

Chairman of the Joint Chiefs of Staff

Remarks by General Paul Selva at the Mitchell Institute for Aerospace Studies Strategic Deterrence Breakfast Series

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GENERAL PAUL J. SELVA: (In progress) – important issue. I’m just going to spend a few minutes talking about where I stand on nuclear deterrence and now our nuclear enterprise fits into three ongoing efforts. The first are a combination of the nuclear posture – (inaudible). The second I’ll talk about is where I believe the enterprise is today in terms of its health and how important it is to the defense of the nation. And I’ll try to link it to the work that the chairman and the Joint Staff have done with OSD on the National Military Strategy and how that might change the National Defense Strategy, as well as the National Security Strategy. If I get all that done in about 30 minutes, there’ll be time for questions. (Laughter.) The rules of engagement of these: I am deaf as a post. So you get a chance to yell at the general. (Laughter.)

Well, first of all, let me start with a little historical perspective. Twenty-six years ago this week, President Bush and President Gorbachev signed the first START treaty. Negotiations has been ongoing since 1982. Almost 10 years of discussion of how to account for weapons, delivery systems, and the enterprises that support them. We reduced delivery vehicles to 1,600, which was a 30 percent reduction to the weapon systems that deliver nuclear weapons. And we reduced our weapons inventory to a mutually agreed upon 6,000, a 42 percent reduction in the number of strategic nuclear weapons in the world’s inventory. The treaty included 12 kinds of inspections, as well as continuous monitoring of both the Russian and U.S. nuclear enterprises. It helped us ensure predictability and strategic stability.

That treaty, signed in 1991, remained in effect until 2009. The New START treaty was subsequently signed about 10 months later and entered into effect in January. In fact, as we sit in this room, the Russians will be accomplishing the last inspection of the Ohio-class submarine to determine our compliance with the reduction of the missiles used on that weapon system. So I really do appreciate the opportunity to be here today to talk about what I believe is the most important mission of the Defense Department. And I am not alone, because both the secretary and the chairman have stated that nuclear deterrence and maintaining our strategic nuclear enterprise is the number-one mission of the Defense Department.

So let me offer you three propositions, because if you don’t believe these things then you won’t have to listen to anything else that I say. First and foremost, nuclear weapons pose the only existential threat to the United States of America and to our allies. There’s no substitute for the prospect of a devastating nuclear response to deter that threat. Proposition number two: Our strategic nuclear triad complicates the adversary’s preemptive strike calculus and it allows us to hedge against those internal and external uncertainties in the nuclear enterprise. And finally, deterrence, assurance, and escalation control continue to be the objectives that allow the nuclear enterprise to support our U.S. national security objectives. And if you don’t believe one or all of those three propositions, sleep is a valid form of criticism.

So let me briefly try to tie those back to where we are with the nuclear posture review and the ballistic missile defense review, two reviews mandated by President Trump early in his administration. As you might expect, given the classification level of this particular venue and the fact that those are ongoing reviews, there’s not a lot I can say about the details. But let me walk you through some of the processes and the way we’re thinking about them. Our nuclear

posture review will ensure that we maintain our nuclear deterrent as a safe, secure, and reliable part of our weapon system inventory. It will also be tailored to the requirements of 21st century problems. And I'll address that a little bit in a minute. If I don't, somebody ask me a really hard question.

We're going to identify the strengths that are required in our ballistic missile defense system, biased against the threats we believe will emerge over the next 20 years. That's true of both the nuclear posture review and the ballistic missile defense review. That intellectual process is unique. This will be the first time that we have projected the threat out beyond the current administration to provide advice to a sitting president on how we should tailor our nuclear enterprise and our ballistic missile defense enterprise to assure the defense of the nation. The NPR is going to provide the president with a strategy and capability set of recommendations. And we expect that there will be significant follow-on implementation work.

Everything's on the table. We've looked at conservative strategic approaches to radical new approaches. We're going to find the best set of recommendations to give the president the options to maintain our strategic deterrent capacity against Russia, China, and emerging nuclear powers. And sitting in this room, I probably don't have to give you the list, but I'll read the last two, because I'm going to talk about them in just a minute, North Korea and Iran. And if we're not conscious of all of those variables, then we leave too much on the table. So in the development of the strategic threat prediction against what the military views will be accomplished, we have included all four threats.

