

THE FINDINGS OF THE CONGRESSIONAL
COMMISSION ON THE STRATEGIC POSTURE
OF THE UNITED STATES

HEARING

BEFORE THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ONE HUNDRED EIGHTEENTH CONGRESS

FIRST SESSION

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OCTOBER 19, 2023
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THE FINDINGS OF THE CONGRESSIONAL COMMISSION ON THE STRATEGIC POSTURE OF THE UNITED STATES

THURSDAY, OCTOBER 19, 2023

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

The Committee met, pursuant to notice, at 9:30 a.m., in room G50, Dirksen Senate Office Building, Senator Jack Reed (Chairman of the Committee) presiding.

Committee Members Present: Senators Reed, Gillibrand, Blumenthal, Hirono, Kaine, King, Warren, Peters, Rosen, Kelly, Wicker, Fischer, Cotton, Ernst, Cramer, Scott, Tuberville, Mullin, Budd, and Schmitt.

OPENING STATEMENT OF SENATOR JACK REED

Chairman REED. Good morning. The Committee meets today to receive testimony on the findings of the Congressional Commission on the Strategic Posture of the United States. I would like to welcome Ms. Madelyn Creedon, who serves as the Chair of the Commission, and Senator Jon Kyl, our distinguished colleague, who serves as Vice Chair.

Thank you both for your decades of service to the Nation. I would also like to thank your fellow Commissioners for their remarkable work on this study and for their long careers of public service.

Your Commission was tasked with an extraordinarily complex problem, and I commend you for coming to a bipartisan consensus on how to address it. I expect that your bipartisan findings, drawn from a diverse set of views, will make the report's recommendations endure for years to come.

The Strategic Posture Commission was established through Section 1687 of the National Defense Authorization Act for the Fiscal Year 2022. The NDAA tasked the Commission with examining the long term strategic posture of the United States, including a threat assessment, a detailed review of nuclear weapons policy, and recommendations as to the most appropriate strategic posture and most effective nuclear weapons strategy.

Our objective today is to examine the rapid global changes in nuclear deterrence, strategy, and arms control discussed in this report. As the Commission rightly points out, successfully maintaining the United States nuclear deterrent is fundamental to our long term strategic competition with China and Russia.

This mission has become more urgent through Russia's assault on Ukraine and because of China's rapid strategic expansion. When we use the word strategic, it is important that we consider the full range of capabilities, both nuclear and non-nuclear, that can produce a deterrent effect.

There are a number of findings in the report that would like to know more about. To begin, the Commission notes that the United States' current nuclear force sizing and acquisition program is based on the 2010 Nuclear Posture Review. That 2010 review was developed at a time we faced only Russia as a real nuclear competitor, and we need to recognize that we are now in a trilateral nuclear competition era with China included.

To that point, the Commission states that we cannot assume we would face Russia and China in sequence, but rather we must have the ability to face both simultaneously. Ms. Creedon, Senator Kyl, I would like to know how you came to this conclusion and how it shapes the rest of your report's findings and recommendation.

The Commission also found that our current program record for nuclear forces is necessary, but not sufficient. The report warns that in its current form, this program—will not be able to “achieve the objective of U.S. defense strategy in the future due to the rapid advancement of the threat, particularly the nuclear threat of two peer adversaries.” This is a concerning statement.

I would ask your views on how we can supplement the existing program of record to correct this shortfall. Your report also expresses concern about the use of nuclear weapons in a limited theater role. The Commission highlights the need to again, “give the President a range of military effective options to deter or counter a Russian or Chinese limited nuclear use.”

You recommend deploying a theater of nuclear capability with a set of unique attributes to meet this need. And I would like to know what specific attributes you would propose, and how the development of a submarine launched cruise missile, which was authorized in this year's National Defense Authorization Station Act, would help satisfy those criteria.

There are a number of other key capabilities we must consider, including long range strike weapons, space assets, cyber capabilities, and the deterrence role of our allies. The Committee will want to know how your report address these non-nuclear factors and how they might affect escalation dynamics going forward.

Finally, I would note that the Commission's findings on arms control prospects appears dim. The report concludes that China's nuclear buildup must be addressed and deterred before new arms control measures can be put in place. As the Commissioners write, “the United States must develop the size and composition of the nuclear force it needs the deterrence requirements before it can develop a negotiation position that can enhance vital U.S. interests.”

The fact is arms control and nuclear modernization are inherently linked together. Even as we modernize, we should seek ways to promote strategic stability, like the extension of the New START Agreement, and follow on talks to cover new strategic weapons and further reduce nuclear stockpiles.

The best way to reduce nuclear weapons is through negotiated arms control. Ms. Creedon, Senator Kyl, I would ask for your as-

assessment of what arms control options are available and what lessons could be applied from the 2010 Nuclear Posture Review and the development of the New START Treaty.

Thank you again for appearing today, and I look forward to your testimonies. I would note to my colleagues that there will be a classified briefing immediately following this session in SVC-217 to continue our discussion. With that, let me recognize the Ranking Member, Senator Wicker.

STATEMENT OF SENATOR ROGER WICKER

Senator WICKER. Thank you very much, Senator Reed. And thanks very much to our witnesses for being here today and for their long time service. We owe our deepest thanks for your lifetime of commitment to America's security.

This is as serious a topic as we will hear about this year. It has been nearly 15 years since the previous Strategic Posture Commission sat before this Committee. They outlined their cautious but hopeful recommendations about how the United States could structure its National Security policies.

They shared an optimistic outlook for how the U.S. policymakers could work with other nations to reduce global threats and work to rid the world of nuclear weapons. Today, we see that world events have unfolded much differently than envisioned 15 years ago. The threats we face today are far more complicated and dangerous than they foresaw.

Indeed, senior flag and general officers continued to testify before this Committee that we are entering the most dangerous National Security moment since World War II. Major conflicts have erupted in Europe and the Middle East.

The United States economy is reeling with inflation and instability. We face the unprecedented prospect of two nuclear armed peer adversaries in Russia and China. The Strategic Posture Commission report offers a stark description of the dangers we face today and over the next 10 years.

It also lays bare just how much work we have to do before we can meet these threats. We are not even close to where we need to be. Over the past 2 years, this Committee has watched China's military grow. Beijing has more than doubled the size of its nuclear arsenal. It has expanded its shipbuilding capacity. So, it is now more—so that the capacity to build ships is now more than 230 times that of the United States—more than 230 times that of the U.S..

And it has increased its space based military capabilities. All of this shifts the orbital balance of power. More than 600 days ago, Russia launched the first invasion of a European country since World War II.

The Kremlin has tested a variety of new nuclear weapons capabilities and threatened to resume nuclear explosive testing. Meanwhile, it actively provides enriched uranium to China to support Beijing's nuclear buildup.

The North Korea nuclear arsenal continues to advance virtually unchecked. It could soon be capable of overwhelming our ballistic missile defenses. Iran may now be as little as a matter of days away from possessing enough material for a nuclear weapon.

At the same time, the regime supports Hamas terrorists in a brazen attack against our long term friend Israel. Our Government should be addressing these threats more urgently. We need a fundamental reassessment of National Security assumptions and strategies.

From that, we should realign our national resources to meet these historic and troubling developments. Instead, we see more of the same. We see complacency and an unwillingness to proactively confront the cold reality staring us in the face.

The Departments of Defense and Energy repeatedly delay the critical programs that could modernize our nuclear deterrent and restore the basic industrial capabilities needed to produce nuclear weapons. The Administration ignores persistent calls to invest adequately in domestic shipbuilding.

They do this despite clear evidence that even while the White House's signature foreign policy initiative, the AUKUS agreement, may struggle to get off the ground without additional resources. We simply cannot accept complacency if we want to prevail in a long term competition with China and Russia.

To prevent war and keep the peace, it is incumbent on legislators to commit today to a program of sustained innovation and investment. This is the only way we can reclaim lost ground. Events, even in the last week, suggest that a national policy of peace through strength is still a blueprint for success. It is time to begin making the national defense investments required to deter the conflicts looming ahead.

That is why the work of this Commission is so timely. This report, first and foremost, is a bipartisan call to action. We very much appreciate that. It compels us to preserve the global order and the American way of life. It should be required reading for everyone working on National Security issues.

I wholeheartedly endorse the recommendations the Commission makes within its pages. So, we would like to hear from you witnesses about how you can help create a sense of national urgency so we can restore America's ability to compete and to rebuild the strategic forces our country needs to win in the coming decades. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Wicker. And now let me recognize Chairwoman Creedon. Madam.

**STATEMENT OF THE HONORABLE MADELYN R. CREEDON,
CHAIR, CONGRESSIONAL COMMISSION ON THE STRATEGIC
POSTURE OF THE UNITED STATES**

Ms. CREEDON. Good morning, Chairman Reed, Ranking Member Wicker, and distinguished Members of the Committee. It is a pleasure to be here, and thank you for the opportunity—

Chairman REED. Could you pull that closer to you, as possible?

Ms. CREEDON. Thank you for the opportunity to testify this morning on the report of the congressional Commission on the Strategic Posture of the United States, which we released on October 12th. Senator Kyl, the Vice Chair of the Commission and I are pleased to appear here today to discuss the Commission's threat informed bipartisan consensus report.

Our report is consistent with our statutory charge, which was to conduct a review of the strategic posture of the United States, including a strategic threat assessment and a detailed review of nuclear weapons policy, strategy, and force structure, and factors affecting the strategic stability of peer competitors and near-peer competitors of the United States, as well as those with nuclear power and the growing nuclear power competition.

I should add that although we did not discuss terrorism in our report as it was beyond our charter, we are all keenly aware that the threat of terrorism, including the possibility of nuclear terrorism, has not gone away. Our report is threat informed, forward looking, nonpartisan consensus.

Our Commission was fully committed to our task and to achieving this consensus. The report provides high level guidance to shape future decisionmaking and generally refrains from choosing specific systems. We provide characteristics of recommended capabilities, but do not pick winners and losers. The timeframe for the report is 2027 and beyond, looking at least to 2035.

We all know that the threats from China and Russia are different but growing rapidly. The hopeful environment and vision of widespread nuclear reductions from a decade ago is no longer realistic, and the prospects for agreements on nuclear arms control today appear bleak. That said, there is no reason to stop pursuing broader risk reduction efforts when achievable and in the U.S. national interest.

If there are opportunities for arms control or other strategic stability talks, military to military talks, confidence building measures, or other opportunities, they should all be explored. Today, the U.S. is on the cusp of a fundamentally different global setting for which we did not plan, and we are not well prepared.

We are facing, confronting, if you will, two nuclear peers and this is unprecedented. The nation must act now and with a sense of urgency that the Commission did not always see. Steps need to be taken to enable both near and longer term decisions.

It is essential that what the U.S. does now and in the next few years will enable the flexibility that will most likely be needed to reshape the conventional and nuclear force structures, and not foreclose options that might be needed. Five assumptions underpin our reports.

The first, Russia and China will continue their current respective adversarial paths, each growing the quality and quantity of their nuclear arsenals. China will continue to grow its conventional forces, including its space and cyber capabilities. Russia will also grow its space and cyber capabilities, and each will continue their aggressive foreign policies and seek to supplant the U.S. global leadership role.

Two, today's one major war strategy construct is no longer viable, particularly given China's current trajectory. And three, the six foundational, long standing tenets of U.S. nuclear strategy remain valid.

These objectives shape nuclear deterrence and planning, and our assured second strike, flexible response, tailored deterrence, extended deterrence and assurance, calculated ambiguity, and the ability to hedge against risk.

Our fourth assumption is strong allies and partners are essential and make us all stronger together, but we need greater cooperation, coordination, and integration with our allies. And five, the U.S. deterrent must be credible and must be seen that way by our adversaries, as well as our allies and partners. In addition, the U.S. needs a true whole of Government approach to deter and prepare for the possibility of a two theater conflict.

The U.S. defense and nuclear strategy must be implemented to effectively deter and defeat simultaneous aggression in two theaters. China can no longer be considered a lesser included case for force structure planning, and nuclear and conventional force sizing and composition must reflect this strategy.

From a force structure perspective, the U.S. nuclear modernization program of record must be fully implemented as rapidly as possible to deter Russia and China. The program of record is necessary, but not sufficient, to address the projected threat.

Moreover, the transition period between the legacy systems and the new modernized systems will be very difficult. It will extend over the better part of a decade, even longer in the submarine force, and as a result, the U.S. must ensure that the legacy systems are sustained and funded so that the nuclear deterrent remains safe, secure, reliable, and effective during this transition.

And unpleasant as it may be, Congress and the Administration should assume that the new systems will be late and probably overbudget. If Russia and China stay on their current trajectories, and nothing we have seen would indicate a change, although of course the situation could improve, the composition of the force must change.

Unfortunately, there is a growing risk of confrontation with China, Russia, or both. This includes the risk of military conflict, including the possibility of nuclear use. To deter and prevent nuclear conflict, the U.S. must increase its conventional forces quantitatively and qualitatively, adopt a more resilient space architecture, modernize nuclear command and control, and advance integrated air and missile defense capabilities.

