



# U.S. Strategic Command and U.S. Space Command HASC-SF Testimony

SPEECH | April 22, 2021

**COOPER, JIM (D-TENN) Chairman:** (IN PROGRESS) Thanks to each one of you for being here today. We look forward to hearing from the distinguished witnesses, Ms. Melissa Dalton, acting assistant secretary of defense for Strategy, Plans and Capabilities; Adm. Charles Richard, commander of U.S. Strategic Command; and Gen. James Dickinson, commander of the U.S. Space Command.

In view of the shortness of time, I will dispense with an opening statement, but let me just record my worry about personnel impacts of moving the headquarters to Huntsville, Alabama, and the fact that some of our colleagues in Congress don't feel the urgency that I feel to recapitalize all three legs of our strategic triad. Let me turn to the Ranking Member, Mr. Turner.

**TURNER:** I'm just going to make a few comments. Thank you, Mr. Chairman, for your statement concerning the triad. I know that our witnesses before us today will be echoing the same sentiment. I—as we enter into, moving forward with the NDAA. It is going to be incredibly important for your testimony today to help us lay a foundation for the work that's necessary in funding the modernization of our nuclear enterprise.

As you know, we have allowed our nuclear deterrent to atrophy. There are those who would like to pursue stall and delay alternatives. We need your understanding of the importance of the path that we've set in front of us and completing it. I know that you're going to give us some understanding of what we're seeing with our adversaries. China is more than doubling, according to reports, their nuclear inventory. We know that Russia has undertaken the exotics with Skyfall, the nuclear-powered cruise missile the supposed to orbit the earth with Poseidon that's supposed to pop up from the water, and with other hypersonics and other nuclear weapons.

Your testimony of validating the threat, the diminishing nature of our deterrent and the critical aspect of our pursuing modernization is going to be very important today, and I look forward to that testimony. Thank you, Mr. Chairman.

**COOPER:** Thank you, Mr. Turner. I ask unanimous consent that my and your opening statement, written statement, be inserted for the record, and now we will hear from our witnesses. Ms. Dalton.

**DALTON:** Chairman Cooper, Ranking Member Turner and distinguished members of the committee, thank you for the opportunity to testify before you today. May I request permission to submit my written statement for the record and provide brief opening remarks?

**COOPER:** Without objection, so ordered.

**DALTON:** Thank you. Today the United States faces a complex global threat environment characterized by increasingly sophisticated and militarily-capable strategic competitors, destabilizing regional dynamics and accelerating technological changes that pose significant dangers. The U.S. capabilities that we will discuss today offer critical advantages that are essential to deterring adversaries so that we can protect the American people, our homeland and our allies and partners.

As Secretary Austin has stated, nuclear deterrence is the department's highest priority mission. Our nuclear forces remains essential to ensure no adversary believes it can ever employ nuclear weapons for any reason under any circumstances without risking devastating consequences. As the department undergoes a set of strategic reviews that will include its nuclear policy and posture, DoD is committed to maintaining a safe, secure, survivable and effective nuclear deterrent that accounts for the challenges posed by Russia, China, North Korea and Iran.

These reviews will account for adversary nuclear forces and doctrine, possible strategy, posture and policy adjustments, program

execution risk, arms-control opportunities and strategic stability and nuclear risk reduction, all with a goal of maintaining a strong and stable deterrent. Importantly, the views of allies will inform these reviews. Secretary Austin has stated that we must sustain and modernize the nuclear triad to maintain credible deterrence in the face of today's threats. The president's FY '22 discretionary request supports ongoing nuclear modernization programs, while ensuring that these efforts are sustainable.

As missile technology matures and proliferates, the threat to the U.S., our allies, partners and deployed forces is steadily growing, both from intercontinental and regional missile developments in North Korea, Iran, China and Russia. We will review our missile-defense policies, strategies and capabilities to ensure they align with our broader National Defense Strategy to protect the nation and our interests abroad from missile threats.

Recently, the department initiated the development of the next generation interceptor, which will improve the overall reliability and performance of the ground-based midcourse defense system. The department will continue to bring a more integrated approach to air and missile defense that not only assists with the defense of our forces and allies against multiple types of ballistic missiles, but also addresses the evolving spectrum of airborne and missile threats that seek to inhibit U.S. operations. It will be critical to invest in the right missile-defense technologies in a cost effective and responsible manner to retain our regional and strategic edge long into the future.

While space-based capabilities are an inextricable component of the daily workings of modern life, space is also an arena of strategic competition. The United States remains the world's leader in space, but we must recognize the growing role that space plays in enabling China's increasingly assertive challenges to the international system and in Russia's disruptive role on the world stage. The department is grateful for this committee's strong bipartisan support for initiating and sustaining important organizational reforms and ensuring we have the necessary means to realize our nation's strategic goals in space.

For the United States, hypersonic strike systems are an emerging conventional capability that is central to the broader goal of modernizing the joint force to ensure it can deter, and if necessary, defeat competitors in a high-end conflict. China and Russia are making concerted efforts to develop capabilities that are increasingly eroding traditional U.S. war fighting and military technological advantages, including hypersonic weapons systems.

Such systems, including those that are nuclear armed, are top national priority efforts for both states. In response, the department has prioritized hypersonic strike weapons, all of which are strictly nonnuclear, to address these challenges. These capabilities offer operational advantages by allowing us the ability to destroy critical enemy infrastructure and anti-access systems, enhancing the U.S. capability to create strategic effects without crossing the nuclear threshold. We are insuring proper oversight as the department develops the concept of operations that will guide this capabilities use. The department is committed to continue transparency and dialogue with Congress on strategic stability and policy questions relating to hypersonic strike systems. Thank you again for the opportunity to testify. I look forward to your questions.

**COOPER:** Thank you. Before we hear from Adm. Richard, I'm required to read this boilerplate about web access because we have several members attending remotely. Members who are joining remotely must be visible on screen for the purposes of identity verification, establishing and maintaining the quorum, participating in the proceeding and voting. Those members must continue to use the software platform's video function while in attendance, unless they experience connectivity issues or other technical problems that render them unable to participate on camera.

If a member experiences technical difficulties, they should contact the committee staff for assistance. Video of members' participation will be broadcast in the room and via the television internet feeds. Members participating remotely must seek recognition verbally, and they are asked to mute their microphones when they are not speaking. Members who are participating remotely are reminded to keep their software platform's video function on the entire time they are attending the proceeding.

Members may leave and rejoin the proceeding. If members depart for a short while for reasons other than joining a different proceeding, they should leave the video function on. If members will be absent for a significant period or depart to join a different proceeding, they should exit the software platform entirely and then rejoin it if they return. Members may use the software platform's chat feature to communicate with staff regarding technical or logistical support issues only.

Finally, I've designated a committee staff member to, if necessary, mute unrecognized members' microphones to cancel any inadvertent background noise that may disrupt the proceeding. Sorry for that boilerplate. Now Adm. Richard.

**RICHARD:** Chairman Cooper, Ranking Member Turner, distinguished committee members, good afternoon. I'm pleased to testify with Gen. Dickinson and Ms. Dalton, whose leadership and strategic insights benefit my command. I thank the president, Secretary of Defense Austin, Chairman of the Joint Chiefs of Staff [Gen.] Milley for their leadership and their support to the mission of strategic deterrence. I assure you the command is committed to the priorities set forth by the secretary to defend the nation, care for our people and succeed through teamwork. And I remind the command it is our diversity, resilience and professionalism that sets us apart and makes us even stronger. It's a privilege to represent them here today. I thank the

committee for its enduring support to our national defense and active engagement and interest in the command's missions.