We have included the notion that we must hedge against both political and technical uncertainty. And we must do this in the context of all of the 21st century threats that exist out there. In fact, John Hyten, the STRATCOM commander, is fond of calling it 21st century deterrence. And my proposition is deterrence is no different in the 21st century than it was in the 20th century, or that it was in the 19th century or the 5th century or the 1st century B.C. You hurt me, I'm going to hurt you worse. I have the tools to do it. And if you don't believe me, step across the line. We've played this game since we were kids.

The logic is the same. If you attack me, I have the capacity to return that attack. And I will return it with a degree of violence that is commensurate with the violence you've done to me. And if you can accept that, then we reach a state of mutual deterrence. It's both the will, the capacity, and the capability. If you don't have all of those, deterrence fails. So my proposition to John Hyten, who is a dear friend, and to anybody who wants to have this debate about deterrence, is the fundamentals of deterrence haven't changed. The tools are emerging and evolving quickly.

So as we look at strategic nuclear deterrence in the 21st century, we have to incorporate all of the systems that make it possible. That includes the networks that allow us to do command and control. Which means, there is a cyber component to deterrence in the 21st century. But I would argue there has been a communications and command and control component to nuclear deterrence since the very first day we fielded nuclear weapons, because of the way we delegate only to the commander in chief the decision to deploy those weapons or not. And that control matters.

Let me segue, for just a moment, into where I fit in this puzzle, because some of you are wondering: Why is the vice chairman such an ardent voice for deterrence? Well, first of all, my first assignment in the United States Air Force was in the then-Strategic Air Command. My first task when I arrived at Dyess Air Force Base was to accomplish my certification for duty on nuclear alert. Now, I was a tanker guy, so all I did was carry the gas. But I lived with all the bomber guys. And our mutual responsibility was to maintain the air leg of the triad ready every single day.

And for four years at Dyess Air Force, every second week I went out to a small facility at the end of the runway, pre-flighted my aircraft, met the bomber crew to which I was mated, and committed that if we were launched I would do everything in my power to get the crew the fuel they needed to strike their targets in the then-Soviet Union in the thick of the Cold War. So my service in our Air Force started with nuclear deterrence. And some would say I lost my path. (Laughter.) I went off to do other things. But here I am again, nearly 30 years later. And I find myself in the position of being one of many voices for the requirement of the strength of our nuclear enterprise.

And when I say the nuclear enterprise, I mean soup to nuts. I've made 13 trips and 15 visits to facilities that house bombers, hangars, missiles, weapons, submarines. I've been to the places where we build the airplanes, the submarines, and the missiles. I have been to the workshops and talked to the artisans who very lovingly assemble the parts of what we euphemistically call the physics package, the heart of our nuclear warheads. Because all of them are important – every crew member, every scientist, every leader, every manager, every security forces and master at arms technician that guard the weapons, move the weapons, load the weapons, manage the missiles, fly and crew the systems that make nuclear deterrence possible.

And I bring that experience back to 10 committees inside the Joint Staff and the Pentagon, on which I serve as one of the voices for that entire enterprise. The most important of which are: the Joint Requirements Oversight Council, the Deputies Management Action Group, where we do requirements and budgets, the Nuclear Weapons Council, where I'm a voting member on aligning the Department of Energy's efforts with the Department of Defense's efforts on managing our nuclear stockpile, and a host of others.

So that's why I'm here, because I believe this enterprise must have voices. And those voices can't all be my age. So on those 13 visits, two things have struck me. One is the age of the infrastructure. And the second is the age of the expertise. Now, that's not true of the crews that man our systems, guard our systems, and maintain our systems because the military has a way of moving experience through the pipeline. But if you go to the national labs and you look at the demographics of the people that actually do the critical thinking about the security, safety and reliability of our nuclear stockpile, most of them are my age.

And I used to think of myself as young, but I can't do that anymore. So one of my calls to all of you is to look around for those young men and women who have a knack for either the political science and the strategy of deterrence or for the science, the physics that it takes to actually design and maintain weapons that will be reliable in an environment where we neither

test nor build new capability. I have actually watched a technician very carefully disassemble the primary of a nuclear weapon so that we could recover the components and recycle them into a new warhead that is simply recycled parts of existing warheads.