The Commission notes that each theater is different geographically and will require different forces. Without more conventional forces to deter regional wars, the use of nuclear weapons regionally becomes more likely, and without significant conventional increases, the U.S. will need to rely more on nuclear weapons, not less.

While a large scale nuclear conflict remains unlikely, the probability of regional deterrence failure is increasing. The U.S. needs a force posture capable of simultaneously deterring Russia and China. Much of the infrastructure and industrial base that supports the Department of Defense (DOD) and the National Nuclear Security Administration (NNSA) is out of date.

Both departments are struggling with supply chain issues and neither have enough capacity to meet future requirements. Investment in infrastructure and rebuilding the supply chain and the workforce is needed urgently and will be needed in perpetuity.

This is true for both the NNSA production, as well as the scientific infrastructure, which we cannot ignore, and the DOE and

DOD industrial base. Finally, I would like to highlight the report's findings and recommendations on risk reduction.

The Commission believes it is of paramount importance for the United States to reduce strategic risks. U.S. vital interests and international Security are served by robust diplomatic engagement that reduce uncertainty and reduce the risk of deterrence failure and unnecessary arms competition.

It is in the U.S. national interest to lead and be recognized as leading diplomatic efforts to reduce risk. U.S. nonproliferation efforts and the nonproliferation regime have slowed the spread of nuclear weapons historically, and U.S. and allied threat reduction measures have successfully constrained the availability of nuclear materials and expertise to provincial proliferators.

I would also like to thank Senator Kyl, all of my fellow Commissioners, and the entire Institute for Defense Analysis team. We had many robust discussions, as you might imagine, but in the end, our collective commitment to National Security brought us to this point, a bipartisan consensus. Thank you, and I welcome your suggestions and ask that my full statement be included for the record.

Chairman REED. Without objection. Let me recognize the Vice Chairman, Senator Kyl. Senator.

**STATEMENT OF THE HONORABLE JON L. KYL, VICE CHAIR,
CONGRESSIONAL COMMISSION ON THE STRATEGIC POSTURE
OF THE UNITED STATES**

Mr. KYL. Thank you, Mr. Chairman, Senator Wicker, and other Members of the Committee. When you receive a report such as ours, to the extent that you agree with recommendations, one of the first questions that pops into your mind is, how are we going to translate this into action? And especially with a complex and not well understood subject like our strategic posture and the underpinning of that by our nuclear deterrent.

It does raise a challenge as to how you are going to discuss this and get changes in policy effectuated. Let me address that in a couple of ways first. Our report is, as Madelyn said, a consensus report.

And this didn't come about simply because of the goodwill of the Members of our Committee, which if you look at the resume, you can easily understand represented a very diverse group of—or different points of view.

I think it was because the evidence over the course of the year or so that we studied this was so overwhelming, both as to the threats and as to the kinds of things that we needed to do to meet those threats that it in some respects wasn't difficult to reach the findings and the recommendations that we did.

They are obvious to a serious observer. Well, that being the case, how do you translate that? As a former member of this body, I well understand the importance of constituent support for policies, especially new policies that will cost money.

What that means is, and the Commission specifically made recommendations to this point, Members of the Congress, leaders in the Congress, and in the executive branch, from the President on down, must take a leadership responsibility in discussing these things with the American people.

Yes, they are complicated subjects, and to some extent they are not fun to talk about. But the American people are intelligent, and they care about their National Security, and I am firmly convinced that with the leadership that is represented by this Committee and others in the U.S. Senate and House, and leaders in the executive branch, if the effort is made to discuss these recommendations and policy changes with the American people, forthrightly and consistently these changes can be made.

Now, that starts hopefully with a consensus from you all, just as our Commission arrived at a consensus, because it is difficult if two parties are fighting each other for their constituents out there to figure out exactly what they ought to be supporting.

But to the extent you can come to consensus and then represent that in leading and in educating the American people, we can achieve many of the recommendations that we have made here.

Want to just address one subject and then try to answer two of the questions that Chairman Reed, you asked, very briefly. In our report, we say that we are not prepared to deal with this new threat environment. Very briefly, why do we say that? First, because the existing program of record for our nuclear enterprise is going to be very difficult to achieve on time.

We are undertaking a lengthy process of extending the life of our nuclear warheads, of developing three entirely new—delivery type vehicles for the triad, and to get all of that done in time and change out what we have for these new weapons and delivery systems on the schedule that have been set forth is going to be exceedingly difficult.

This is recognized by the program managers. Their answer to it is that we will figure out a way to do it on time. We really respect their optimistic can do attitude, but that is not enough of an answer, so we have to address gaps in deterrence that could occur.

Second, we say that that is what was recommended to meet the threat identified in 2010. The world has totally changed since then. What about these new threats? The fact that we now will face two peer nuclear adversaries?

Well, obviously, changes need to be made. And they primarily involve greater capacity to deal with these new threats. That capacity cannot exist when it is needed if it is not started now. So, our point is that changes have to be made now.

You all will have very important responsibilities to identify where we need to have additional capacity, and how you think we can best get there, and what kind of appropriations are needed to fund it. Just to give you a couple of examples.

On the conventional side—well, this applies to both conventional armed and nuclear. We need better submarine building capacity. And the ranking member certainly has made that point clear. And that is true with respect to both our attack and our missile submarines. We lack the industrial base to do that right now to get it done on time.

That problem has to be addressed urgently. And if we start now, we might be ready by the time we have to develop those new weapons. Another example concerns the nuclear weapons themselves. We are just now beginning to modernize the nuclear enterprise, the

laboratories and other production facilities that are important for the nuclear weapon development.

And it is clear that the capacity will need to be increased. You all will need to study how much of an increase is appropriate at this time and how much of that to build into the program that will enhance both our labs and our other production facilities. And that work needs to start now rather than later.

So those are just two examples of what we mean when we say that we are not prepared, we are not meeting our current program, and we have barely begun to address a new program of record.

Now, if I could just very briefly address two questions that the chairman asked that really require hours to address, but they are the right questions. How did we conclude that we may have a simultaneous need to deal with adversaries, China and Russia.

After a year of being briefed by a lot of experts, just about everybody that has a responsibility within our Government, to be prepared, it was clear that we have a new threat for the first time in our history.

We possibly face two nuclear peers. That threat will materialize—for the Russians, they have already pretty much completed their modernization. They are almost done. Chinese are well on the way toward achieving their military buildup, and their goal is to have parity with Russia and with the United States.

The United States has barely begun our part of this race. The threat is clear. You look at capacity and then you look at intentions, and you can't look at either Russia or China today without concluding that we have two adversaries here who have goals antithetical to the interests of the free world, and the United States in particular, and who have expressed a willingness to violate international norms to achieve those goals.

In the case of Russia, having already taken action against Ukraine, which demonstrates its willingness to violate international norms with military to achieve their purposes. China, I believe, and I think we conclude, is no less willing to use force to achieve its aims. It has done so in various ways throughout the South China Sea, for example, and it makes no bones about its ultimate goals.

I think we have heard a lot recently about believing what adversaries say when they tell you what they want to achieve as their sovereign goals. And because both China and Russia appear willing to do this with military means, it then devolves upon us to find ways to prevent this from happening, because we are dealing with two nuclear powers here and we have got to prevent nuclear war.

Deterrence is what this is all about. So that is how we reach the conclusion that the only clear eyed way to look at this is that you can't ignore the possibility. That either in concert or perhaps simply because one of those two countries has started something with us, the other sees an opportunity to pursue its goals also militarily.

And we have made clear in our report that the conventional and nuclear deterrent fit together here. You have got to try to prevent the war with conventional means because once it starts, it is very, very difficult with nuclear powers not to concede—or conceive of an escalation that involves nuclear weapons.

The second question was the—really the meat of our report, Mr. Chairman. How to supplement the existing program of record with changes necessary to meet these two new threats. And I will just shortcut it by saying that our report is full of recommendations.

They range from things that we can begin doing today to enhance our capability, which I spoke to, things that we can be doing today to begin exercising capabilities that we may need. Like uploading, for example, we talk about that.

And then longer range changes that may require changes in the size and composition of our forces. All of that is described in quite a bit of detail in our report. And the point is that it goes far beyond the existing program of record to establish capabilities that are going to be required to meet these two new threats, which were not the subject of the 2010 program of record or the last Commission report.

There is one word that we all agreed, a consensus among our Commissioners, that we wanted to convey to you. I would be remiss if I didn't tell you what that one word is, it is urgency. And so, with that one word, Mr. Chairman, thank you.

[The joint prepared statement of The Honorable Madelyn R. Creedon and The Honorable Jon L. Kyl follows:]

JOINT PREPARED STATEMENT BY THE HONORABLE MADELYN R. CREEDON AND THE
HONORABLE JON L. KYL

PREFACE TO THE FINAL REPORT

The militarily troubling and increasingly aggressive behaviors of Russia and China over the past decade led Congress to direct a review of the strategic posture of the United States, including nuclear weapons policy, strategy, and force structure.¹ We have the privilege to serve as the chair and vice chair of this second Strategic Posture Commission (SPC).

Much has happened since the first SPC released its report in 2009.² China's rapid military buildup, including the unprecedented growth of its nuclear forces, Russia's diversification and expansion of its theater-based nuclear systems, the invasion of Ukraine in 2014 and subsequent full-scale invasion in February 2022, have all fundamentally altered the geopolitical landscape. As a result of China's and Russia's growing competition with the United States and its Allies and partners, and the increasing risk of military conflict with one or both, as well as concerns about whether the United States would be prepared to deter two nuclear peers, Congress determined it was time for a new look at U.S. strategic policy, strategy, and force structure.

The first SPC had a charge like ours: "to conduct a review of the strategic posture of the United States and to make a recommendation on how to move forward."³ The vision of a world without nuclear weapons, aspirational even in 2009, is more improbable now than ever. The new global environment is fundamentally different than anything experienced in the past, even in the darkest days of the cold war. Today the United States is on the cusp of having not one, but two nuclear peer adversaries, each with ambitions to change the international status quo, by force, if necessary: a situation which the United States did not anticipate and for which it is not prepared. While the risk of a major nuclear conflict remains low, the risk of military conflict with either or both Russia and China, while not inevitable, has grown, and with it the risk of nuclear use, possibly against the U.S. Homeland.

We started our work with extensive intelligence briefings to understand this new, rapidly changing security environment. These briefings underpin our conclusion

¹Congress established the parameters of the review and a Strategic Posture Commission to carry it out in the National Defense Authorization Act for Fiscal Year 2022, Pub. L. 117–81, 135 Stat. 2126, 117th Cong.

²William J. Perry and James R. Schlesinger, *America's Strategic Posture: The Final Report of congressional Commission on the Strategic Posture of the United States*, (United States Institute of Peace, 2009).

³*Ibid*, Chairman's Preface.

that as a nation we need to urgently prepare for the new reality, and that measures need to be taken now to deal with these new threats. We believe that prompt actions are needed to provide future decisionmakers viable options to credibly deter conflict. Being unprepared for the reality of two nuclear peers, who are dedicated to and focused on undermining the post-cold war international order that has served the United States and its Allies and partners so well, is, in our view, not an option.

We had extensive discussions and briefings on the problems we face as a Nation, including workforce shortages, supply chain limitations, and inadequate physical, scientific, technical, and experimental infrastructure at the Department of Defense (DOD) and Department of Energy/ National Nuclear Security Administration (DOE/ NNSA). These shortcomings resulted from years of inattention and if not addressed promptly, will continue to limit the U.S. ability to prepare and respond to the new challenges.

As we discussed this new normal, we also concluded that the United States does not truly have, but must commit to, a “whole-of-government” approach to be more efficient and effective.

Keeping up with technology is also a challenge. Whereas in the past, when U.S. Government research was uniformly on the cutting edge, that role has shifted to the private sector in many areas. As a result, the DOD and DOE/NNSA will have to change traditional procurement practices to work effectively with the private sector to rapidly develop and deploy new cutting-edge technology.

Allies and partners are important as together we are stronger. Greater cooperation, coordination and integration with our Allies and partners is essential to deter conflict and prosper economically. National leaders must communicate to U.S. citizens the benefits and importance of U.S. global leadership, Allies and partners and extended deterrence, if they are to gain the support of the American people for the associated policy and costs.

Our review sought to address and respond to this new, more dangerous, and more competitive environment, while looking for ways to improve strategic stability and reduce the risk of conflict. We know that this will be difficult on many levels, but we believe that our recommendations can help shape needed future strategy and posture decisions.

For the most part the Commission deliberately avoided making specific force structure recommendations; instead, we identified capabilities beyond the existing program of record (POR) that will be needed. We believe it is appropriate to leave specific material solution decisions to the executive branch and Congress. We were clear, however, that the nuclear force modernization POR is absolutely essential, although not sufficient to meet the new threats posed by Russia and China, and that the elements of the POR should be completed on time, expedited wherever possible, and expanded as needed.

We also found that adopting new technologies faster, and working with smaller innovative companies will be necessary to support a modern, flexible, force structure and infrastructure in the future.