Strategic deterrence enables every U.S. military operation around the world. Every operational plan and every other capability we possess rests on an assumption that strategic deterrence, and in particular nuclear deterrence, is holding. If it fails, nothing else in the department works as planned. I submit as a nation until recently we have not considered the implications of engaging in competition through crisis and possible direct armed conflict with a nuclear capable adversary in nearly three decades.

For the first time in our nation's history we are about to face two nuclear capable strategic peer adversaries at the same time, both of whom must be deterred differently. And in that context I submit China must no longer be considered a lesser included case in this context. The remarkable expansion of nuclear and strategic capabilities are evidence of their drive to be a nuclear peer by the end of the decade. This is the strategic complement to the conventional capability growth reported by INDOPACOM. They are at some kind of an inflection point and are rapidly expanding their strategic capabilities. They are well ahead of the pace to double their stockpile by the end of the decade, and the size of a nation's stockpile is a very crude measure of its strategic capabilities.

In order to fully assess the China threat, it is necessary to consider the capability, range and accuracy of the associated delivery systems, their command and control, readiness, posture, doctrine, training. They are rapidly expanding road mobile intercontinental ballistic missile capability, rapidly expanding solid fuel, silo-based intercontinental ballistic missiles, deploying a strategic bomber. And they now possess six second-generation Jin-class ballistic missile submarines, making them capable of continuous at sea deterrent patrols. They're developing dedicated nuclear command and control capability to include launch under warning and launch under attack.

By these measures, China is capable of executing any plausible nuclear employment strategy regionally now and soon will be able to do so at intercontinental ranges. For China, it is important to look at what they do, not what they say, and where they are going, not where they are. I have no choice but to view China as a significant strategic nuclear threat and share Secretary Austin's assessment that China is the pacing threat for the nation and DoD at large.

Russia, however, remains the pacing strategic nuclear threat. They have aggressively engaged in advanced conventional and nuclear capability development and modernization efforts and are roughly 80 percent complete, while we are at zero. It is easier to describe what they're not modernizing, pretty much nothing, than what they are, which is pretty much everything, including several never before seen capabilities and several thousand non-New START Treaty accountable systems. Nuclear-armed ICBM hypersonic glide vehicle, nuclear-powered, nuclear-armed underwater vehicle and skyfall nuclear-powered and nuclear-armed cruise missile are examples of asymmetric strategies and weapons designed to offset conventional inferiority.

We can no longer assume the risk of a strategic deterrence failure in crisis or conflict will always remain low. The days of power projection in a permissive environment without regard for a possible nuclear response are over. And bottom line is, we don't have margin. I'll be happy to answer more questions about that when we get into this in the rest of the testimony. We simply cannot continue to indefinitely life extend Cold War leftover systems, platforms, NC3, and successfully carry out our national strategy.

Of particular concern is the aging nuclear weapons stockpile and supporting infrastructure, and we could reach a point where no amount of money will adequately mitigate the operational risk the nation will face due to infrastructure and human talent capability losses. Ladies and gentlemen, I thank you for the opportunity to be here today, and I look forward to your questions.

**COOPER:** Thank you, Admiral. Now we will hear from Gen. Dickinson.

**DICKINSON:** Good afternoon, ladies and gentlemen. Thank you, Chairman Cooper, Ranking Member Turner and members of the House Armed Services Committee's Subcommittee on Strategic Forces, for the chance to speak with you today. I'm honored today to join Adm. Richard and Ms. Dalton for this afternoon's discussion.

In describing the accomplishment of our nation's newest combatant command, I am pleased that nearly 18,000 military civilian and contractor personnel supporting United States Space Command. In United Space Command, our power is our people. Having just finished the command celebration of women's history month, we proudly recognize our many female war fighters. Yesterday, in my comments to the Senate Armed Services Committee, I shared examples of three female heroes in my command, and today I would like to take the opportunity to share three additional examples.

Major Kathryn Congdon, who recently transferred into the brand-new U.S. Space Force, started as an ICBM crewmember, worked next to missile warning at the 6th Space Warning Squadron and just led our planning efforts for the Global Lightning 2021 exercise. Maj. Elise Fitch Freeburg an Army Air Defense Artillery Officer, is currently working on one of our most critically assigned missions, global sensor management, in our operations directorate.

And a third, a young Air Force Staff Sgt. Keira Koestner (PH) brings personal expertise to a command that is still building its war fighting force and is currently providing outstanding support in the front office of my chief of staff. And there are countless others,

but those are three that I'd like to mention today.

Our diverse force will continue balancing combat readiness and preparing for the future. We will provide our people a working environment and culture that allows them to thrive while reaching their full potential. Our ideals reflect those of our oath to the Constitution of the United States, and we remain committed to providing for the common defense, promoting the general welfare and securing the blessings of liberty for ourselves and our posterity. Today, I will offer you some insight into our plans for the future, which are aligned with the president's new interim national security strategic guidance.

When I took command of U.S. Space Command last August, we were still filling out the structures of a new war fighting combatant command for space. As I outlined in my written statement, we've made tremendous progress since then to include further development of our two functional component commands and the establishment of all of our service component commands. These developments have significantly advanced space war fighting capability, all while the joint force—all while supporting the joint force with exquisite space capabilities.

While largely focused from the geosynchronous build to the last tactical mile on earth, we are expanding our focus to keep pace with our nation's push into the Cis-lunar region, our renewed activity on the moon, and our future exploration of Mars and beyond. China's space enterprise continues to mature rapidly, presenting a pacing challenge. They invest heavily in space with more than 400 satellites on orbit today, and based on their current launch rate, could have as many as 1000 on orbit by the end of the decade. China is building military space capabilities rapidly, including sensing and communication systems and numerous anti-satellite weapons.

All the while, China continues to maintain their public stance against the weaponization of space. Similarly concerning, Russia's published military doctrine calls for employment of weapons to hold U.S. and allied space assets at risk. For example, similar to the Russian space-based weapons test in 2017, Russia again conducted a test of a space-based antisatellite weapon. Additionally, the December 2020 test of a direct ascent anti-satellite weapon demonstrates that even as Russia aims to restrict the capabilities of the United States, they clearly have no intention of halting their own ground-based and on-orbit counter-space weapons systems.

Currently, Russia has about 200 satellites on orbit and could double that by 2030. In addition to this activity on the part of our competitors, we are observing exponential growth in the commercialization of space. We currently track a challenging 32,000 objects in space. Nearly 7000 of those objects are active or retired satellite payloads. Among the roughly 3500 active satellites, the three largest single constellations belong to commercial companies. SpaceX's broadband internet constellation, Planet Labs' Earth imaging constellation, and Spire Global's space to cloud data analytics constellation.

Overlaying this new global security landscape on the already complex operating environment of space demands a new level of awareness on our part. Given that the president's international security strategic guidance calls for ensuring the safety, stability and security of outer space activities, U.S. space command is focused on my priority of enhancing existing and developing new space domain awareness capabilities. Space domain awareness gives us insight into activity throughout the space domain, including potential adversary activities. But perhaps more importantly, into the insights and intent of those potential adversaries, as well.

Space domain awareness provides decision quality information to combatant commanders and the national command authority to ensure we can provide viable military options with the appropriate decision space throughout the spectrum of operations, from deterrence to war fighting. In order to most effectively accomplish our assigned missions, U.S. Space Command has assessed our current capabilities and developed the requirements necessary to expand that capability where needed to meet our mission imperatives. We have passed those requirements along to the services and to the Department of Defense.