And that's smart. It also takes an incredible amount of skill. And we have to raise the next generation of young engineers, young scientists, and young managers and leaders that have the vision to get us through a very tightly coupled effort to replace our existing nuclear enterprise with new tools and new equipment. You notice I did not use the word modernize. I used the word replace. Of course, they will be more modern. How could they not be? Our newest bomber's already 30 years old. Our oldest bomber's as old as I am. The Minuteman-III was put in silos in the 1970s. And we're going to – we're going to sail Ohio-class to the end of its 42-year lifetime.

So for those of you who are skeptics, here's my example. I have a 1979 MG. It sits in my garage in Woodbridge and it runs only when I give it significant attention. I have a 2007 Saturn Sky in my garage behind my house at Fort Belvoir – or, I'm sorry – at Fort Myer. It has six computers and it's fuel injected. If I open it up I say, what the hell is that? (Laughter.) Because it doesn't look like an engine, but it runs like one. So here's my question: When I went out and purchased the Saturn Sky was I modernizing or replacing? I simply replaced my MG, which doesn't run well, with a Saturn Sky that runs swimmingly. I happen to have gotten a very modern vehicle that has power steering, GPS guidance, and a telephone, six computers, fuel injection, God knows what else is under that hood. But thankfully, it all works.

When we replace Ohio-class with Columbia-class, it will be a step increase in the capability of our strategic ballistic missile submarine fleet. If we don't replace Ohio-class with Columbia-class, we will not have a strategic ballistic missile submarine fleet. As we replace the B-1 and the B-52 and the B-2 with the B-21, we will have a new fleet of bombers with modernized equipment. If we don't, we won't have an air leg to the triad. And the same is true of the ballistic missile leg of the triad. So we are not on a quest to have a Cold War-style arms race with any opponent. Very simply on a deliberate path to replace the structure that exists inside of our nuclear enterprise today with new equipment.

And the consequence of that will be it will be more modern and it will be more capable. But I can juxtapose that with the Russians have to modernize all of their warheads, all of their missiles, all of their aircraft, and all of the weapons that they use. And they're two-thirds of the way through that journey. I could compare that to the Chinese journey that is increasing the inventory and accuracy of their nuclear weapons, making them more global and harder to target, and a changing philosophy in their deterrence from almost all countervalue to almost all counterforce.

So in that context, we must move forward with the replacement of our force structure and warheads to get to a safe, secure, reliable nuclear deterrent in the mid-'20s to early '30s. And I will acknowledge, as I stand here, that it won't be cheap. Today we spend roughly 3 ½ percent of the Defense budget on the ownership and maintenance of our existing nuclear force, from indications and warning, to nuclear command and control, to the aircraft, submarines, missiles,

and weapons. The replacement of that enterprise, given the current set of budget constraints, will raise that number to just over 6 percent, because while we're buying new we must maintain old.

If you look across the history of the defense budget, the three times we've done this we've been at about the same place. We will face some stark choices. We will have to make them. But if you believe my first proposition, that nuclear deterrent is the number-one mission of our Department of Defense, that nuclear weapons are the only existential threat to the existence of our nation, how could we not go down this path?

Let me segue for a moment to how that fits into the work that's being done right now in the Pentagon. And then I'll be happy to take your questions. First, nuclear deterrence fits right into the National Military Strategy. We have articulated that we believe there are four nation-state threats to the security of the United States: Russia, China, North Korea and Iran. All but one currently possess nuclear weapons. The Joint Comprehensive Plan of Action, whatever your opinion of that agreement is, has at least for the moment prevented the Iranians from moving down a path of nuclearization.

None of those nations have been deterred from dealing with large inventories of ballistic missiles – large being a relative term. But to be quite frank, while it's unclear whether or not Kim Jong-Un can actually target the United States with a long-range intercontinental ballistic missile, it is very clear that he's figured out how to build missiles and he's willing to proliferate to any country who will pay for it. And there is a nexus, and you'll learn more about it soon, between the Iranian ballistic missile program and the North Korean ballistic missile program, and many others.