While we did not conduct a cost analysis of our recommendations, it is obvious they will cost money. We do recognize budget realities, but we also believe the Nation must make these new investments and U.S. leaders must communicate to U.S. citizens both the need and urgency to rebuild the nuclear infrastructure and modernize the nuclear forces. These investments in the nuclear enterprise are a relatively small portion of the overall defense budget but provide the backbone and foundation of deterrence and are the Nation’s highest defense priority. The investments the Commission recommends in both nuclear and conventional capabilities will provide a safe, secure, reliable, effective, and credible deterrent, which is essential to reduce the risk of conflict, most importantly nuclear conflict.

From the outset the Commissioners understood that our most valuable contribution to U.S. national security would be a consensus report. There were certainly differences of opinion and a multitude of views expressed amongst our members during our many robust debates and discussions. No doubt some commissioners might have stated some things differently. For example, a number of commissioners believe it is inevitable that the size of the U.S. nuclear stockpile and the number of delivery systems should increase. We all agreed, however, on the findings and recommendations in this report and the need for actions now to better position the United States for the future and ensure a safe, secure, reliable, and credible deterrent.

We believe that sustained bipartisan consensus is possible and necessary to secure a strong future and credible deterrent for the United States. Moreover, we hope this report illustrates to policy-and decisionmakers that even with different opinions, people of good faith can work together for the common good on fundamentally important matters.

This report would not have been possible without the excellent work of the Institute for Defense Analyses (IDA) leadership and staff. We extend a sincere thank you to our Executive Director, Maj. Gen. William Chambers (USAF retired) and the IDA staff.

EXECUTIVE SUMMARY OF THE FINAL REPORT

The United States faces a strategic challenge requiring urgent action. Given current threat trajectories, our Nation will soon encounter a fundamentally different global setting than it has ever experienced: we will face a world where two nations possess nuclear arsenals on par with our own. In addition, the risk of conflict with these two nuclear peers is increasing. It is an existential challenge for which the United States is ill-prepared, unless its leaders make decisions now to adjust the U.S. strategic posture.

The congressional Commission on the Strategic Posture of the United States was established by the Fiscal Year (FY) 2022 National Defense Authorization Act (NDAA), and concludes that America's defense strategy and strategic posture must change in order to properly defend its vital interests and improve strategic stability with China and Russia. Decisions need to be made now in order for the Nation to be prepared to address the threats from these two nuclear-armed adversaries arising during the 2027–2035 timeframe. Moreover, these threats are such that the United States and its Allies and partners must be ready to deter and defeat both adversaries simultaneously.

We arrive at these conclusions following a comprehensive year-long review of the threats America faces and its strategy and planned capabilities to address those threats. The evidence demonstrates that the U.S.-led international order and the values it upholds are at risk from the Chinese and Russian authoritarian regimes. The risk of military conflict with those major powers has grown and carries the potential for nuclear war. Therefore, the Commission reached the unanimous, non-partisan conclusion that today's strategic outlook requires an urgent national focus and a series of concerted actions not currently planned. In sum, we find that the United States lacks a comprehensive strategy to address the looming two nuclear-peer threat environment and lacks the force structure such a strategy will require.

In reaching that overall conclusion, we make clear that the fundamentals of America's deterrence strategy remain sound, but the application of that strategy must change to address the 2027–2035 threat environment. Those changes drive necessary adjustments to the posture of U.S. nuclear capabilities—in size and/or composition. A full spectrum of non-nuclear capabilities is also essential to the Nation's strategic posture. Such adjustments, in turn, drive the need to strengthen and expand the capacity of the infrastructure required to sustain and enhance U.S. strategic capabilities. In addition, Allies and partners are central to our findings regarding strategy and posture. We also emphasize the need for robust risk reduction efforts as fundamental to the U.S. approach in the new threat environment.

Adhering to the stipulations of our mandate, the report that follows delineates 131 findings and makes 81 recommendations. Those findings and recommendations are found at the beginning and end, respectively, of each chapter that follows; a complete list is also included following the report's conclusion. Our most important recommendations are summarized here:

STRATEGY

To achieve the most effective strategy for stability in light of the 2027–2035 threat environment, the Commission identifies three necessary changes:

- The United States must develop and effectively implement a truly integrated, whole-of-government strategy to address the 2027–2035 threat environment.
- The objectives of U.S. strategy must include effective deterrence and defeat of simultaneous Russian and Chinese aggression in Europe and Asia using conventional forces. If the United States and its Allies and partners do not field sufficient conventional forces to achieve this objective, U.S. strategy would need to be altered to increase reliance on nuclear weapons to deter or counter opportunistic or collaborative aggression in the other theater.
- The size and composition of the nuclear force must account for the possibility of combined aggression from Russia and China. U.S. strategy should no longer treat China's nuclear forces as a "lesser included" threat. The United States needs a nuclear posture capable of simultaneously deterring both countries.

The Commission recommends the United States maintain a nuclear strategy consistent with the Law of Armed Conflict (LOAC), based on six fundamental tenets—assured second strike, flexible response, tailored deterrence, extended deterrence

and assurance, calculated ambiguity in declaratory policy, hedge against risk—and apply these tenets to address the 2027–2035 threat.

STRATEGIC POSTURE

In the context of a strategic posture deploying both conventional and nuclear capability, the Commission believes the traditional role of nuclear weapons in U.S. defense strategy remains valid and of continuing importance: deterrence of adversaries; assurance of Allies; achieving U.S. objectives should deterrence fail; and hedging against adverse events.

The current modernization program should be supplemented to ensure U.S. nuclear strategy remains effective in a two-nuclear-peer environment.

Comprehensive risk-mitigating actions across U.S. nuclear forces must be executed to ensure that delays in modernization programs or early age-out of currently deployed systems do not result in militarily significant shortfalls in deployed nuclear capability.

The U.S. strategic nuclear force posture should be modified to:

- Address the larger number of targets due to the growing Chinese nuclear threat.
- Address the possibility that China will field large-scale, counterforce-capable missile forces that pose a threat to U.S. strategic nuclear forces on par with the threat Russia poses to those forces today.
- Assure the United States continues to avoid reliance on executing Intercontinental Ballistic Missile (ICBM) launch under attack to retain an effective deterrent.
- Account for advances in Russian and Chinese integrated air and missile defenses (IAMD).

The U.S. theater nuclear force posture should be urgently modified to:

- Provide the President a range of militarily effective nuclear response options to deter or counter Russian or Chinese limited nuclear use in theater.
- Address the need for U.S. theater nuclear forces deployed or based in the Asia-Pacific theater.
- Compensate for any shortfall in U.S. and allied non-nuclear capabilities in a sequential or simultaneous two-theater conflict against Russia and China.
- Address advances in Russian and Chinese IAMD.

NUCLEAR SECURITY ENTERPRISE INFRASTRUCTURE AND ORGANIZATION

The Commission recommends the DOD and DOE/NNSA strategic infrastructure be expanded to have sufficient capacity to:

- Meet the capability and schedule requirements of the current nuclear modernization POR and the requirements of the force posture modifications recommended by the Commission in time to address the two-peer threat.
- Provide an effective hedge against four forms of risk: technical failure of a warhead or delivery system, programmatic delays, operational loss of delivery systems, and further deterioration of the geopolitical environment.
- Flex to respond to emerging requirements in a timely fashion.

To support the proposed strategy, the Commission recommends Congress fund an overhaul and expansion of the capacity of the U.S. nuclear weapons defense industrial base and the DOE/NNSA nuclear security enterprise, including weapons science, design, and production infrastructure. Specifically:

- Congress should fund the full range of NNSA’s recapitalization efforts, such as pit production and all operations related to critical materials.
- Congress should forge and sustain bipartisan consensus and year-to-year funding stability to enable the defense industry to respond to innovative DOD contracting approaches and invest with more certainty.
- Congress should enact annual DOD and DOE authorization and appropriation bills before the beginning of each fiscal year.
- Congress should place the purview of all “050” programs (President’s Budget line item for “national security”) that are in NNSA under Defense appropriations subcommittees (House Appropriations
- Cabinet Secretaries, working with states and union leaders, should establish and increase the technical education and vocational training programs required to create the Nation’s necessary skilled-trades workforce for the nuclear enterprise. Committee-Defense (HAC-D), Senate Appropriations Committee Defense (SAC-D).

The Commission recommends a number of specific actions to expand the capacity and effectiveness of the Nation's infrastructure and supply chain for its strategic capabilities.

NON-NUCLEAR CAPABILITIES

The Commission recommends:

- The United States urgently deploy a more resilient space architecture and adopt a strategy that includes both offensive and defensive elements to ensure U.S. access to and operations in space.
- The United States and its Allies take steps to ensure they are at the cutting edge of emerging technologies—such as big data analytics, quantum computing, and artificial intelligence (AI)—to avoid strategic surprise and potentially enhance the U.S. strategic posture.
- The United States prioritize funding and accelerate long-range non-nuclear precision strike programs to meet the operational need and in greater quantities than currently planned.
- The United States develop and field homeland IAMD that can deter and defeat coercive attacks by Russia and China, and determine the capabilities needed to stay ahead of the North Korean threat.⁴
- The Secretary of Defense direct research, development, test and evaluation into advanced IAMD capabilities leveraging all domains, including land, sea, air, and space. These activities should focus on sensor architectures, integrated command and control, interceptors, cruise and hypersonic missile defenses, and area or point defenses. The DOD should urgently pursue deployment of any capabilities that prove feasible.
- The Secretary of Defense and the Military Departments transfer operations and sustainment responsibility for missile defense to the appropriate Military Departments by 1 October 2024. This will allow the Missile Defense Agency (MDA) to focus on research, development, prototyping and testing.

ALLIES AND PARTNERS

The Commission believes it is in the U.S. national interest to maintain, strengthen, and when appropriate, expand its network of alliances and partnerships. These relationships strengthen American security by deterring aggression regionally, before it can reach the U.S. homeland, while also enabling U.S. economic prosperity through access to international markets. Withdrawing from U.S. alliances and partnerships would directly benefit adversaries, invite aggression that the United States might later have to reverse, and ultimately decrease American, allied, and partner security and economic prosperity. Further, the Commission believes that our defense and the defense of the current international order is strengthened when Allies can directly contribute to the broader strategic posture, and the United States should seek to incorporate those contributions as much as possible.

- The Executive branch should recognize that any major change to U.S. strategic posture, policies, or capabilities will have great effect on Allies' perceptions and their deterrence and assurance requirements. As a result, any changes should be predicated on meaningful consultations.

RISK REDUCTION

The Commission believes it is of paramount importance for the United States to work to reduce strategic risks. This involves activities and programs across the U.S. Government, including in nonproliferation and arms control, as well as maintaining strong, viable, and resilient military forces.

- The Commission recommends that a strategy to address the two-nuclear-peer threat environment be a prerequisite for developing U.S. nuclear arms control limits for the 2027–2035 timeframe. The Commission recommends that once a strategy and its related force requirements are established, the U.S. Government determine whether and how nuclear arms control limits continue to enhance U.S. security.
- The Commission recommends that the United States continue to explore nuclear arms control opportunities and conduct research into potential verification technologies in order to support or enable future negotiations in the U.S. na-

⁴A “coercive” attack consists of limited conventional or nuclear strikes intended to convince U.S. leadership that the costs of intervening or persevering in a conflict involving the attacker are too high.

tional interest that seek to limit all nuclear weapon types, should the geopolitical environment change.

- Where formal nuclear arms control agreements are not possible, the Commission recommends pursuing nuclear risk reduction measures to increase predictability and reduce uncertainty and the chances for misperception and miscalculation.

The 2009 congressional Commission on the Strategic Posture of the United States reported that the United States was at “a moment of opportunity . . . but also a moment of urgency”—because the security environment had improved and the threat of nuclear proliferation was the principal concern. Since 2009, the security environment has dramatically worsened and new existential threats have emerged. This Commission concludes that the United States now faces a high stakes challenge that requires urgent action. Nevertheless, the Commission has not seen the U.S. Government demonstrate the urgency and creativity required to meet the challenge. Nothing other than synchronized steps taken by the Executive and legislative branches will craft the strategy and build the posture the Nation requires.

The challenges are unmistakable; the problems are urgent; the steps are needed now.

Chairman REED. Well, thank you both for not only the extraordinary work on your report, but also your very compelling testimony today. And you have recognized, and as Senator Kyl suggested, now it is our responsibility to socialize, if you will, the reality that history has changed. That we are now facing a three way competition.

But one question I have, and it probably went into the deliberations, is that most of our deterrence theory, most of the systems we set up were based on models that were bipolar. You know, the triad, you know, all of that, that was based on a bipolar model.

Are you comfortable after your review that you have enough people thinking about what are the dynamics of the three party competition? For example, it seems that President Xi sent a signal to President Putin that using nuclear weapons in Ukraine would not be useful.

And that is something that you wouldn't expect, but one interpretation is he doesn't want to see the Japanese or the South Koreans develop their nuclear force. So, I just wonder in your considerations, you know, have you looked at what is the underlying logic and model for a three party competition, Madam Chairman?

Ms. CREEDON. Thank you. We did. And when we came to the conclusion that the program of record was necessary but not sufficient, this was part of this discussion. So, we all endorsed the idea of the triad, and that the triad needs to be modernized and replaced.