Our intent is to build the appropriate space operational architecture designed to achieve full operational capability, backed by a team of war fighters who outthink and outmaneuver our competitors. While engaging in a daily competitive environment, our primary goal remains to deter a conflict that begins in or extends into space.

With the help of this committee and all of Congress, we will achieve that ultimate objective and ensure that the United States and our allies will never have a day without space. Thank you, and I look forward to your questions.

**COOPER:** I thank the witnesses. We will now begin member questioning, first in open session, which I hope we can conclude before we have to return to votes. I'm going to withhold my questions for the classified session, and I'm grateful to the witnesses for being able to stay with us until after votes when we can resume and hopefully have an entirely classified session then. I'm going to withhold my questions. Would the ranking member like to ask any?

**TURNER:** Thank you, Mr. Chairman. Mr. Chairman, I want to thank you also for your opening statement of your support for the triad. Adm. Richard, I greatly appreciate your honesty and the fact of which you speak with such passion about the threats to the

United States from our adversaries who have nuclear weapons. You see today that the United States is increasingly putting itself in a disadvantage with its allies—excuse me—with its adversaries that will—that have nuclear capabilities and are increasing those capabilities.

Adm. Richard, unfortunately there are prior administrations and even members of Congress that wanted you to sit here with the angst and anguish that you have. They mistakenly believed that if they placed you and our nuclear assets at risk, that our adversaries would follow, that a great disarmament around the world would occur, but the opposite has happened. And while we have delayed our modernization, Russia has modernized with what is called exotics, new—people are referring to as exotics—new nuclear weapons capabilities, and China is definitely increasing its capabilities, perhaps doubling its weapons.

So what we're seeing is that the premise of if the United States was restrained, that the world would be restrained, is dangerously not true. Adm. Richard, some people are talking in addition to restraining the modernization plans that we have in place, of putting in place a no first use policy.

I believe that you've been quoted before about China's no first use policy, that it has holes enough—big enough you can drive a truck through, or perhaps a mobile ICBM through. Could you please discuss for a minute what your views are of what it would do to the United States and our allies and how it would perhaps not have any effect in deterring our adversaries for the United States to adopt a no first use policy?

**RICHARD:** So, ranking member, first I want to offer that that is fundamentally a policy question. I'm conscious I'm sitting right beside a representative from OSD Policy, and so what I am about to describe you is my best military advice. The comment about—

**TURNER:** That's what I'm looking for—

**RICHARD:** —the comment about driving a truck through the no first use policy, is I simply look at what China's capabilities are and what it enables them to do, and they are very inconsistent with a no first use policy and the implied minimum deterrent strategy that follows. I see a no-first-use policy as degrading the nation's deterrence. It will remove a level of ambiguity that has deterrence value.

That will be mitigated by the fact that the policy likely will not be perceived as credible by the people that it's intended to deter. The nation—this would only apply to about 10 nations or so, right? Most of the rest are already covered by our negative security assurance, and about half the ones I'm describing are allies, right?

So it will be no more credible than our current missile defense policy is, that is also not given a lot of credit, and is no different than the no first use policy the Soviet Union had or the one that North Korea currently has. However, some of our allies might find it credible, and I think it will have a negative effect on extended deterrence and assurance. The nation can have any policy that it would like. These would be the implications and my mission sets.

**TURNER:** Good. Thank you. Ms. Dalton, we have been told, and our staff have been told, that there is a study that has been undertaken in OSD CAPE [OSD Capabilities] and OSD policy concerning the Minuteman III. Minuteman III has been studied before, and it has been determined that it cannot have life extension, not merely just because of cost, but also because of capabilities. Adm. Richard was describing the capabilities that our adversaries are reaching to. So it was not merely just an accounting aspect. It was also a capabilities aspect.

But we have been told that there is a study underway of looking at 200 Minuteman III missiles to maintain the land-based leg of our deterrent while using the remaining missiles to support replacement parts, which of course, again, every time this has been studied it's been ill advised to look at any extension of Minuteman III, not just merely for cost, but also for capabilities. Ms. Dalton, are you aware of this study? Did you approve it, and what is in this study?

**DALTON:** Representative Turner, thank you very much for the question and the opportunity to testify today. I myself have not read that study, but I'm happy to follow up with further views on the matter. More broadly, when it comes to the Minuteman III program, this will certainly be a program that we examine in the course of our upcoming strategic reviews of our nuclear posture. I share Adm. Richard's concern in terms of our aging nuclear arsenal and the fact that, as you just noted, sir, that capability as we get out to the 2030s grows quite worrisome in terms of our ability to deter effectively the range of threat actors that we have discussed here today already.

So as we are looking ahead in our strategic reviews, looking at those threat vectors, looking at what our current capabilities can afford us to address them, we will also, of course, be looking at cost and what is the right balance of the mix of programs that

may be necessary to have a safe, effective and secure nuclear deterrent well into the future. Thank you.

**TURNER:** Okay, so is the study that you just referenced ongoing, or is it something that has just occurred?

**DALTON:** So as most administrations upon taking office will conduct a series of strategic reviews to include the National Defense Strategy review, which we are—

**TURNER:** —Yes, I'm well aware of that. I'm asking you solely about the Minuteman III because this has been exhaustively studied and conclusively determined to be unable to be life extension, and so I'm asking you, are you aware of a different study that has been tasked other than those that have been completed before, and do you have an opinion other than what the studies that have been previously concluded is that we need to move forward with our modernization program and not review, once again, Minuteman III life extension program?

**DALTON:** Representative, thank you for the question. I will have to take the question for the record because I myself have not seen that particular study.

**TURNER:** Okay, if you'd find that there's a new study going on, we would like it. So take this as our formal request for understanding if it's ongoing, send us the scope, okay? And if it's completed, then please provide it to us. With respect to no first use, Adm. Richard was giving I think a great understanding of what our adversaries would view a no first use policy, and certainly the environment that he's operating in where Russia has a use, an escalate to de-escalate. We understand the Nuclear Posture Review will be ongoing. Every administration, as you said, have done one. But do you have an opinion on no first use, Ms. Dalton?

**DALTON:** Representative Turner, thank you for the question. The question of our declaratory policy is a presidential level decision. Our declaratory policy should reflect our strategic objectives, including our extended deterrence commitments to our allies. In the course of both interagency and departmental level strategic reviews that we are about to kick off, we will be assessing the security environment, consulting with our allies to inform these reviews and to make a determination to inform presidential decision-making on what changes, if any, should be made to our current declaratory policy.

**TURNER:** Leonor Tomero reports to you, does she not?

**DALTON:** She does.

**TURNER:** You're familiar with the article to the Japanese Press concerning no first use policy and modernization? Did you approve this?

**DALTON:** Representative Turner, I'm aware of the article, and I have also read the transcript of the interview, which I think more fully captures DASD Tomero's position, which was not well reflected in the article.

**TURNER:** Should she be having a position since you don't have an NPR review completed yet?

**DALTON:** She was reflecting the range of elements and aspects of the review that I just walked through in the context of the interview, and we would be happy to share the transcript of the interview with you.

**TURNER:** Thank you. I just want to thank Adm. Richard one more time because you have been incredibly passionate, both in the House and the Senate, and we really need your help and support as we push forward for modernization. Mr. Chairman, I yield back.

**COOPER:** We have about 20 minutes left before we have to vote. The next four questioners, in order, are Garamendi, Wilson, Carbajal and Lamborn. Mr. Garamendi.

