 20-year estimate for total nuclear modernization costs covers the bulk of the so-called bow wave of nuclear recapitalization funding. As a result, extending it from 20 to 30 years would not result in a significant proportional increase. The total costs for nuclear modernization over 30 years will be far lower than \$1 trillion.

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#### QUESTIONS SUBMITTED BY DR. WENSTRUP

Dr. WENSTRUP. Administrator Klotz, in your Tritium Report from last October, NNSA estimated costs for build-out of a national security enrichment capacity using the American Centrifuge technology—the only existing technology that is ready for use for national security purposes and which the report found to be “the most technically advanced and lowest risk option for future production of unobligated enriched uranium.” In generating these cost estimates, did NNSA also consider public-private partnerships, lease-to-own, or any other cost-sharing mechanism that would lessen the burden on the taxpayer? If not, why not?

General KLOTZ. As required by the Consolidated and Further Continuing Appropriations Act of 2015, the Department provided an analysis of the available uranium enrichment technology options and a preliminary cost and schedule estimate to build a national security train. The preliminary cost estimate used existing data for the most mature technology available at that time, the American centrifuge technology, and at the time, data was not available to analyze and develop an acquisition strategy. The Department is still conducting market research for its domestic uranium enrichment needs, and will issue a Request For Information (RFI) as soon as practicable to help determine industry interest and contracting mechanisms that would be in the Government's best interest.

Dr. WENSTRUP. Administrator Klotz, in December 2015 and January of this year, NNSA publicly stated that the kick-off of the acquisition process to obtain a domestic enrichment capacity was “imminent,” and that a Request For Information (RFI) related to a future program would be released within weeks, if not days. Six months later, no such RFI has been released. What is the timeline for issuing the RFI and how long do you expect the RFI period to run?

General KLOTZ. The Department is still conducting market research for its domestic uranium enrichment needs, and will issue a Request For Information as soon as practicable.