And that it is certainly suitable, but the not sufficient part is how you think about addressing the other peers, and that is where flexibility comes in, hedging comes in. Having an infrastructure where you can tailor your deterrence, so tailored deterrence becomes quite important.

You know, how you can respond, how you can do the things that you need to do to really have a deterrent effect and dissuade others from thinking that they can start something. We also talked a lot about the importance of allies in this and how allies—we have to do a much better job in terms of planning with our allies, coordinating with our allies, integrating with our allies, because that is also one of our big advantage, big strategic advantage in how we offset these two peers.

They are different allies, obviously different theaters, but we have to do better, you know, with our allies. And the third part of all of this is really is utilizing all of our tools of Government. And I know we talk about that all the time, but we really have to do this. We really have to do the diplomatic.

We have to look at sanctions. We have to look at all of our tools in a coordinated fashion because that is a very important role, or a very important part of our strategic deterrent, and we don't do that very well either.

Chairman REED. Senator Kyl.

Mr. KYL. Might I just add two points directly related to your question about the trilateral nature of this. First is the recognition that whereas 10 years ago we treated China as a lesser included case within Russia.

So, whatever we needed to deal with China, whatever we used for Russia, that would suffice. That is no longer the case. China is now a separate case, and it has every intention to be on parity with Russia and the United States, so we have to treat China in that fashion.

Second, it is really important—and you asked about our discussions with the experts here. I am not sure that there is an adequate appreciation of the fact that the likely war scenarios that we are talking about here involve two very different theaters where it is not really practical to assume that you could transfer the assets from one theater to the other to deal with the second contingency.

The European war is a land war. The Chinese situation would undoubtedly involve a lot of sea and air power. And transportation itself is a very difficult proposition for which we are ill prepared. That is one of our findings.

So, in thinking about the three different parties here and the two possible adversaries, we were very cognizant of the fact that you have to treat them as separate challenges, each with separate responses.

Chairman REED. Thank you. My time is rapidly expiring, so I will make a comment more than a question, which is in 2010, we had very sophisticated people look at what was going on and they delivered a very good report, but they did not anticipate China suddenly deciding to become a front rank nuclear power.

We are looking here today, and I wonder, and you know this again, this will be a comment because my time expired, we are looking at things like AI, looking at things that maybe, you know, 10 years from now, people—your successors will look back and say, well, we didn't take advantage of that.

So, I just—I will send a letter for the record of how the Commission dealt with the disruptive technologies that are emerging. And with that, let me recognize—

Senator WICKER. Well, let them answer that.

Chairman REED. Okay. Senator Wicker would like you to answer—please brief.

Ms. CREEDON. Well, we spent a fair amount of time talking about this and one of—well, there are a lot of things but just to be really brief, the view of the Commission is we are in this for the long game, and we need to plan, we need to prepare now, we need to

figure out, we need to analyze what are all these new technologies, how do we utilize them.

And part of it is also bringing them in to the defense establishment in ways that we can't now. So, part of it is the procurement system. We are not the procurement Commission. There is a whole other Commission looking at that. But it is very important that we take advantage of these emerging technologies and develop them to our advantage. It is space. It is cyber. It is AI. It is machine learning. It is additive manufacture. It is a very long list.

Chairman REED. Thank you. Senator Wicker, please.

Senator WICKER. And we are not particularly adept at doing things nimbly and quickly in that regard. Look, thank you for your work. Really appreciate it. Madam Chair, the Commission makes 81 recommendations. And did you have help from the Office of Management and Budget during the course of the Commission's work?

Ms. CREEDON. No.

Senator WICKER. Okay, well, we have a national debt now of \$33.6 trillion. How much are these 81 recommendations going to cost, and to what extent did you talk about budgetary and long range paying for this? Senator Kyl.

Ms. CREEDON. So, we did. We are very cognizant of the fact that we make a lot of recommendations that will cost money. It is—it just is, and they will cost money. But again, we are in this for the long term.

And so, all of the expenditures are not this year. They are not next year. Some of them are 10 years, some of them are 30 years down the road. But our point was that we need to plan now. We need to take action now. We need to address the infrastructure. We need to do things now that will enable decisions to be made into the future.

Senator WICKER. Well, I tend to agree with you, and that is a frustration I have had, as you know, with our conventional weapons. Does the report or some annex put a price on what you are asking for us to do over the next 10 years? Senator Kyl.

Mr. KYL. Mr. Chairman, Senator Wicker, the answer to that is no, and it was deliberate. First of all, it was not within our writ. Second, because so much of this is in our ears, it would be folly for us to try to put an exact number on it.

But having said that, we thought about it a lot and we decided that the best thing for us to do was to convey policy changes that we believed were necessary, and that the prioritization for funding those would naturally then devolve to you and to the executive branch.

But here is the guiding principle. Every recent Secretary of Defense—recent, I am thinking of the last three or four, and Joint Chiefs Chairman have testified that the No. 1 priority for our National Security is our strategic deterrent, and the nuclear deterrent underpins that. If it is the No. 1 priority, whatever funds are available, that should have first call on those funds.

That is what No. 1 priority means. If everything else depends upon this, this foundation, this rock has to be firm to begin with. So that is my guiding principle in backing our—my fellow Commissioners in saying that we wanted to recommend to you what we

thought was essential and that you would find a way to be able to support that financially.

I would just make two other quick points. Our current program of record is already built into our budget, and we know that the nuclear component here is a very small percentage of our overall defense budget.

And yet it is, we say the No. 1 priority. Second, we are spending, what, about 3 percent of our GDP today on defense?

Senator WICKER. Less than that, actually.

Mr. KYL. Less—if you factor in inflation and you also factor in what most of that money, a majority of the money goes to, to service the people that we are asking to defend our country, not the programs, this is less—this is half as much as we were spending during the buildup during the 1980's, for example. This is an affordable thing for the United States of America to prevent nuclear war.

Senator WICKER. Thank you. Senator Kyl, and appreciate you making the point about the percentage of GDP, and we are going to have to wrestle with that. There are a lot of people on this Committee who are as involved in this issue as you are and intricately understand this. Senator Fischer, as subcommittee chairman, has done excellent work. Talked though to the public out there.

We see today, just out of the Defense Department, that China has 500 nukes. We thought last year they had 400. Now it is 500. Russia has way more than that, and we see what is—and we see what is happening with the Islamic Republic of Iran.

We have got hundreds of nukes pointed into each other, the public says. How much—when is enough, enough? And again, Senator Fischer would never ask that question because she understands the answer.

But talk to the public right now, if you will, about that question so that they—so that the people who are out there—running their daily lives, who don't deal with this every day, can appreciate what you have looked at for the last three or 4 years.

Mr. KYL. Thank you, Senator Wicker. Just to make one point about this. We thought that the number that we have deployed is enough to deal with the threat that then existed, which was Russia, and our two countries have approximately the same number of strategic deployed weapons.

Obviously, Russia has a lot more tactical or non-strategic weapons than we do. But now China has entered the game, as you say. The number that they may have is in the area that you mentioned, and their goal is to have parity with Russia and the United States within the next 10 to a dozen years.

So, when you say, well, what is enough? That is a question we have to answer under these new circumstances. And I think we can explain to the American people that we thought we had a peace dividend and opportunity and time to take a rest from having to spend money on our nuclear deterrent.

And unfortunately, we allowed our facilities to atrophy. We are now relying on weapons which are decades old, which were designed back in the 70's and 80's. We are using delivery systems that are past their lifetime.

And I think the American people can understand that when you don't maintain what you have—and these are very sophisticated items. This isn't like a dishwasher. But things wear out. And so, when you have to replace them, it is going to cost money.

If the most important thing for us is to stay out of a nuclear war, and we have a deterrent policy that we think can enable that, and this is what it requires to deter our adversaries, then we need to get on with the business of modernizing the force to achieve that.

And overall, given how wealthy our Nation is, its GDP, 3 or 4, maybe less than 1 percent just for this, but let's just say the entire thing, maybe 4, 5 percent of GDP. Is that too much to assure that we are not going to be in a nuclear war? I don't think so.

Chairman REED. Thank you, Senator Wicker. Senator Hirono, please.

Senator HIRONO. Thank you, Mr. Chairman. Thank you both for your work on the Commission and for your testimony. For both of you, the Strategic Posture Commission detailed several recommendations to improve missile defense, including the need to prepare for cruise and hypersonic missile threats, in addition to ballistic missile threats.

And I have consistently asked the DOD leadership about this exact issue, culminating this year in requiring a study of missile defense within the INDOPACOM AOR in this year's Senate passed NDAA.

What would implementation of the Commission's recommendations regarding missile defense look like from your perspective, particularly for cruise and hypersonic missile defense? Ms. Creedon.

Ms. CREEDON. Thank you, Senator. So, to start, we obviously spent a fair amount of time discussing missile defense, and there are three aspects of it. One is, of course, the national missile defense and how we keep a pace, stay ahead of the North Korean threat.

And so, for that one, we did discuss more ground based interceptors. But the thing that was new was really the need to defend against the cruise, the hypersonics, other things but ballistic missiles.

And we also looked at this in the context of making sure that we can protect and defend against what we referred to as these smaller strikes, these sort of coercive strikes that would be the maybe the precursor to something, where it would—these strikes would keep the U.S. out.

We also looked very carefully at how we protect our key strategic infrastructure. We need to think about those. And again, these are things like—these are point defenses. These are area defenses.

These are not more—you know, the GBIs. And we also felt very strongly that we need to do a lot of research and development. We need to understand where the future is headed. We recognize that this is a difficult area because you can't always just build more GBIs.

But really looking at infrastructure, really looking at research and development, understanding where new capabilities may exist, and then employing those when feasible. But it is that middle

ground, the cruise and theater that we looked at very extensively, and why we made those recommendations.

Senator HIRONO. I think that is really important because our missile defense has focused very much on ballistic missile defense. And when you have North Korea, and at this point Iran possibly, developing their weaponry, I think we need to pay attention to those other two hypersonics and others.

So, I am glad, Ms. Creedon, that you mentioned in your testimony how important our allies are. And the report does highlight the role our allies and partners play in our strategic posture, and multilateral exercises ensure interoperability and improve our posture.

For example, this year, the Navy completed ballistic missile defense exercises with South Korea and Japan. For both of you, how can the DOD better support these types of training with our network of allies and partners in the Pacific? Senator Kyl.

Mr. KYL. Thank you, Senator. You have hit on a couple of very important points here. Nonproliferation has been one of our goals for a long time. It was one of the key goals a dozen years ago when the previous Commission reported.

And we believe that working with our allies to provide greater assurance to them that our nuclear backup will help to protect them is one of the best ways to ensure that we don't have nuclear proliferation around the globe.

So, this is a very important component. It is part of the recommendations that we make here. Nonproliferation is important. Enhancing our ability to deter nuclear war, and the assurance we provide for allies to that extent, is a part of that.

Senator HIRONO. As far as I can see that—the strategic advantage we have over both Russia and China are our network of allies.

And I think the more we engage in various kinds of exercises with them, the better, and especially as China is very intentional in its efforts to be a power in the Indo-Pacific AOR. And they are doing all kinds of economic and other kinds of outreach.

So, the more we are able to show that we have a strong partner network, the better it is. Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Hirono. Senator Fischer, please.

Senator FISCHER. Thank you, Mr. Chairman. I do want to begin by thanking the Commissioners for your work on this report. The report is thoughtful, clear eyed about the threats, and honest about how underprepared we are to address these threats, and we are woefully underprepared.

Since the Second World War, the United States National Security Strategy has been predicated on having one major nuclear adversary, and we now face two major nuclear adversaries for the first time in history.

Russia and China have rapidly modernized their strategic nuclear forces. They have dramatically expanded their theater nuclear forces, and they are developing novel nuclear weapons and delivery systems.

Meanwhile, we have barely begun to modernize our strategic nuclear forces and only plan to replace them on a one for one basis, a plan that was developed on outdated assumptions.

As you say in your report, our nuclear force modernization program of record is, “absolutely essential, although not sufficient to meet the new threats posed by Russia and China.” And as your report also conveys, the United States has no strategy to address this threat.

We cannot effectively deter two nations with a national defense strategy that has one major war sizing construct. Unless we change our strategy, we will not be able to deter both China and Russia. If our adversaries believe that we lack capacity or lack the will to respond to an attack and to defend our allies and partners, they will act accordingly.

Your report had 131 findings and 81 recommendations, which, if acted upon, will provide the United States with the capacity and capability necessary to maintain our place in the world.

These recommendations include changes to the plan, size, and composition of our nuclear forces, including the development of new theater nuclear delivery systems. They include overhauling the NNSA, dramatically expanding our domestic industrial base, including the establishment of a third nuclear shipyard.

Developing a comprehensive homeland missile defense architecture and a resilient space architecture that includes both offensive and defensive elements. And we must do this with a sense of urgency, Senator Kyl, urgency, which has frankly been utterly lacking from the Department of Defense and the Department of Energy.

And to be clear, this is a bipartisan, bicameral Commission. The Commissioners have a wide range of experiences and political viewpoints, and yet the findings and recommendations of this report were unanimously supported. This is no fringe report. This is the consensus of respected National Security experts.