**GARAMENDI:** Mr. Richard—excuse me—Adm. Richard, is it true that in 2019 your predecessor said that the Minuteman III could be life extended one more time in testimony to this committee?

**RICHARD:** I am not aware that he did or did not say that.

**GARAMENDI:** You should be aware, because in fact it was said, that the life that the Minuteman III could be extended one more time. In your argument for the GBSD, you assume that the Minuteman—in the issue of cost, it is assumed by the Pentagon, by your organization, that the Minuteman III would be extended for about—would be life extended and that the—and then following that, the GBSD would go into place and it, too, would be extended. The dates are 2075. That is your argument, is it not? You are assuming that the Minuteman III could be extended as you compare the cost of the two systems to the year 2075?

**RICHARD:** Congressman, we as a department have reported several times to Congress, most recently in a comparison of ground-based strategic deterrent Minuteman III cost estimates back in October '19 that it's not cost-effective to life extend Minuteman. The ultimate authority on whether it can be life extended or not is the secretary of the Air Force as judged by the secretary of defense, and I will defer to that.

**GARAMENDI:** If you'll excuse me, sir, my question was the assumption and the pricing, the cost differential assumed that the Minuteman III could be extended, and in fact your predecessor to this committee in 2019 said that it could be extended one more time.

**RICHARD:** Congressman, from an operational standpoint what I would ask is I do not see an operational reason to even attempt to do that.

**GARAMENDI:** Okay.

**RICHARD:** The Minuteman III is a 1970s era weapon designed to go against Soviet analog defenses. I need a weapon that will work and make it to the target and to expect that in the time frames you're talking about to penetrate potentially advanced Russian and Chinese systems is going to be a challenge.

**GARAMENDI:** Sir, we're talking here about the Minuteman III's viability long-term. Your office delivered to me all of the data about the Minuteman II and the Minuteman III, and in fact the Minuteman II was poured in 1966, was viable in 2014. So with regard to the Minuteman II rocket, after all of those years it was still viable, Minuteman III similarly. There is no evidence in your document that the Minuteman III is not viable as it is today, nor is there any information that indicates that the Minuteman III cannot be extended one more time. If that is wrong, please—

**RICHARD:** Congressman, again, I will defer to the secretary of Defense, but I remind you that it is about the entire weapons system.

**GARAMENDI:** No, sir.

**RICHARD:** It is.

**GARAMENDI:** Sir, if you could, please stick to the debate that I'm having with you, which is the viability of the Minuteman III. The viability of the Minuteman III to be extended one more time is clearly possible by the documents and the testimony of the strategic command. So I want to get that on the record. Now don't go off talking to me about the secretary of defense. We're talking about the viability of the Minuteman III. If I am incorrect and it is not possible, not possible to extend it one more time, then please provide the written documentation to that. That is a fundamental point in the debate that we're having here about the GBSD and the necessity for it.

Secondly, why— or thirdly— why did the Department of Defense and your organization choose the year 2075 rather than the year 2040 or 2050? What's the rationale for that?

**RICHARD:** Congressman, any information provided to you on the life expectancy, cost or any performance on the Minuteman III or other weapon systems would have been the Department of the Air Force, not STRATCOM. That's why I say I'm not the ultimate authority on that. I'm the operational commander. I set the operational requirement. So I will defer to the Air Force to answer those questions. I can just report what I see, and an example is—

**GARAMENDI:** You — you've reported to us that you cannot—are you reporting to us that you cannot extend the life of the Minuteman III? Is that your report?

**RICHARD:** I am reporting that the Air Force has reported it is not cost-effective to life extend the Minuteman III, and from my own personal observation with deference to the U.S. Air Force I'm not sure can be life extended at all. For example, the command-and-control system for that dates back to the '70s. When it started, the word cyber hadn't even been defined. To then expect me to report back—I'm going to get question on in a second, on how I'm maintaining the cyber defenses of a command-and-control system that was designed before the internet, I'm not sure that that's possible.

**GARAMENDI:** Why are you not sure? It's your business to be sure.

**RICHARD:** Exactly. That's why I need a new one.

**GARAMENDI:** And a new one was—when was—

**COOPER:** The gentleman's time has expired.

**GARAMENDI:** Excuse me, but you're talking about the command-and-control system. When was it last updated for the Minuteman III?

**RICHARD:** The Minuteman III system is currently being updated in one aspect right now.

**COOPER:** The gentleman's time has expired. Mr. Wilson who is attending remotely.

**WILSON:** Thank you, Chairman Jim Cooper. And Adm. Richard, I want to thank you for your clarity, determination and professionalism, and on pit production, Adm. Richard, I appreciate that you recently were quoted as saying, quote, I am apprehensive that if we are not careful we will make an irreversible decision that will leave the nation without the capabilities it needs to defend itself and to execute its preferred strategies 5 to 10 years from now, which we can't buy back, end of quote. Given that the NNSA has a 2030 deadline for 80 pits at two sites that falls into that 5 to 10 year timeline, what concerns do you have if the NNSA fails to meet that deadline as it relates to our national security?

**RICHARD:** So congressman, I'll offer that the requirement for 80 pits per year is based on maintaining the age of the pits in the stockpile at an acceptable level. And so if we are unable to meet 80 pits per year, the only alternative is to now start to accept pits that have aged past the point that we have a good analytical basis to have confidence in their operation. We don't have data that says they will work.

We don't have data that says they won't work. But if we don't reach 80 pits per year, we're going to kind of find out the hard way how that works out, and if there's a delay in getting to 80, it will drive the requirement higher in the future in order to bring the overall age of the stockpile back to an analytically sound basis.

**WILSON:** Additionally, in regard to pit production, most U.S. nuclear systems have been extended far beyond their intended cycles and require significant consistent investment over the next two decades to build the expert workforce and necessary facilities to sustain them. Or we risk critical capabilities.

For example, the United States is the only nuclear weapons state that cannot develop currently a plutonium pit for deployment. This committee sought to address this in the bipartisan fiscal year '21 NDAA by directing the modernization of our plutonium pits, including production of 80 pits per year at two sites by 2030, 2030. How does this uncertain funding threaten the capability of our



nuclear deterrent against Russia and China who are building or updating their own triads?

**RICHARD:** Well fundamentally, sir, one thing that NNSA will need to achieve the capabilities that you describe to meet the requirements that DoD is asking for is stable funding. I think it is useful for us to remember that this effort at pit production I think is the fourth or fifth attempt in our nation's history to reestablish it after we terminated pit production back in 1992 at Rocky Flats.

And this is an example where if we don't recapitalize the infrastructure, we will lose a key piece of what it means, what you have to have to be a nuclear weapons states, and we will not be able to buy it back at unlimited cost for a large number of years.

**WILSON:** And thank you for restating that history. And Secretary Dalton, the 2018–2018 Nuclear Posture Review emphasizes the need to produce no fewer than 80 plutonium pits by 2030 to sustain our current warhead supply. The NNSA has determined a two-sided approach, at least 50 percent at the Savannah River site and at least 30 percent at Los Alamos is the best way to provide flexibility and redundancy toward such a vital modernization effort. Is that your view that the recommendations of the 2018 NPR are still valid?

**DALTON:** Thank you, representative, for the question. For all the reasons that Adm. Richard laid out, this is a critical issue for us to examine in our upcoming strategic reviews. So we will be taking that into account over the next few months, and happy to come back and brief you as we have findings from the reviews.