I look forward to working with my colleagues in Congress to turn these recommendations into legislation. The road ahead is difficult and there will be a cost, but we are at a crossroads.

Senator KYLE. The report recommends that the United States, “develop and deploy theater nuclear delivery systems that have some or all of the following attributes, forward deployed or deployable in the European and Asia-Pacific theaters, survivable against preemptive attack without force generation day to day, a range of explosive yield options, including low yield, capable of penetrating advanced integrated air and missile defense with high confidence, and operationally relevant weapon delivery timeline and promptness.” Does the SLCM meet those attributes?

Mr. KYLE. Mr. Chairman, Senator Fischer, the answer is yes.

Senator FISCHER. Of the possible weapons systems that could fit all those criteria, is SLCM the system that could deliver this capability to the commanders most quickly?

Mr. KYLE. Mr. Chairman, Senator Fisher, I don’t know the answer to that because I don’t know what other systems people might propose, which—would satisfy those requirements. What the Commission did was to decide what requirements were needed to give the President the maximum number of options.

These were the elements of a weapon that was needed. SLCM satisfies those elements. Whether there are others that could also be developed, we leave to the experts.

Senator FISCHER. When you speak of giving the President options, would you say that was a priority, one of the main reasons that your Commission believed that having a delivery system with those attributes is necessary to deter our adversaries?

Mr. KYL. Mr. Chairman, Senator Fischer, I believe that that is correct. We talked a lot about the President having different options because we focused a lot on the possibility of escalation.

The Ukraine situation provides a good example where an autocrat has boldly talked about escalating the conventional conflict there by using nuclear weapons. It is not at all outside the realm of possibility that such weapons could be used in a future conflict. Once nuclear weapons are used, you are on a ladder which could quite quickly escalate to a situation beyond control and which we obviously don't want.

The more options that our President has to respond to that kind of action in a way that would tell the adversary that there is no point in trying to escalate this further, the better off we are and the better we are going to be able to deter nuclear war.

Senator FISCHER. Thank you. It is an honor to know you both and work with you. I thank you for the wonderful work that you have done here in bringing us a consensus report that is vital to the National Security of this country. Thank you.

Chairman REED. Thank you, Senator Fischer. Senator King, please.

Senator KING. Thank you, Mr. Chairman. You used the word urgency. I woke up this morning after having gone through your materials, and I had a two word summary of your report which was, hurry up. I think we both are looking at the same data and coming to the same conclusion.

One of the things you noted on page 51 of the report is one of the all-time great understatements. "Infrastructure recapitalization is also hindered by unpredictable, incrementally funded budget levels each Fiscal Year, exacerbated by the continuing practice of continuing resolutions to fund the Government."

We are part of the problem, right? You can answer, yes. I won't be offended.

Ms. CREEDON. Yes, sir.

Senator KING. Yes. I think this is something that we need to consider that the herky jerky funding, continuing resolutions is not supportive of the kind of consistent, long term process that you are talking about.

So, thank you for that recommendations. Is NSA—is NNSA up to this task? I am concerned that they just don't seem to be able to get—I mean I keep having—we keep having meetings on pit production and it is falling behind. And I just wonder if we need to rethink that whole construct. Ms. Creedon.

Ms. CREEDON. So obviously, that is a complicated question. But I think the bottom line is, yes. But, so, there are a number of things going on. One, because there was almost an abandonment of the infrastructure at NNSA, and prior to that the Department of Energy, other than some of the scientific infrastructure that was put in place after the nuclear test ban treaty to help be able to maintain the stockpile in the absence of nuclear testing.

There was a lot of really good work done on the science side, but pretty much the whole production side was just ignored. A lot of it dates back to the Manhattan Project, and the new things are into the 60's and 70's—

Senator KING. I guess, my question is, do you think they are capable of turning this battleship and getting it done?

Ms. CREEDON. They do, but it is complicated. They need the right people. They need the right funding. They need the consistent funding. They need a supply chain that doesn't exist right now, that they have lots of external workforce problems. It is very hard to get people at all levels. It is hard to get electricians. You know, we need unions to train these people. We need welders. I mean, it goes across the board. They need money.

Senator KING. We can followup on this question. I think I would like to hear more, but in limited time here, I want to get to a couple of other questions.

It seems to me that the threat of the Russians using tactical weapons in Ukraine has sort of woken us up that you talk about the President having options. Our deterrent fails if our only option is massive retaliation, and the adversary doesn't believe we will go to that option based upon the use of a tactical nuclear weapon.

That brings us back to SLCM-N. That we need further options on the tactical level, which we have sort of abandoned for 50 years. Senator Kyl isn't that something that we—and I realize you discussed this with Senator Fischer, but I hope you will emphasize that point. We need more options for the President in a case of a limited use of nuclear weapons.

Mr. KYL. Mr. Chairman, Senator King, that is absolutely right. Our report considers a lot of different elements. And without trying to go into a lot of detail, the tactical options are really important because the way you get into this is probably not a bolt out of the blue, but rather an escalatory system that starts with the conventional and then ends up with a small nuclear yield and then something bigger, and perhaps a coercive attack—

Senator KING. But if our only deterrent capacity is a massive retaliation, that is not credible, and therefore deterrence fails at that lower level. Is that correct?

Mr. KYL. In my personal opinion, that is correct. I am not sure I speak for everyone. And I, the—all I can tell you with respect to the consensus of the Commission is that we all agree that the President needs more options, and not just with regard to the kind of weapons and the yield on those weapons and so on.

We talked a lot about our space capabilities. We talked about missile defense, including missile defense of the homeland against these coercive attacks. As Madelyn said, one of the things that we are concerned about is a Chinese or Russian coercive attack, somewhat limited, maybe against industrial infrastructure, maybe military infrastructure, but the kind of attack that would tell us, if you don't buckle under to what we demand, there is a lot more where this came from.

We will stop it for now. Well, that is a hard thing to respond to other than with massive nuclear retaliation, unless you have a missile defense, which can stop it. One of our recommendations is for an urgent RDT [research, development and test], any effort by the

Department of Defense to look into all of the potential feasible options there, including space based missile defenses that might be able to provide additional options other than just the massive retaliation.

Senator KING. My time has expired, but I do think attention also needs to—casting our minds 10 years or 12 years ahead, if you are looking back 10 to 12 years. We need to be thinking about non-State actors obtaining nuclear weapons.

I just googled how to build a nuclear weapon. Low and behold, there is a YouTube, so you want to build a nuke. And I think that is going to be one of the great threats in the future because these are people that are not subject to deterrence if they don't care about dying. So, I think, I hope that is something we can discuss—

Chairman REED. Thank you, Senator King.

Mr. KYL. Mr. Chairman, might I just respond briefly to Senator King's other point about NNSA?

Chairman REED. Of course.

Mr. KYL. I certainly agree with what Madelyn said. Our report contains several recommendations which would strengthen NNSA, and the labs, and production facilities. Part of the problem in the past, there has been a disconnect between lab directors, and NNSA, the Department of Energy, and the Secretary of Energy.

The committees in Congress, which have jurisdiction over both energy matters and defense matters, we make recommendations, for example, to divide the responsibility for water projects for members and our nuclear weapons labs.

Today, the appropriators combine those two together, and it is pretty clear to see which one can come out on the lower end of that stick. So, there are several recommendations that we believe would strengthen NNSA. Today, it may or may not be capable of doing the job. With our recommendations, we believe it would be.

Chairman REED. Thank you, Senator Kyl. Senator Cotton, please.

Senator COTTON. Senator Kyl, Ms. Creedon, thank you. And thanks to all the Commissioners for your hard work on this Commission and the excellent report you have produced.

Senator Kyl, the report concludes that the United States needs to be able to deter combined Russian, Chinese aggression. I don't believe we have anywhere near the nuclear force necessary to accomplish that combined deterrence of Russia and China.

Frankly, I worry that we don't have enough to deter either one individually, especially given China's breakneck nuclear buildup. So, can you tell us how an inadequate nuclear force might invite aggression from these countries, even if it doesn't result in a nuclear war?

Mr. KYL. Mr. Chairman, Senator Cotton, of course, that gets right to the philosophy of deterrence. The potential enemy has to understand that the costs of aggression exceed the potential benefits.

And if he is not sure that the costs of aggression are really going to hurt him that much, then he may be tempted to try. And that is why it is so important for the adversary to believe correctly that

we do have the capacity to destroy everything that is dear to them. That is the essence of the deterrent philosophy.

The Russians and the Chinese can see what we have. We are pretty transparent about it. And they are pretty—I am sure they have a very good idea of the status of our deterrent. And so, they know when we are coming up against deadlines that we are not likely to meet.

They also know this, that our current program of record simply replaces one for one capabilities, as Senator Fischer said in her opening statement. It does not account for the new threat from China. That is why when we say we have got to—it is necessary for the POR, but it is not sufficient.

We mean it is not sufficient because it hasn't calculated China in the equation. So, we have got to have the additional capacity, whether it is additional warheads, the composition of those warheads, the deployment of them, different delivery systems, all of those things would go into our calculations as to what we need to deter this additional threat. And it is not just a concerted conduct between Russia and China.

It is the possibility that one of them is engaged with us and the other sees the opportunity to then begin to make the mischief that they would like to make. So, it is an opportunistic kind of aggression, and that, I think, is something that we have to calculate in deciding what we need to deter war.

Senator COTTON. So, it doesn't require them to openly cooperate, to say, develop joint target lists, that Russia will strike certain bases or missile fields and China will strike others. They simply observe the behavior of each other.

They can signal to each other, and they can take opportunistic, non-nuclear aggressive actions, confident that America, faced with a nuclear overmatch by the two countries combined, or maybe this one country alone, will in the end back down, back down in say, Eastern Europe, or back down in the Taiwan Strait. Is that the point, Senator Kyl?

Mr. KYL. Yes, Mr. Chairman, Senator Cotton. That is exactly right. And these are two countries that have made no bones about the fact that they intend to be cooperating in the future. I have forgotten the exact phrase they used, but they are bosom buddies when it comes to their goal of making trouble for us, and we have to take that into account.

Senator COTTON. And I know many in the United States, some in this Senate, certainly lots in Europe, think that nuclear war is somehow unthinkable. That it is not possible to even imagine that, you know, it would result in the end of humanity. Just to be clear, who we are dealing with here.

We know now, frankly, we knew at the time, but we certainly know now because of the opening of Soviet Russian archives, that that is not the way the Russians saw nuclear war. They viewed nuclear weapons as simply another kind of weapon, and they had plans to fight and to win nuclear war.

Isn't it the case that today's Russia and communist China also view nuclear weapons in just the same way? Not as something to never be used, but something that they have active plans to use, if necessary, to achieve their national goals?

Mr. KYL. Mr. Chairman, Senator Cotton, the Commission spent quite a bit of time on this exact subject, and I think it is in the best judgment of the experts in our Government that Russia certainly has such a doctrine, and it has been in open sources.

The Russian action in Ukraine tend to confirm that that doctrine of Russia could certainly be used. It is a little unclear because China is so opaque exactly how they might want to use their nuclear weapons in the future. But what we have to be very, very fearful of is this escalatory ladder, which once you are on, it is very difficult to control.

Senator COTTON. Thank you.

Chairman REED. Thank you, Senator Cotton. Senator Kelly, please.

Senator KELLY. Thank you, Mr. Chairman. And Ms. Creedon, Senator Kyl, thank you for being here. Ms. Creedon, I want to, well, first of all, thank the Commission and thank both of you for all the hard work it took to put this report together.

And I would like to note that the report specifically recommends, and I quote, “that the United States prioritize funding and accelerate long range, non-nuclear precision strike programs to meet the operational need and in greater quantities than currently planned.”

So, I want to highlight that the SM-6, Standard Missile 6, is a U.S. produced, ship launched to anti-air, anti-surface, and it is a weapon that is manufactured in my home State, and Senator Kyl’s, of Arizona. And it is the only weapon in the inventory that can take out a hypersonic missile.

The SM-6, it is sort of like three missiles in one. It is the only weapon that can perform anti-air, so surface to air warfare, ballistic missile defense, and also have a surface to surface mission. The Commission’s report also notes that the Secretary of Defense needs to direct research, development, test, and evaluation into advanced integrated air and missile defense capabilities, leveraging all domains, including land, air, sea, and space.

So, based on the capabilities of the SM-6 in your findings in the report, what specific recommendations do you think Congress should prioritize to ensure that the U.S. is prepared to defeat threats from Russia, China, Iran, and any other adversarial regimes that emerge?

Ms. CREEDON. Thank you, Senator Kelly. The regional fights, the theater fights, the working—the need to work with our allies, making sure we have missile defense not just at the national levels against ballistic missiles, but having these capabilities to defeat the cruise missiles, to defeat the long range hypersonics.

And then we also have to think about how we think about these things. We need these systems. We need these capabilities for the theaters. Both theaters are—I mean, they are very different, but particularly in the Asia Pacific theater, given the size of the theater, given that we don’t have a NATO alliance.

We have great allies, but not together. We need to join with these allies. We need to train with these allies. We need to have co-development programs. We need to have them very integrated to do all the things that you highlight, to be able to effectively put together regional deterrence, put together a regional offense.

So, research and development is also very important as we think about how we move forward, how we modernize our systems, how we bring in innovation to make sure that we have the necessary capabilities in both theaters.

So, I, you know, we fully support all of the work at this—but, you know, again, as we said, we didn't pick winners and losers. We have capabilities. And certainly, the system you—you know, the SM-6 is absolutely in this ballpark, in this niche.

Senator KELLY. And it is not only about the capability and being able to defeat our enemy system, it is also being able to do it at a range that they can't defeat ours. And I have seen this. I was over in Ukraine about a month ago and convened a roundtable of Ukrainian pilots, MiG-29, SG-27 guys, and we talked in detail about this, about how important it is for us to have a capability, a longer stick, let's say, than the Russians have. And in some cases, they do not have that now. And I think in some cases we find ourselves in the same situation. So, it is a matter of just continuing to improve this.

Ms. CREEDON. And it goes without saying that the conventional deterrent has to be there, because without the conventional deterrent, we rapidly get to the possibility of introducing the theater nuclear in—which we want to avoid, right. So, we need that conventional deterrence, so we never get to that nuclear war.

Senator KELLY. Thank you. And Senator Kyl, it is great to have another Arizona Senator here in Committee today. I have a question about electronic warfare, but I am kind of running out of time.

But briefly, it is a, you know, question about electronic warfare and how integral it is to the Western Pacific. And China is really doubling down on their EW capability, and we have an asset in Arizona that you are—I am sure you have visited a number of times at Fort Huachuca, the electronic proving ground.

And it is a valuable asset, and we have got to—so I am going to submit this one for the record. And, Jon, thank you for being here.

Mr. KYL. Thank you, Mr. Chairman, Senator Kelly. May I just note that there are several things in our report that discussed this. General Hayden, one of our Commissioners, was very helpful in alerting us to several things that we had to be aware of. And we make some specific recommendations regarding, for example, sale of spectrum, which could adversely affect our ability to deal in this particular realm.

Senator KELLY. Thank you.

Chairman REED. Thank you, Senator Kelly. Senator Ernst, please.

Senator ERNST. Thank you, Mr. Chair. And thank you, Ms. Creedon and Senator Kyl, for being here today. And thank you as well for your leadership on this Commission and for providing a comprehensive look at the long term strategic needs of our great United States.

We have heard a lot of different discussions about China and Russia and their implications, but of course, as we have seen over the last few days, Iran is more dangerous than ever. And so, we must ensure that the U.S. has unquestionable nuclear deterrent.

And we have focused on this in the past, the Defend Act, which was put into last year's National Defense Authorization Act, providing for the integrated air and missile defense systems, tying together those countries that are in the Abraham Accords and protecting them against the threat of Iran.

So, Ms. Creedon and Senator Kyl, the Commission focused on not only nuclear forces, but also non-nuclear capabilities that you said could have strategic and even existential threats in unforeseen ways.

So, to that, what steps can we take to ensure that the U.S. is at the cutting edge of emerging technologies, and Ms. Creedon, you spoke to this just briefly, big data analytics, quantum computing, artificial intelligence, all of those areas to avoid strategic surprise and potentially enhance our U.S. strategic posture? So, how can we focus on those areas to contribute to our strategic defense?

Ms. CREEDON. Thank you for that, Senator. So, to be brief here, I would say there are probably two things. One is to make sure that we invest, that the U.S. resumes or maintains, depending on which area we are talking about, the research and development, the leadership in the technology, making sure that all of the—the funding is needed so that we maintain our edge.

And the second thing is really look at what is going on in the defense establishment procurement system so that these things can be brought into our capabilities in a fashion that meets the timely requirements. I mean, it isn't going to do any good if it takes 10 years to get new technology in because it will be old by then.

Senator ERNST. Absolutely. I agree 100 percent. Noted. Thank you so much for that. And Senator Kyl, the Commission recognized that over the next decade, the homeland will face escalating challenges and an evolution of adversarial capabilities within critical technologies.

So, in what ways should the Secretary of Defense approach a strategy and associated strategic posture changes to address the threats posed by emerging and disruptive technologies, including AI and quantum?

Mr. KYL. Mr. Chairman, Senator Ernst, this particularly is with reference to protecting the homeland?

Senator ERNST. Yes.

Mr. KYL. We were concerned about that, not only because of the ballistic missile threat, but because of all of the other kinds of delivery threats now that have emerged. These include the cruise missile threat, the hypersonics with—the Chinese have some capabilities that are particularly troublesome here with their fractional orbital bombardment system, for example.

The United States is lagging behind in developing both offensive and defensive capabilities against these new weapons. This is one of the reasons why we made an urgent recommendation here that the Department of Defense immediately begin an RDT&E [research, development, test and evaluation] program. And we specifically said RDT&E because this can't be just research and development.

This has to be with the goal of producing weapons that can defeat the enemy and getting them deployed. And that is why we say

that we need to deploy the next generation interceptors as soon as possible.

That we needed to develop and field IAMD capabilities, integrated air and missile defense capabilities, that can deter and defeat coercive attacks by Russia and China. That Congress should appropriate the funds necessary for the centers and interceptors necessary to defend these assets.

And we specifically say that the Secretary of Defense should direct research, development, test, and evaluation into advanced IAMD capabilities, leveraging all domains, including land, sea, air, and space.

These activities should focus on sensor architectures, integrated command and control, interceptors, cruise and hypersonic missile defenses, and area or point defenses. If any of these capabilities prove feasible, the department should pursue deployment with urgency.

So, yes, you are—you have got your finger right on one of the big problems here. Our two potential adversaries here are ahead of us in developing these capabilities and we don't yet have the defenses to deter them. So, we need to do that with alacrity and with urgency.

Senator ERNST. I appreciate that, Senator Kyl. Too often we think about simply the missile or a nuclear warhead just to our citizens out there, but there is a lot more that goes into these systems.

And the ability to be able to detect and intercept threats coming from other adversaries, and then deployability of our own systems, and a lot of that is dependent upon where we are with AI and quantum computing. So, thank you all so much for this incredible work. Really appreciate it.

Chairman REED. Thank you, Senator Ernst. Senator Kaine, please.

Senator KAINE. Thank you to the members of the Commission for this work product. My colleagues have asked really good questions about important areas of nuclear deterrence.

I am going to ask a question about what I think is the most understandable and straightforward recommendation in your report. U.S. Government Cabinet Secretary should work with states and union leaders to reform and revitalize U.S. technical education and national workforce development to ensure the availability of critical skilled labor.

What led the Commission to make that recommendation?

Senator ERNST. So, thank you, Senator Kaine. So, as we looked at all of the various programs, all of the various infrastructure, the modernization programs, the thing that kept coming out over and over and over is that this is so hard, this is so new, this is so complex. We don't have the workforce.

You know, one particular example that we spent some time with is at one of the NNSA construction projects, they don't have electricians. You know, the shipyards don't have welders. I mean, all of these fundamental things that this—that we used to have, we don't have them in the quantities we need them.

And so, it is much bigger than the DOD. It is much bigger than a DOE. This is a national problem. So, we just put this out there.

It is beyond our—really beyond our purview to solve this, but we really—it has to be addressed. It has to be addressed.

Senator KAINÉ. I am the son of an ironworker, and I ran a school that taught kids to be welders and carpenters in Honduras in 1980 and 1981. This recommendation is coming up again and again and again.

We did an infrastructure bill. Who is going to build it? We did a manufacturing bill. Who is going to make it? We have made a commitment to try to produce subs not only for the United States but for an AUKUS deal that I strongly support, but the shipyards we have now don't have sufficient workforce to produce on a pace for our own needs, yet much less others.

My colleagues, I imagine many of my colleagues know, but maybe the public doesn't, the primary financial aid program that the Federal Government authorizes, the Pell Grant program, Pell Grants can be used for college, but not for career and technical education.

To get a Pell Grant, if you income qualify, the course has to be the length of a college semester, 15 weeks long. A lot of college courses are 15 weeks, 3 days a week for an hour and a half. So, 4.5 hours a week times 50, maybe 75 hours.

A lot of high quality career and technical education, it is an 8-week course, but it is 8 hours a day, 5 days a week, 300 plus hours, but you can't get a Pell Grant for it. We value college education. We send the signal that we don't value career and technical education.

My son, when he was an infantry commander in the Marines, he could decide that somebody in his platoon got a military tuition assistance grant, but it had to be on a college campus. So, if somebody said, I want \$300 to pass the American Welding Society's certification exam.

I am an ordinance specialist. I can pass it. He could not allow them to do that. We consider career and technical education second class in this country, and it is not. It is what is needed. We ought to celebrate college, of course, but we ought to celebrate career and technical education.

And I have had a bill, bipartisan bill, very bipartisan bill, many of the members of the Committee are co-sponsors to finally say that Pell Grants should be able to be used for high quality career and technical education.

And I think that would be directly responsive to the recommendation you have made and that so many others have made. But as long as we devalue career and technical education in the country, then we are going to have problems here and everywhere else.

Now, I am going to switch over and ask a question about AUKUS. One of the proposals in AUKUS that excites me is the Australian government is willing to invest in the U.S. submarine industrial base.

That is pretty unusual for another nation and say we will invest billions of dollars in the U.S. submarine industrial base because it will help us with integrated defense in the INDOPACOM. In looking—in your Commission's report, did you factor in the AUKUS

proposal? These would be nuclear subs, but not armed with nuclear weapons.

But I am just curious. I know you talk a lot about the importance of alliances. Did you factor in the AUKUS proposal in this Commission's report?

Senator ERNST. So, we were certainly aware of that. Our recommendation really went to the inadequacy of the capacity in our current shipyards.

And, you know, I should add from a personal note, in 2014 was part of—I chaired a review on the internal nuclear enterprise at DOD, and one of the things that we identified in that report in 2014 was the inadequacy of the capacity at the shipyards. It is still there. It is worse.

So, I mean, I certainly welcome the AUKUS contribution, but we need more capacity in our shipyards.

Senator KAINE. Thank you very much. Thank you, Mr. Chair.

Chairman REED. Thank you, Senator Kaine. Senator Cramer, please.

Senator CRAMER. Thank you, Mr. Chairman. Thank you, Chair Crendon and Senator Kyl for your incredible work, and to all the members of the Commission. And I, like Senator Kaine—first of all, I agree with him 100 percent on what he just said with regard to education. We have got to work on that for sure.

And while your Commission found, obviously, a lot of unity, even unanimity, almost at least consensus, I think you sense the same here. This rostrum is—has been pretty committed. You communicate both technically and passionately the obvious, what seems obvious to a lot of us, demand, and you have challenged us, Senator Kyl, and I appreciate this, with the task of convincing our constituents where they may not agree, largely because they may not know.

I am sometimes stunned by how little some people know about recent history, much less—you know, ancient history, much less what to expect going forward. However, the threat of the enemy is getting clearer every day to just about everybody, one would think. So, the demand, it should not be hard for us.

The prioritization, I think, yes. I especially appreciate the way you have not ignored or not siloed nuke and non-nuke. You have not ignored that non-nuclear is an essential part. One of the things I worry about, and this is where I want to get to a thought or a question and get your thoughts, do we make a mistake when we take the No. 1 priority of nuclear modernization, the No. 1 priority—of the No. 1 priority in terms of our responsibilities of securing the Nation, defending the Nation, and silo its budget in the services rather than set it apart as the No. 1 priority of defending this country.

Because I worry a little bit that the priority of nuclear modernization, particularly in this high inflation, fast inflation moment we live in, means that we are going to modernize our nukes, our deterrent, at the expense of non-nuclear.

And silos are a common problem for me, frankly, in the Pentagon. Should we be looking at finding a better way, a more transparent way to demonstrate the cost of all of this and not can-

nibalize non-nuclear defenses by modernizing nuclear? Senator Kyl, first, and then Ms. Creedon.

Mr. KYL. Mr. Chairman, Senator Cramer, well, you are right back to where I started, and I think you are absolutely right. We have got to find ways to discuss this. Our Commission actually makes several recommendations that go to your point.

First thing I would say is that remember that in talking about strategic deterrence, we are not just talking about nuclear. As a matter of fact, we believe that the first thing we have got to do is have a conventional capability, which is so dominant that no party would ever consider a nuclear attack against the United States.

So, we hope to avoid war with our conventional capability. That shouldn't be sacrificed in any way. But, if you don't have the ultimate weapon, the nuclear dominance, then you don't have that element that underpins all of the rest.

And that is why our Secretaries of Defense have said that it is the No. 1 priority. In many ways, our Government hasn't backed that up. The people that used to be responsible for that were general flag officers. It is now far down the ranks. It is your colonels and majors. It is not exactly a big career opportunity path for you to be involved in this part of our national defense.

So, it is not emphasized, and as a matter of fact, it becomes kind of the stepchild. And so, no wonder it lags when it should be the top priority. Among the recommendations we make, we think that the Armed Services Committee should have a closer look at the budgets here rather than a subcommittee of the Appropriations Committee, which also deals with water projects.

Here is one example. We think that the Armed Services Committee should bring the Secretary of Energy candidates before them, not for a vote, but at least to ask them a few things. Do they appreciate as Secretary of Energy that their No. 1 responsibility is our nuclear deterrent? It is not oil wells or whatever.