**WILSON:** And again, thank you for your service as a UVA graduate, and I yield back.

**COOPER:** Mr. Carabajal.

**CARBAJAL:** Thank you, Mr. Chair. Gen. Dickinson, I agree with your assessment that the United States commercial space growth aids our mitigation efforts against threats. In a report to Congress on space launch infrastructure, it is noted that the ranges annually compete for facility sustainment, restoration and modernization funds to sustain, repair and construct requirements. The focus on these efforts is to sustain existing infrastructure rather than growing capability to meet the diverse user base of the launch ranges.

With the U.S. commercial launch industry on the cusp of 60 percent to 100 percent increase in launch rates over the next five years, we must be putting more resources towards growing capabilities. Is this just a matter of needing additional funds, or does it require a policy change?

**DICKINSON:** Congressman, thank you for that question. As we look to the increase in the commercial use of those ranges, those ranges actually fall into the purview of the U.S. Space Force, so Gen. J. Raymond the Chief of Space Operations, those—the funding and infrastructure piece of that belongs to the Space Force. I'm happy to take that question for the record, but in terms of support to that activity, I'd be more along the lines of supporting NASA in their human spaceflight support activities that I can go into greater detail with you, if you'd like.

**CARBAJAL:** Thank you. That won't be necessary. Adm. Richard, I have concerns about cyber security and digital security of the modernization of nuclear command control and communications, NC3. What digital security and reliability metrics are used throughout the acquisition process for NC3 modernization? In addition, has STRATCOM taken any steps to improve visibility into the readiness of NC3's systems and mission?

**RICHARD:** Thank you, congressman, for that question, and I'll answer it in my separate responsibility as the NC3 enterprise lead for the Department of Defense. This is a separate organization that was established about two years ago to—it's separate but aligned to STRATCOM—to put an enterprise-wide focus on improving the performance of NC3. I'll start with your last question first.

A number of steps have been taken, and the system was always operated to a very high standard. It just had a number of operators. We have now centralized that, and in fact published in operations order called Buoyant Link that standardized reporting, data acquisition and otherwise much better understanding of the day to day status of the NC3 system.

Second, on the acquisition side of the house, partnering with undersecretary of defense for acquisition and sustainment, we have established many things, but one that would highlight the point I'd like to make here is a cyber-security scorecard where we have

de-bureaucratized a very complex process, dropped into a stack of 35 metrics that are key attributes you have to build into a system, both the ones that are operating and the ones that you're requiring. Service providers, services and agencies now report that, and we have a compliance mechanism where I as the operator judge the results of that and then present it to the vice chairman and the deputy secretary of defense so that we can make either operational decisions or programmatic decisions designed to close those cyber security gaps.

Let me say that I have full confidence in the cyber security of our nuclear command and control systems for a number of reasons, but I need to modernize NC3, just like we need to modernize the delivery systems and the weapons complex so that we can pace the threat and retain that confidence moving in the future.

**CARBAJAL:** Thank you.

I have limited time, but Adm. Richard, we have been hearing from you, the department, that China is expected to double, triple or quadruple the size of its nuclear stockpile in the next ten years. Even if China quadruples its current nuclear warhead stockpile, it still would only put them at a thousand warheads.

In addition, China has no first use policy and a minimum deterrence strategy. The U.S. nuclear arsenal includes nearly four thousand deployed and non-deployed nuclear weapons. With all this said, how do you understand the threat of China's arsenal in comparison to the United States' much larger and advanced stockpile?

**RICHARD:** So, congressman, first, the entire stockpile for the U.S. is not available to me, to operations. As you know, we are treaty constrained with Russia to fifteen hundred and fifty accountable weapons. That's what's available to me to actually conduct the mission.

Second, you don't deter by accounting. I don't hold up a card. I have more. I win.

Third is, I don't have the luxury of deterring one country at a time. I am required to deter all countries all the time, right? So I have to be able to deter Russia at the same time I have to be able to deter China. And that's the point behind China is no longer a lesser included case. In our history, we sized our forces with margin and capacity for uncertainty that left us enough residual capacity to credibly deter any other threat that we had to face that's about to be no longer true. And that's the point behind the statement, that they're no longer a lesser included case, sir.

**COOPER:** The gentleman's time has expired.

**CARBAJAL:** Thank you. I'm out of time. I yield back.

**COOPER:** We have about—a few minutes remaining. The committee will stand in a brief recess.

I ask members to make both votes and then return promptly. Thank you.

**UNKNOWN:** (OFF-MIC)

**COOPER:** To this room, continue the open session for a little while longer.

The subcommittee will return to order.

Mr. Lamborn?

**LAMBORN:** Thank you, Mr. Chairman.

Gen. Dickinson, in your statement, you said, quote, "Achieving the desired effects in the space domain requires close coordination with other combatant commands," unquote. There's currently great synergy that exists between USSPACECOM, NORTHCOM, NORAD, and the National Space Defense Center, all being located in close proximity there in Colorado Springs.

On the personal side, eight of the nine Space Force Deltas, formally called Space Wings, are located in Colorado. The ninth is at Vandenberg. And seven of those eight are in Colorado Springs, including all of our guardians who are focused on space warfighting.

There are over nine hundred uniformed Space Force personnel in Colorado, with over fifteen hundred in Colorado Springs alone. And there are thirty-two thousand total personnel who work or will work for Space Force in Colorado. Right now, all of these units and people benefit from working together in the same buildings with personnel from SPACECOM, Space Force and their intelligence community counterparts working side by side. How does it benefit our national security to rip out the headquarters element of Space Command from this concentration of national security, space and intelligence community professionals and move it someplace a thousand miles away?

**DICKINSON:** Congressman, your first comment about the relationship within particular, like U.S. Northern Command and NORAD, we do enjoy a great relationship, but I will offer to you that I—enjoy a great relationship with all the other combatant commands. And our ability to work closely with those combatant commands is fundamental to what we do each and every day.

We've had great success over the last twenty months with regard to our relationships with the other combatant commands. We have developed integrated planning elements which are small groups of plan—experts, space planners and operators who are embedded in each of the combatant commands. And we're growing those in all of the ten combatant commands at various levels right now. And so I tell you, those integrated planning elements have established a great relationship with each of the combatant commands in providing critical space warfighting expertise.

**LAMBORN:** So something that's working well and within the Space Command, there, side by side, thousands of people, side by side, why rip it in half and send some across the country?

**DICKINSON:** So, congressman, so in terms of military type of operations, we have seen, in the past and in the present, where we can actually do operations when we're not geographically located with each of those elements. So there is synergy, I think you gain by being in the same area. But I think there's equally synergy in terms of being able to do that in not a remote manner but in a physically distant manner.

So in terms of military type of operations, I believe you can do it in—in—in two different locations that wouldn't necessarily be directly there in Colorado Springs, for example.

**LAMBORN:** Well, if the military was told to put Space Command in a cornfield in Iowa, you know, they could do it. You know, we can do whatever we want. But why do it when it's working so well where it is right now?

I'm going to change subjects because I have limited time. Would you agree with me—or let me back up.

It may surprise people that survivable communication networks are—were not required for SPACECOM by the Department of Air Force when they did there what I question a highly questionable evaluation process. So survivable communications has to be added if we started a new command up somewhere. Whereas right now, there are multiple secure command centers at Peterson, Schriever and Cheyenne Mountain, which provide continuity of operations for Space Command. In fact, past commanders of Air Force Space Command have said their preferred warfighting command center would either be the National Space Defense Center at Schriever or Cheyenne Mountain Air Force Station, the latter of which was built to survive a thirty megaton nuclear explosion. So today, what kind of continuity of operations facilities are there in Huntsville, Alabama?