There are several things that we can do internally here in the Congress to reemphasize the importance of the nuclear deterrent. And finally, I think it has always been a problem when NNSA was created that Secretaries of Defense from both parties have seen that as a stepping on their toes.

They would rather retain the jurisdiction within the department. And we are trying to elevate the NNSA head to a higher position within the department to indicate that we believe this is that important. And the Secretary of Energy has to acknowledge that NNSA is a silo within the department. It is not under the thumb of the Secretary of Energy.

So, there are a lot of different things that we say in here, which if implemented, will help to elevate the work of NNSA and the nuclear enterprise generally to the position that everybody says it has, but doesn't really back up.

Senator CRAMER. You know, I just, I know I am out of time so I am going to wrap up by just saying, one of the things I worry about in this entire discussion is that we are somewhat deteriorating not just our nuclear deterrence but reputational deterrent a little bit by having this transparent conversation that we must have.

But I will tell you all that last week, General Allvin and I were in North Dakota for a couple of days, spent a lot of time at Minot, saw those 60 year old missiles and the control center, and those 60 year old bombers that—and LRSO, and all of that, and I just want anybody who is listening to know, they are still very capable. Be very, very cautious. We are still very capable while we transition. Thank you both very much. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Cramer. Senator Rosen, please.

Senator ROSEN. Well, thank you, Chairman Reed. And thank you, Senator Cramer, because I want to tell you, I want to talk about the Nevada National Security Site and the NNSA. Thank you for leading into my question. Thank you both for being here, for your service, of course, your service here in the Senate and continuing service to our Nation. And so, we know, the NNSA, it tears—it deters our near-peer adversaries. That is what they do.

And so, as your report makes clear, ensuring the safety and reliability of our existing nuclear stockpile is absolutely necessary to maintaining a credible deterrent posture toward Russia and China.

And I am proud that my home State hosts the Nevada National Security Site, which oversees the Stockpile's Stewardship Program, principally at the U1a facility. This is an underground lab—underground laboratory where scientists conduct those subcritical experiments to verify the safety and reliability of our nuclear stockpile without explosive testing, and yes, it is in good shape.

But U1a is going under—is undergoing major construction. It is going to soon host the most capable weapons radiographic system in the world. But however, as I have raised earlier in this Committee, the NNSA currently faces significant infrastructure delays, especially at the Nevada test site—we still call it the Nevada test site.

So, Senator Kyl and Ms. Creedon, how will upgrade to the Stockpile Stewardship Program, like the U1a facility, defend the Nation, enhance our deterrence? And can you both speak to the importance of continuing to make these investments that support Stockpile Stewardship, to be sure that our stockpile is safe, secure, and reliable?

So, whoever likes to go first.

Ms. CREEDON. So, thank you very much, Senator Rosen. The old test site—

Senator ROSEN. They call—in Nevada, we call it the test site.

Ms. CREEDON. It is one of the most important locations in the NNSA complex, and the new ECSC, the accelerator, everything that you mentioned that is now going on under construction in U1a, it is part of this broader scientific, experimental, computational, and testing capabilities that allow not only the NNSA to do the modernization programs that are underway now, but also it lays the foundation for all the future work, for all the future flexibility and capacity that NNSA is going to have to be prepared to deliver to the Defense Department.

It also is extremely important on the nonproliferation side. There is a huge amount of work going on in Nevada on nonproliferation that is—we can talk about more later, but it is—

Senator ROSEN. Thank you.

Ms. CREEDON.—it is really essential, and it addresses some of the problems that have been raised here today.

Senator ROSEN. I have been to the site many times, and it is quite impressive. Senator.

Mr. KYL. Thank you, Mr. Chairman, Senator Rosen. I would just second what Madelyn said. I don't think—well, I know that most of my constituents wouldn't have any idea of the complexity and the incredible importance of work done at sites such as your Nevada site.

The importance of the Stockpile Stewardship Program specifically is that it is the only thing that we have going that enables us to continue to have confidence in the nuclear weapons that we already have built. We don't do any underground testing anymore. It is our own choice.

We have a moratorium on that. And as a result, we need a program that will enable the laboratories to certify eventually to the President that our nuclear weapons will work, and that they are safe, and that they are secure. And the Stockpile Stewardship is program—is what does that.

And these experiments that are done at your facility are some of the most incredible experiments that our U.S. Government does. It also has the important element of teaching young engineers and physicists how these things work so that we will have a new generation of capable scientists to do the work that, as Madelyn says, is going to be necessary in the future.

Senator ROSEN. Yes, it is very important. And I am worried about supply chain issues affecting our modernization programs and numerous subcontractors. We know they are going out of business and the nuclear industrial base really faces significant cascading supply chain challenges.

And so, I know I just have a few seconds left or I can take it off the record. The nuclear industrial base has become more consolidated. NNSA, we have identified some key choke points along the supply chains of critical stockpile modernization programs, and so I would like to hear from you if—how you are addressing these vulnerabilities. And if you want to later answer—

Chairman REED. Thank you, Senator Rosen.

Senator ROSEN.—we will take it off—if you send it to us, that would be great. Thank you.

Chairman REED. Thank you, Senator Rosen. Senator Tuberville, please.

Senator TUBERVILLE. Thank, Mr. Chairman. Thank you for this report. Probably the most interesting thing I have read since I have been here in 3 years and thank you for your hard work. That had to be a mountain of work for both of you and a lot of other people putting this together.

In your report, you mentioned that the current plan to modernize and expand our air fueling tankers is inadequate. Could you expand on that, both of you, say a few words about that.

Ms. CREEDON. Yes, sir. I mean, if one—if we accomplished one thing, it was to bring together a lot of things that are known, but we brought them all together and put them forward in one package.

So, I think the report does a lot to be very clear eyed about what our threats are and what our requirements are. And tankers are one of the shortfalls that have existed for quite a while.

And the tankers are essential for both theaters. They are essential for the conventional capability. They are essential for the nuclear capability, and we just need more of them.

Senator TUBERVILLE. Especially for Indo-Pacific. You know, we need tankers that are going to be able to haul longer and carry more fuel.

And unfortunately, we have got a contract after it. We can't get a decent refueler finished. And it seems like it takes forever, but that is what happens up here. We give out contracts and we can't fulfill them.

Ms. CREEDON. And part of it also is understanding how the tankers fit in our integrated defense planning. And that is also very important because we have to look at how we do this integrated planning, not only within the U.S., but also with our allies, and how they bring these capabilities to the fight as well.

Senator TUBERVILLE. Yes. And it is interesting you talk about workforce. We, in Alabama, we build submarines, ships, airplanes, missiles, you name it, we build it, and we are having to go out and hire people from McDonald's to train them themselves.

I mean, and that is how bad our education system has gotten. I did it 40 years, so I have seen the decline in our education system, and a lot of these universities teach degrees that they should never even think about teaching. We should teach people out of work and how to make a living, all those things.

And it really concerns me because when you are having to go to McDonald's and Wal-Mart to hire people to teach them the weld and teach them, you know, electric work and plumbing—and this is our National Security.

And then you talk about the crisis with supply chain. I was in Huntsville last week at some of our missile motor factories and huge problem, huge problem of getting parts. And we think we are going to fight a war.

I mean, it is ridiculous. And I hope the White House gets this—I am sure they read this, right? I am just asking being new up here. They do read this report that you give them? But I keep hearing that our No. 1 threat is not nuclear, which we all could be wiped out, it is climate change. Listen, I am all for climate.

Don't get me wrong. I am all for climate. But we are printing hundreds of thousands of dollars a minute up here. Our dollar is devaluating, and we are thinking about building a nuclear—a new nuclear arsenal, right. And again, I am an educator, but you got to find somewhere to find this money, and we are going to find it somewhere.

We spent over a \$1 trillion, maybe \$2 trillion since I have been here on climate change. You know, you can build pretty good nuclear arsenal with \$2 trillion, I would think. So, we got to get our priorities right.

And it just absolutely amazes me how we don't look at priorities. And again, I am all for climate, and I want my kids and grandkids to have an opportunity to grow up in what we all grew up in, but—again, I thank you. I don't have—most of them asked my questions.

I want to thank you for doing this and putting this all together. It is amazing. And as you know, it will change in 10 years.

You know, all this will change. It changes every day, but again, thank you for your hard work and dedication, and hopefully we can wake up and smell the roses here and get to competing, which we are not competing very well right now. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Tuberville. Senator Warren, please.

Senator WARREN. Thank you, Mr. Chairman. You know, we are confronting an incredibly challenging security environment which requires us to make tough choices and set priorities.

One of the elements of our National Security that I think we often take for granted is the power we gain from military alliances around the world. I appreciate and agree with the part of your report that said that our partnerships, "further the ability of free nations of the world to speak and act together in a united front against threats."

But let's be honest, the main thrust of this report is advocating for a nuclear arms race. You recommend we "fund an overhaul and expansion" of our nuclear weapons industrial base to buy more weapons than we are currently planning, as well as starting risky new programs.

So, let me start, Ms. Creedon, did the Commission develop any cost estimates for implementing its recommendations?

Ms. CREEDON. We did not, Senator.

Senator WARREN. So, we just don't have a cost estimate for this, because I didn't see one in the report. So, would it be safe to guess that we are talking about tens of billions of dollars, if not more?

Ms. CREEDON. So, we are certainly talking about more money, but I—one of the—

Senator WARREN. Yes, I get more money. I am saying, is it like tens of billions more or more than that?

Ms. CREEDON. But the thing that is important is that we are—in long term—

Senator WARREN. Yes. I am trying to get—I understand that. And what I am trying to get at is how much it costs, because if we are going to prioritize, we need to know how much money we are spending. So, is your answer yes, that we could expect it to cost more than tens of billions of dollars?

Ms. CREEDON. Of course, it could.

Senator WARREN. It could.

Ms. CREEDON. But it also depends on what those decisions are over the long term.

Senator WARREN. And that is why we are trying to evaluate it. And if we had cost estimates, it might be helpful. You know, the Congressional Budget Office estimates that our current nuclear weapons spending plans will already cost an average, the current plans, of \$75 billion a year.

And look, I am willing to spend what it takes to keep America safe, but I am certainly not comfortable with a blank check for programs that already have a history of gross mismanagement. One of the programs the Commission endorses fully funding is nuclear pit production, which are these radioactive cores for nuclear weapons.

The National Nuclear Security Administration doesn't know how much it is going to cost and won't have a reliable plan for the program for at least another year. So here we are, spending billions of dollars without even a plan in place.

Did the Commission recommend any areas for spending cuts to help pay for the recommendations that you advanced?

Ms. CREEDON. So, Senator, we took the—so we took the approach that we have a long term problem and we laid out recommendations for how to address this long term problem. We did not pick specific winners or losers, but we recommended that the Department do the analysis to determine what those are.

Senator WARREN. Winners and losers—I am sorry, the winners are, let's just spend all the money you want to spend. And the question I had was, did you recommend any areas for spending cuts to help pay for the recommendations you are advancing?

Ms. CREEDON. So, we recommended looking at how we do procurement. So, it may not be necessarily a cut—

Senator WARREN. So, did you recommend cuts?

Ms. CREEDON. It may not be—but it is how to do this smarter, so we don't spend as much money—we don't unnecessarily spend money. That is where we also need to focus is, is how we do this better and how we do smarter.

Senator WARREN. Well, but we start this with priorities. Forgive me, but we can't prioritize if we don't know how much or even an estimate of how much things are going to cost. You know, back in 2018, the National Defense Strategy Commission was at least honest about how they were going to pay for it.

They said they would cut the social safety net of America—that American workers paid into and deserve to receive. And it is no secret that I support the Biden Administration's goal of reducing the role of nuclear weapons in our defense strategy.

It is a serious failure of this report that it does not reckon with the serious costs and dangers of accelerating a nuclear arms race. As we continue to debate our nuclear posture, I think it is important to understand also how North Korea and other rogue regimes are paying for their nuclear programs.

Experts estimate that half of North Korea's missile program is paid for through crypto crime. Your report rightly flags this problem, noting that North Korea stole about \$1.7 billion in 2022 alone and used that to fund more than half of its missile program.

I just note that I have a bill with Senator Marshall, Senator Manchin, Senator Graham, and a dozen more Senators to crack down on the use of crypto in sanctions evasions. If we want to stop our enemies, then we need to give regulators the tools they need to crack down on how they are financed. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Warren. Senator Mullin, please.

Senator MULLIN. Thank you, Mr. Chairman. Thank you for being here. I, why—I had to take a little bit of a disagreement with Senator Warren on drawing down our nuclear systems, our nuclear weapons right now.

I don't think this is the time that we should be doing this. I think it is extremely volatile time we live in right now. We have—

I would say, it is probably one of the most volatile times we have been living in since the 1940's, and I think we need to recognize. Appeasement does not speak to our enemies.

Power speaks to our enemies. And I think your report is trying to get to that. However, she did mention the fact about the Administration. Has the Administration gave you any feedback on your report?

Ms. CREEDON. Not yet, Senator. We just released it last week, so—and it is a long report with 81 recommendations, so.