**DICKINSON:** Well, congressman, I'm not—I'm not aware of any in Huntsville, Alabama. But I do know that in terms of the National Space Defense Center and my command out in Vandenberg Air Force Base, that the secure communications that they have is satisfying the mission requirements now. And if the—if we are directed to move that that type of infrastructure would be built inoperable to meet my mission needs.

**LAMBORN:** And I—we haven't even talked about the cost. That's going to be over a billion dollars, but we'll maybe have a chance to talk about that at some time in the future.

And with that, Mr. Chairman, I yield back the balance of my time.

**COOPER:** I thank the gentleman.

Mr. Langevin?

**LANGEVIN:** Thank—thank you, Mr. Chairman. Can you hear me okay?

**COOPER:** Yes.

**LANGEVIN:** Thank–thank you.

I want to thank our witnesses for their testimony today and thank you all for your service to the country.

In January, the vice chairman of the Joint Chiefs of Staff said that before possibly reassigning responsibility for electromagnetic spectrum operations to a new entity, we needed to fix it by properly resourcing Strategic Command. Adm. Richard, what resources do you need to effectively execute EMSO?

**RICHARD:** So, congressman, thank you for that question.

And it might be worth a reminder to you in the committee, my responsibilities in electromagnetic–spectrum operations are to advocate, input on joint requirements. And then, I have some responsibility to execute the new Electromagnetic Spectrum Superiority Plan that DOD recently rolled out.

So Gen. Hyten was correct. STRATCOM is not fully resourced. There are two aspects to this, and both of these the department is addressing, one of which is in the headquarters element. So this is some number of personnel to execute these. And it's a small number, right? It's on the order of forty people to execute the headquarters functions.

And then there'll be a larger need for personnel more broadly inside the department to provide sufficient electromagnetic spectrum operations expertise. That second number is still being determined, but we have a very good way ahead to address the deficiencies that you referred to from Gen. Hyten.

**LANGEVIN:** And Admiral, whether or not EMSO stays at Strategic Command, what authorities does a command need to effectively execute EMSO?

**RICHARD:** Congressman, the issue is not authorities, right? STRATCOM and the department at large have sufficient authorities to accomplish this mission. But what does need to happen, and this is specific to EMSO but also applies in some other mission sets, is we have gotten used to as a nation adopting processes designed for permissive environments that are designed to minimize programmatic and technical risk at the expense of operational risk. We used to not do it that way.

And so one of my big functions inside EMSO is to bring the operational risk component back into the department processes so that our programmatic and other decisions are informed by operational risk as well as programmatic and technical risk. And that is the area—one of the areas that we're concentrating on. I have sufficient authority to do it. We just have to go get it done.

**LANGEVIN:** Thank you.

And one other question. Going off of Mr. Carbajal's question, I want to follow up and ask if we should conduct similar failsafe reviews of nuclear weapons and early warning systems, especially with regard to automation and implementing more AI?

**RICHARD:** So we are for implementation of artificial intelligence. We are just at the beginning stages to explore possible applications of AI inside Nuclear Command and Control. The first place that we see is really on the intelligence side of the House, right? So enabling us to go through a much broader range of information than is now humanly capable or possible to do in an effort to determine much better situational awareness. And then, the human processes present that the senior decision-makers.

The second piece that we see some immediate application for AI is in cyber defense, right? And it gives us a better ability to understand what's happening inside our networks, understand that better and make better operational decisions. Again, adapting things that are beyond human capacity alone to address.

**LANGEVIN:** Thank you, Admiral.

Gen. Dickinson, how would you describe information sharing and cooperation between your command and other combat commanders? What are some of the challenges that still need to be addressed?

**DICKINSON:** Congressman, I think we've got great information sharing between the different combatant commands. I mentioned

earlier with Representative Lamborn that—that we've got integration in each of the combatant commands with small planning elements right now, as well as some of their elements within my command. In particular, Cyber Command has a cyber-integrated planning element that works each and every day within my command that provides that integration. And—but over the course of the last twenty months with these IPEs, space IPEs, we have seen a lot of synergy in bringing integration to those combatant commands from U.S. Space Command in providing those space warfighting capabilities that they need.

**COOPER:** The gentleman's time has expired.

**LANGEVIN:** Thank you very much. My time has expired.

**COOPER:** Mr. Desjarlais.

**DESJARLAIS:** Thank you, Chairman, and thank you for your service to our panelists. I want to associate myself with Mr. Turner's line of questioning Adm. Richard on the no first use policy. About an hour and a half ago, I got off the phone with Ambassador Wilczek from Poland, and he's very concerned and assures me that his neighbors up and down Eastern Europe share the same feelings, that a no first use policy would erode our extended deterrent. Could it actually have an adverse impact to putting allies in the position of needing a deterrent or increasing their own capabilities?

**RICHARD:** Again, sir, I think the commander of European Command addressed this well in terms of us getting a mixed reaction out of our allies. I do think, in some cases, it will diminish our extended deterrence and assurance commitments. And if that were to be diminished, that would become their own decisions as to what steps they might need to take to redress that.

**DESJARLAIS:** Okay.

Staying on the topic of first use, but turning to Russia specifically, do you believe there are circumstances in which Russia may opt to use nuclear weapons first?

**RICHARD:** Congressman that is their doctrine.

**DESJARLAIS:** Yeah.

And I've been kind of intrigued by the argument about low-yield nuclear weapons. What do you think the likelihood would be that the next nuclear attack we see be of the low yield nature?

**RICHARD:** The—congressman, it is difficult to speculate on that. I do say that one, it is Russian doctrine under certain conditions that they would contemplate an attack like that. That capability is certainly necessary for that.

I think it's also useful for us to remember the U.S. has always had low-yield capability inside its arsenal. The only thing that was added with the recent addition of low-yield ballistic is we simply now have a weapon system that is much more likely to actually make it to the target.

**DESJARLAIS:** And the W762s, of course, have been deployed, and critics have called this weapon destabilizing. Can you respond to these critics and explain how this weapon could deter Russia from an escalation to win strategy?

**RICHARD:** Congressman, I'll offer that recently, within the last year, STRATCOM started formally measuring risk of strategic deterrence failure. I can give you the details on how we do that in the classified section. But this is—a formal risk assessment that's designed to make sure that we are analytically rigorous in all the things that we do, acknowledging that this is fundamentally trying to measure a subjective process, the decision making of another country.

But our assessment is that deployment of the low yield improved the risk of strategic deterrence, i.e., it lowered it because of the deterrent effect it achieved.

**DESJARLAIS:** Okay.

And just in the last minute or so, if you'd like to, the time expired in the line of questioning from Mr. Garamendi. And I was going to ask you to speak to the importance of developing the ground-based strategic deterrent rather than extending the Minuteman III. So if you'd like to take a minute and further your thoughts about how it would affect delaying or canceling development of GBSD would have on the nuclear deterrence, and our ally's confidence in the U.S. extended deterrence. And frankly, your ability to do your job the way you see fit.

**RICHARD:** Congressman, the nation one, has had a long-standing—I can trace its lineage back to the Kennedy administration, flexible and tailored strategy for strategic deterrence. It has repeatedly, through every nuclear posture review dating back to 1992 in that process, reaffirmed that the best way to accomplish that mission is with a triad. That makes the intercontinental ballistic missile leg that essential to be able to accomplish this mission.

You need the total capability and capacity of the triad to do what the president has directed me to do. And inside that, I need an ICBM that will actually work and actually make it to the target. It is a remarkable accomplishment that we've been able to extend the Minuteman III as long as we have. Again, I'll defer to the Air Force in terms of cost-effectiveness, but they have repeatedly reported to Congress that it's not cost-effective.