Senator MULLIN. I understand it is a long report, I mean but we have had the opportunity through it here.

Ms. CREEDON. But we do not yet, no. No, we do not yet.

Senator MULLIN. Are you planning on briefing the Administration, the White House, on this?

Ms. CREEDON. We had done, just like we had done prior to the release, a heads up briefing for this Committee. We did a similar briefing for the executive branch. So, we did that shortly before the release of the report. But we don't—we have not gotten any feedback from them.

Senator MULLIN. Have they given you any instructions on what they were looking for in the report while you guys were going through it?

Ms. CREEDON. No, sir.

Senator MULLIN. What about the—what about the Pentagon?

Ms. CREEDON. No. No. In fact, after we got started and got rolling, it took a while, we actually had extraordinary cooperation from all of our briefers across the executive branch in terms of what their issues were, what their concerns were, what their worries were, as well as from the intelligence community was very straightforward on the threats.

Senator MULLIN. Has the Pentagon looked at your report yet?

Ms. CREEDON. They have it for sure.

Senator MULLIN. Have they gave—have you guys met with them yet on this?

Ms. CREEDON. We do not, as far as I know.

Senator MULLIN. Is there a plan to?

Ms. CREEDON. A plan to?

Senator MULLIN. Meet with them.

Ms. CREEDON. Oh, certainly, if they requested, of course.

Senator MULLIN. Well, again, the reason why I get to this is because you all did a tremendous amount of work here, but a report is just a piece of paper.

Without action, it means nothing. And while we can sit here and talk about it all day long underneath Chairman Reed, which I appreciate him having these hearings, we are only one leg, really, of a three legged stool when it comes to this.

We—while we could approve it and say, yes, this is what we need to do, if we don't have the backing of the Administration, which will probably go along with the Pentagon, or the Pentagon go along with them, it doesn't really go anywhere. Would you agree that?

Ms. CREEDON. So, our expectation, of course, is that as this report is more widely disseminated, that we discuss it. This hearing is a great example of how we need to get this message out, how we need to talk to people.

As I said, we had done a pre-brief with the Nuclear Weapons Council prior to its release. So, as they—there is a lot in here that they are going to have to make decisions about.

Senator MULLIN. There is a lot here. But if they don't—you know, if they don't want you to come brief them, meaning from the executive branch, President Biden, to the Pentagon, you can't really force yourself on them. They have got to either take it and receive it.

And I would sure like to know and get feedback from you if they do reach out. I would like to know if when that is set up, so maybe we can have a followup discussion and try pairing what they are thinking with what we can get accomplished here.

Switching gears really quick, it was—a tanker was already brought up, refueling tanker. Obviously, Tinker Air Force Base in Oklahoma City, that is one of our missions there. Plus, the bombers.

Transition to the B-21s now. There is some concerns on the delivery time on that and the possibility of losing the capability of the mission while we are phasing out one and bringing in another. Senator, your thought on that?

Mr. KYL. Yes, Mr. Chairman, Senator, that is exactly one of the things that I alluded to in my opening statement is this deterrent gap, which is caused by the fact that we have worked ourselves into a situation where we have got a just in time delivery of the modernized system to replace the legacy system, and it may not be just in time.

Senator MULLIN. That is right.

Mr. KYL. And so, we make some recommendations—and this, by the way, is pretty much across the board. It is not only for our nuclear weapons, but it is also for the delivery system.

One recommendation, for example, just to illustrate your point. We have all talked about the submarine—the importance of the submarine industrial base, and the fact that it is going to be a real challenge to build these new Columbia class submarines and get them deployed in time.

One possible workaround there is being studied by the Navy to take some of the more recent Ohio class submarines, the newer ones, and see if we can extend their life just a little bit. You all will need to make that decision maybe this next year and it will require some money to extend their life, but that may be a workaround—by the way, in digression, we were told more than once that “we are out of workarounds.”

So, there aren't many work arounds left, but at least one way to deal with the delays in the Columbia class deliveries is to extend a few of the Ohio class submarines life a little bit, and that will require you to specifically authorize that so the appropriators can appropriate the money for it.

Senator MULLIN. Thank you. Thank you, guys. Thank you, Chairman.

Chairman REED. Thank you, Senator Mullin. Senator Budd, please.

Senator BUDD. Thank you, Mr. Chairman. And good morning, Ms. Creedon, Senator Kyl. It is good to see you both. And again, thank you for your work on America's strategic posture, the report.

I want to read briefly from the Commission's finding in the section that was titled, Threat Picture Through 2027 to 2035.

"The Commission concludes that the U.S. and allied conventional military advantages in Asia are decreasing. At the same time, the potential for two simultaneous theater conflicts is increasing."

That is a stark statement, but it is one that bears repeating. So put slightly differently, as China's military capability is getting stronger, without significant change in investment, America's strategic advantages and ability to deter adversaries worldwide is weakening.

Just last week I visited U.S. military installations and commands out in the—the Indo-Pacific command, including Guam, and it is clear that our infrastructure and industry lag this new strategic environment.

But decline is a choice, and we have reached an inflection point. Decisions that we take now, and we make now will determine whether the next century is one of American security and prosperity or if it is one of decline.

So, Ms. Creedon and Senator Kyl, I am going to ask the same question later on the classified hearing, but what can you tell us in this setting, what were your most surprising findings on the threat environment, particularly with regard to China?

Ms. CREEDON. So, in a nutshell, it is the rapidity with which China is growing all of its capabilities, and how we as a nation have missed some of those signals about how fast that they really are growing and how extensive their growth is, and how capable some of their systems really are.

Mr. KYL. Thank you, Mr. Chairman, Senator. I agree, they are moving so fast. I think it surprised us all. There is one other thing we should bear in mind, and that is that the things that they are producing are very technical, very high quality.

They are ahead of us, for example, in some of the space issues and with regard to some of these very, very fast hypersonic type weapons. So, it is not just the speed with which they have done this, but they are producing very challenging weapons.

Senator BUDD. Thank you both. You know, recently someone told me that we are in a pre-war environment, but still proceeding on a peacetime footing. Very similar, my colleagues have alluded to this, very similar to pre-World War II.

What I think that means in part through, you know, with what the Commission concluded is a need to commit to a whole of Government approach to be more efficient and effective. Would you both agree?

Ms. CREEDON. Absolutely. I think this is one of the things that really needs to be well thought out, is how we as a nation use all of our tools for deterrence, because at the end of the day, this is what this is all about. It is deterrence. It is to prevent that war.

And we have a lot of tools. We have a lot of capability. We just have to figure out a way to do it in an integrated fashion. And that was one of our recommendations. We spent a lot of time even thinking about how you incorporate sanctions into a strategy.

It is—the diplomatic effects into a strategy. So, it is across the board, how do we think about being more effective as a whole of Government.

Mr. KYL. Thank you, Mr. Chairman, Senator. That is exactly the example I was going to give. Whole of Government means, for example, that the Department of Treasury and the Department of Commerce have to help the Department of Defense in identifying places where we can stop sending American technology to China for its use in developing new technologies to support their military.

Senator BUDD. So, Senator Kyl, assuming we remain in a resource constrained environment in the short term, we have had massive deficits leading to massive debt, so with that environment that is resource constrained, what do you think will be the highest payoff investments we can make now to preserve options for ourselves into the future?

Mr. KYL. Well, of course, this is something that I have personally been involved in for a long time, but I believe our Commission believes so strongly in the recommendations that we have made here that they would probably support this answer.

Given the fact that deterring nuclear war has to be the top priority for the U.S. Government and given the fact that deterring nuclear conflict starts with having a conventional and nuclear capability or posture sufficient to do that, it has to be the No. 1 priority for the Government, including in terms of allocating resources.

So therefore, in a time of constrained budgets, if you consider this to be the most important thing that we can do, you have got to act accordingly and allocate the resources necessary to accomplish the job.

Senator BUDD. Thank you both. Yes, if you allow.

Ms. CREEDON. Sorry, if you allow just a very specific. I think where we have to put the priority investment, at least in the early phases, is we have to work on the infrastructure across the board.

And by that I also mean people, because if we don't have our people, if we don't have a skilled workforce, if we don't have the infrastructure, the supply chain to produce what we need in the future, it is obvious we won't have what we need in the future.

Senator BUDD. Thank you both. Chairman.

Chairman REED. Thank you, Senator Budd. Senator Schmitt, please.

Senator SCHMITT. Thank you, Mr. Chairman. Chair Creedon, Vice Chair Kyl, thank you for the work that you put into this. Our nuclear arsenal is perhaps the most important tool that we have to ensure peace through strength. Your report reflects, I think, the urgent need for the United States and modernize our nuclear arsenal now.

As China and Russia continue to produce more and more nuclear weapons, we are kind of spectators in this race in many ways, and for decades we have underinvested in our arsenal as China grows in strength with the rapidity that you mentioned. And I am from Missouri, and the law school, same law school.

And Missouri plays—this is, we are part of that infrastructure, right, with Whiteman Air Force Base and the B-2 stealth bomber. We also have the NNSA's Kansas City National Campus, which plays a very important role in all of this. And I got to go there last, or this past August, and their mission is critical.

And so, I think your report talks about a lot of these things that are related to our State, but, of course, in our national interest. I

did want to ask, maybe for Senator Kyl, I think there is a view among many in across the country that, as it relates to nuclear weapons, I am sure you have encountered this, that we have enough to blow up the world multiple times over, so do our adversaries, so why—how would you describe this if you were going back to Arizona and talking to constituents about this, of what makes this modernization, beyond just we have got to do—the competition aspect of it. What makes this modernization so important for deterrence? Why is it relevant when I think a lot of people believe we have got enough bombs, right, what is the point?

Mr. KYL. Mr. Chairman, Senator Schmitt, that is—I mean, this is a teaching moment, and it starts with bursting a lot of bubbles, explaining to folks that what they may think is fact is not true. Start with we have got all the nukes we need.

We can blow up the world many times over. Well, actually, under the START treaty, we limited the number of strategic nuclear weapons that we have deployed. And so, while we may have some other assets in storage that we could potentially bring to use here, we have deployed only what we think is necessary at that time to deter Russia.

Second, I would begin by explaining, and we have charts in the report that show this, the age of these weapons and just ask them, if you had a car that was designed in the 60's or 70's and you have got more miles on it now than it was supposed to have, you know, in 1980, and you are still driving it, you think you might have a problem with maintaining it?

You think maybe you would have to get a new one, or it would cost a lot to maintain? These nuclear weapons are the most sophisticated things that man has ever invented, and yet we have gone on a vacation, in effect, in the modernization of our nuclear weapons, because we didn't think we really had to worry about our future.

We thought that for about 20 years and then woke up 1 day and realized that others had started an arms race. Russia is almost done with its modernization. China is somewhere in the neighborhood of halfway through it, military buildup, and we have just barely get—gotten out of the starting blocks.

Senator SCHMITT. What does that—I just want—what does that modernization mean? When you say modernization, what does that mean as far as effectiveness and—

Mr. KYL. Right. Two things. First of all, the nuclear warheads were designed a long time ago. They were only designed to last about 10 years and they are like 30 or 40 years old now. They need work. Right now, we are not replacing them. We are just, this is a shorthand term, refurbishing them.

Second, the delivery vehicles. How we deliver these nuclear weapons, either through a bomber, or a submarine with missiles, or our missile forces in silos. All of those likewise were designed and developed decades ago. And if you look at the life of the submarines, for example, they only have a certain lifetime. Sea is a very—is not a benign environment for metal.

And, you know, those things deteriorate rapidly. And the missiles themselves are now beyond their life. So, any homeowner knows

that you can't keep running the same dishwasher or washing machine forever.

Senator SCHMITT. Right.

Chairman REED. Eventually, it needs replacing. And these very sophisticated weapons are in that same situation. So, you explain to folks, these are all really old. The other side is building up theirs.

They have hot production lines producing new ones. We are trying to keep our old ones afloat for a while longer, and that is going to cost some money.

Senator SCHMITT. Mr. Chairman, would you indulge me? Just a quick question. Thank you, Mr. Chairman. Ms. Creedon, one thing related to the—the Kansas City campus does get mentioned, you know, mentioned in the report.

Can you just briefly add a little bit more color to the assessment, the need for additional square footage there and why that is relevant for the non-nuclear components?

Ms. CREEDON. So obviously, Kansas City is where the bulk of the non-nuclear components are made. And when the new Kansas City plant was built, which it is one of the newest facilities in the complex and it is an excellent facility, it was built—it wasn't—it was sized on the size of the stockpile we thought when the thing was designed. As we know now, we need larger facilities.

The NNSA has done a good job in terms of going out and leasing additional facilities to provide some of this additional capacity. And I know that they are developing a long range plan.

You know, I obviously don't know all the specifics, and but this is again, this is part of this infrastructure problem that we have to think about, that we have to invest in now is the infrastructure and Kansas City is a clear and important part of it.

Senator SCHMITT. Thank you both. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Schmitt. Thank you both for your compelling testimony. At this point, I will adjourn the open session. We will reconvene at approximately 11:50 a.m.—on or about 11:50 a.m. in SVC-217. Thank you all very much.

[Whereupon, at 11:39 a.m., the Committee adjourned.]