And I need it to be able to pace the threat. And so I don't see an upside to trying to life extend the Minuteman when it is time to get a modern weapons system such that I have the ability to deter the never before seen in our history condition of facing two peer nuclear-capable adversaries.

**DESJARLAIS:** Thank you. I yield back.

**COOPER:** The gentleman's time has expired.

Mr. Morelle?

**MORELLE:** Thank you, Mr. Chairman.

And thank you to Ms. Dalton and Adm. Richard, and Gen. Dickinson for being here to share your expertise. And obviously, for your dedication and service to our nation's safety and security.

I wanted to ask the question of Adm. Richard. The NS—the NNSAs Inertial confine— Confinement Fusion Program or ICF Program maintains three world-leading experimental facilities, including the Omega Laser Facility at the University of Rochester's Laboratory for Laser Energetics, which is in my district in Rochester, New York. As I understand it, they are the only means for a scientist to recreate the high energy density conditions found in an operating weapon without underground nuclear testing. In addition to the physical facilities, obviously, they employ and use a talented workforce that's necessary to conduct the experiments which produce valuable scientific data and deter our adversaries.

I also understand that the capabilities and they're—the viability of their importance is demonstrated by large investments being made in new facilities under construction both in Russia and in China. And I wonder if, Admiral , if you could comment on the importance of U.S. scientific capabilities in avoiding, first of all, technological surprise and ensuring the safety, reliability and effectiveness of the nuclear deterrent without a need to resume testing? I apologize. It's a long question, but I'm very interested in understanding this.

**RICHARD:** Well, congressman, you hit on, I think, the key point at the very end of your question, which is fundamentally, and I will defer to NNSA for the details, the way the U.S. today maintains confidence in the nuclear weapons stockpile is through the Stockpile Stewardship Program, where efforts like you describe provide the analytical and scientific basis for us to have confidence that our weapons will meet the standards that we ask of them without having to go to explosive nuclear testing, right?

So maintaining that scientific and technical base is critical for us to have confidence in our deterrent.

But I will go on and point out, I mentioned human talent bases earlier. The—it takes a considerable amount of subject matter expertise to take that test data that I'm describing and then work it back to a confidence assessment as to whether or not the weapons are meeting standards. This is not like, you know, putting your car front end and checking the alignment and a green light comes out of the box, right? And so that's one of the perishable skill sets that if we don't maintain that talent base and we lose it, it may take us five to ten years to recreate it, sir, over.

**MORELLE:** Yeah, and I wonder, General, if you have any thoughts or advice that you can give us on how to continue to maintain

it and make sure that we have a competitive advantage here in that regard? Is there—is there any advice you can give us on things that we should be thinking about in that—in that space?

**RICHARD:** So I would encourage NNSA through the Department of Energy to ask for the necessary level of resources to maintain that particular program, to do the weapons programs that the Department of Defense asked for, as well as maintain their infrastructure. The ultimate authority on what is necessary there, at least in the budget submission, is the secretary of Energy. But I would encourage NNSA to ask for the full measure of what they think they need, not just what they think they can get.

**MORELLE:** Very good.

Well, thank you again, Admiral, for your leadership and for your service, as well as the Gen. Dickinson and Ms. Dalton.

And with that, I'll yield back the balance of my time, Mr. Chair.

**COOPER:** The gentleman yields back.

Ms. Cheney?

**CHENEY:** Thank you very much, Mr. Chairman.

Thank you to all of our witnesses.

Adm. Richard, I wanted to follow up on something one of my colleagues was asking you about. There's an idea from some on this committee and more broadly that even though we're facing adversaries, as you've described, a historic, unprecedented situation with respect to China and Russia, both of whom are undertaking massive modernization buildup and expansion programs, that somehow the solution is for us to risk our own security, to tie our own hands with no first use, to reduce our own capabilities, to delay yet again modernization.

I wanted to remind the committee generally of something that President Truman said in NSC 68, which is timeless. He said no people in history have preserved their freedom, who have thought that by not being strong enough to protect themselves, they might prove inoffensive to their enemies.

And I'd like to ask you, Adm. Richard, if you could describe—give you a chance to describe in a little bit more detail what we are seeing from the Chinese in particular. I don't think the American people fully recognize and understand the nature and the expanded nature of that threat and also what it means when we say the Minuteman III is so old. What does that mean in terms of what's- available, what's not available, what it would really mean if we were to ask you simply to extend the life of that program once again?

**RICHARD:** Congresswoman, thank you for the question.

So I ran through it very quickly in my opening statement, but I'll elaborate that we are seeing this very rapid expansion of Chinese capabilities. I'll give you the specific numbers in the closed session. But this is a rapid expansion of the road-mobile capability. And this is an intercontinental ballistic missile that's on a very large truck.

Russia and China have them. We do not. Those are very large countries, and they simply drive the missile around. It is a challenging thing to keep up with them.

So they have this new capability expanding rapidly. They have many new solid-fuel intercontinental ballistic missile silos. These are the same ICBMs, by the way, that we're talking about either life-extending or otherwise trying to use ourselves. A solid-fuel rocket is very responsive. And that, coupled with their new Nuclear Command and Control, gives them a launch under warning or launch under attack capability that right now only the U.S. and the—in the Russians possess.

They're about to complete a triad. And so they have a strategic bomber with an air-launched ballistic missile capability on that. So for the first time, they have a complete triad.

They have six second-generation ballistic missile submarines, so they can do continuous at-sea deterrent patrols, i.e., survivable second-strike capability and a missile that can range continental United States from protected bastion in the South China Sea. And you add all of this together, and they can do any plausible nuclear employment strategy regionally. This will backstop their conventional capability and will constrain—potentially constrain our options. In other words, we'll be the ones that are getting deterred. And if I don't have the capability to similarly deter them. And the key point is this is about to become additive to what the

Russians can do.

So that—that's the threat. More detail in the closed session, but this is a breathtaking expansion. I just gave an order at STRATCOM that if you have a China brief that is more than a month old, take it back to the Intel people and get it updated because it is out of date. That's how rapidly they're moving.

And remember, STRATCOM is not the source of this intelligence. The intelligence comes from the intelligence community. We're simply the ones that interpret it operationally, like other commands.

**CHENEY:** Thank you, Admiral.

And I think it's important to just reaffirm the words that you've used, that the Chinese are at an inflection point. This is a breathtaking expansion, accelerating rapidly. And we are asking you to be able to deter both China and Russia simultaneously. And I think from the perspective of this committee and our obligation to ensure that you have the resources you need, the notion that we're asking you simply to life extend one more time technology from the 1970s is—is completely irresponsible. And I think we need to face the consequences of that choice if—if that's the path we choose to go down.

**RICHARD:** Congressman, if I could just add and again, I'll defer to the U.S. Air Force and the secretary of Defense as to whether or not Minuteman III can be life extended. They provide me the system.

Here's why I say—I'm just not sure it can be done. They have a long list of parts that are in very short supply. For example, right now, there are only two of these launch switches that go into every launch control center. There only two in supply. You got to have 45 of them for each launch control center. Nobody makes the inside of the switch anymore. No company is going to make the inside of the switch. It's like asking a company to make a dial-up modem, right? There's no profit in doing something like that.

The Air Force has been consistently pulling rabbits out of the hat to solve these problems. There's just—I'm afraid there's a point where they won't be able to pull the rabbit out of the hat, and the system won't work.

**CHENEY:** Thank you very much, Admiral.

**COOPER:** The gentlelady's time has expired.

Mr. Panetta?

**PANETTA:** Thank you, Mr. Chairman.

And thank you, Secretary Dalton. And gentlemen, thank you for your time today. And also, thank you to both of you, Adm. Richard and the General for stopping by my office and having the personal time that we did. I truly appreciate that.

Adm. Richard, you were in my office this morning, and I appreciate our brief conversation. But you also yesterday and today you've testified extensively and in the past regarding the dangers of reliance is solely on the submarine leg of the nuclear triad, which on a day to day basis is actually a dyad between the sea and the ground legs. And if we were to choose to delay modernization of the ground-based leg or not move forward with the ground-based strategic deterrent especially, especially in the midst of ongoing modernization of the LRSO, we would be essentially fully reliant on the sea bass leg of the triad.

Now, yesterday you testified to the Senate that you would request reactivation of bombers on alert if the ground leg were to be removed. You, yourself are, as we talked about today, a career submariner and, I'm sure, are much more familiar than anyone else in the room today with the survivability and effectiveness of our submarine force and submarine-launched ballistic missiles. Arguments against moving forward with a ground-based strategic deterrent are largely based on the premise that the sea leg of the triad can maintain an effective deterrence now and into the future.

Now, you've also testified that Russia is currently approximately eighty percent complete with nuclear modernization and recapitalization. While China is considered the department's overall pacing threat, you have stated that Russia is the pacing nuclear threat. Russia—Russian modernization and innovation span hypersonic weapons, ICBMs and nuclear power torpedoes.

Now, yesterday, you called the nuclear threat you expect the United States to face in 2030 as unprecedented. And you focused on the fact that the United States has never before had to deter two nuclear adversaries with separate interests at the same time.

Now, in 2017 and 2018, there was reporting that identified Chinese efforts to develop a new satellite which would detect submarines using lay—lasers and you looking at disturbances in the water. And they've also reported—reportedly develop new



magnetic detection devices and are actively pursuing new technology to be able to detect and neutralize our nuclear submarines—submarine forces.

Regardless of the success of these individual Chinese efforts, it's clear that our adversaries are working extremely hard to degrade the survivability of our sea leg. So apart from the inherent risks of reliance on one leg of the triad, are you aware of the specific modernization efforts being made by Russia and China to more effectively identify and neutralize our nuclear submarines in the future?

**RICHARD:** Congressman, thank you for that question, and I'll try to address all the pieces of that.

First, I will remind, respectfully there's a fundamental design criteria inside the triad that we assume that we could lose any leg of the triad and still meet all presidential objectives, albeit with reduced flexibility. So it—without getting into the individual risk, that was just a basic design assumption. And I should point out, yes, I said that yesterday, that if all we—if we did not have an intercontinental ballistic missile leg, I would request to re-alert the bombers. I would do that. That would only get us through the day-to-day issue, right? There would still be an overall capacity issue that I would need to address in order to do all the things the president, via the secretary of Defense, has asked me to do.

As to the survivability of submarines, yes, there are extensive efforts underway by Russia, China and others to improve their anti-submarine warfare capability. This is historic. This has been the case. It's a classic hide-and-find competition, undersea, like in other domains.

We have equivalent efforts underway to attempt to find them. We have extensive programs designed to ensure the survivability of our submarine force in Gen., ballistic submarines specifically. So I have full confidence in our ability to maintain the survivability of the submarine leg. However, that's not the only reason or risks.

There are also operational and technical things that have nothing to do with the opponent that have to be accounted for. And independent of that, we have always assumed that if we could still—or lose a leg of the triad and still meet presidential objectives.

**PANETTA:** Outstanding. Thank you, Admiral.

Mr. Chairman, I yield back.

**COOPER:** Thank you. The gentleman's time has expired.

It looks like Mr. Walts is no longer here.

Mr. Brooks?

**BROOKS:** Thank you, Mr. Chairman.

I've got some questions that also revolve around the Space Command Headquarters being located at Redstone Arsenal in the Tennessee Valley. And I want you to think about things in two different contexts. One is merit. The other is nonmerit or political.

And let me run through the merit just for a moment. With respect to merit, as I understand the criteria or minimum requirements, there were three. One, you have to be within one hundred and fifty miles—excuse me, have to be within the top one hundred largest metropolitan statistical areas. You have to be within twenty-five miles of a military base. And you have to score in the top fifty or above on the AARP Public Policy Institute's Livability Index.

Quite clearly, I think everyone would agree that Redstone Arsenal, in the Tennessee Valley, met those minimum criteria. So once you get past those minimum criteria, then you had a competition of sorts amongst other locales that met those minimum criteria. An evaluation of each site score based on four criteria, forty points was based on mission-related criteria.

A subpart of that was workforce. By way of emphasis, Tennessee Valley Redstone Arsenal has one of the highest concentration of engineers in the world and certainly in the United States of America. We have mathematicians, scientists, physicists, a highly qualified workforce.

We have a second subpart mutually supporting space entities. Well, certainly, as Gen. Dickinson knows, we've got a plethora of space-related military activities on Redstone Arsenal. We're also the home of the Marshall Space Flight Center, which is the birthplace of America's space program. It would be very hard for anyone else to compete with the attributes that we have there.

So in the forty points mission-related criteria, I'd submit that Redstone Arsenal did very, very well, as evidenced by what we

provide in the Tennessee Valley and the Redstone Arsenal.

The second criteria was infrastructure criteria, parking, land, communications. Some of you are familiar with what we provide at Redstone Arsenal. Certainly, Gen. Dickinson is. Family of military personnel, housing, health care. I would submit that we also scored very, very well in that second criteria, so that's seventy of the points.

Then you've got the third criteria, which is community support, which is fifteen points. Schools, we've got excellent schools in the Tennessee Valley. You've got a lot of gifted parents. And, of course, they demand high-quality schools for their children. Cost of living A-plus score in my judgment there. We're one of the lesser expensive places to operate in the United States of America. Community support then criteria. Those fifteen points I'd submit that Redstone Arsenal in the Tennessee Valley scored very well.

Then the fourth criteria, the cost of the Department of the Air Force. Granted that there is an initial startup cost, and at Redstone Arsenal, that may be higher than in other places. However, there is also the long-term operational cost, given the lower cost of living, the other things that we offer at Redstone Arsenal in Tennessee Valley, I would submit that we also score well according to the cost to the Department of the Air Force criteria. So all that merit-based being cited very, very quickly, now I can get to my question.

This is with respect to each of you, and I'll start with Gen. Dickinson. Are you aware, personal or direct knowledge of any political non-merit influence on the Space Command Headquarters, Redstone Arsenal location decision? Anything other than merit?

Gen. Dickinson, how about you? Any personal or direct knowledge?

**DICKINSON:** I have not had no personal direct knowledge.

**BROOKS:** Adm. Richard, are you aware, personal or direct knowledge of anything that would suggest that the decision to locate Space Command Headquarters at Redstone Arsenal in the Tennessee Valley of Alabama was based on political or non-merit influence as opposed to merit?

**RICHARD:** Congressman, no, I am not.

**BROOKS:** Ms. Dalton, I know this might be outside your normal ballpark, but same question to you. Are you with personal or direct knowledge aware of any political or non-merit influences on the Space Command Headquarters, Redstone Arsenal location decision, anything other than merit?

**DALTON:** No, I have not.

**BROOKS:** No further questions. Thank you, Mr. Chairman.

**COOPER:** The gentleman yields back.

That is the last question for open session. We will declare a brief recess so that we can make the last vote. And then, we will return not to this room but to 2212 for the closed session.