But in point of fact, that's why we find ourselves having to run in parallel a nuclear posture review that contemplates a future where there may be more than just one or two nations that might threaten us with nuclear weapons, and a ballistic missile defense review that contemplates a world where the only threat might not be North Korea, and how we adjust to that new reality. Here are the facts: This is only our second ballistic missile defense review. It's only our fourth nuclear posture review. It is the first time in the history of either that the threat actually got worse in the intervening years between the last review and the current review.

In every other nuclear posture review and in the first ballistic missile defense review, it was assumed that over the life of the review and actions taken by those reviews that the threat would very likely diminish, not increase. We are not making that assumption. We can't afford to make it. You can't afford to let us make it. So if we work in the context of the three propositions that I made at the beginning of this topic, and navigate through the reviews that I talked about and the strategies that we put on the table, one thing is sure: Nuclear deterrence matters.

And the people who make it possible are at its very core. They are the one resource that we must pay the most attention to. The young lieutenants and captains that man our missile silos every single day are an important national asset. The young sailors and their commanders who man our strategic ballistic missile submarines are a national asset. The crew members who commit to fly the bombers that are such a critical part of our nuclear triad, and the tankers that

support us, are a national asset. So are all the people that support them – the security forces, the maintainers, the munitions technicians, the young men and women who lay hands on nuclear weapons and actually make sure they're safe, secure, reliable, are a national asset. And we owe it to them to give them the tools to make sure they can do their job, because our very freedom and liberty depend on their expertise.

Thank you all so much for the invitation to be here today. I look forward to your questions. (Applause.)

MODERATOR: For those of you asking questions, if you would wait for either Niki or one of our interns to get you the microphone. I also was remiss in not acknowledging a friend of mine who is here today. The single most important book on China was written by Mike Pillsbury. It's called "The 100 Year Marathon." Michael, welcome and thank you for coming here. And with that, if you would identify yourself to the general and ask your question, keep it questions as opposed to speeches. (Laughter.)

Q: Good morning, General. Thank you for your comments. Taylor Winkleman, Senator Markey's office.

Inherent in your definition of deterrence, I think, is the concept of no first strike. Could you comment on the value of assuring those that we are attempting to deter that we don't intend to strike first ever?

GEN. SELVA: It's actually not inherent in what I said. It's assumed, presumed. We don't – we don't currently state a preference one way or the other. What we say is that we will use nuclear weapons to prevent the use of nuclear weapons. And I think that's key. If that means that an administration somewhere down the lines articulates a philosophy of no first strike then we will have to address that. But as currently stated in our policy, it does not include a preference one way or the other.

Q: Patrick Tucker with Defense One.

There are a lot of different aspects of our nuclear deterrence. Which one do you feel possesses the most value deterrence-wise against a regime like North Korea? And could you describe a little bit more about why we'll be hearing more about the nexus between Iran and North Korea? Thanks.

GEN. SELVA: OK, so I said that basically as an advertisement for the next session of the – of the breakfast. (Laughter.) That's why I think you're going to hear more about it. It's not because I'm going to stand behind the pulpit – or behind the podium – the bully pulpit, the podium, and expand on it. So that's an unpaid extra announcement for your next session. (Laughter.)

But I take the point on the issue of what's the most important part of our deterrent against North Korea. We have expressed a policy that we will extend our nuclear umbrella over all of our allies. That includes the Republic of Korea and Japan. And because we don't believe he can

currently target the United States, the extended nuclear deterrent is what I pay attention to the most right now, and how we articulate our commitment to support our allies if he attacks them with the weapons that he potentially has in his inventory. There's a lot of qualifiers because, to quite frank, there's a lot we don't know.

I'm in the record in my testimony before the SASC for confirmation for this job, for a second term just a couple weeks ago, saying that it is my belief that before we assert that he has – he, Kim Jong-Un – has a(n) intercontinental ballistic missile that can strike the United States with a nuclear weapon, he has to meet more criteria. One, he has to have the missile that will actually range that distance. We believe he has that capability right now. It's clear that he can build a rocket that can fly that far.

He'll have to have the guidance and control system, the guidance and stability control to move a rocket across that distance without it breaking up. We don't know if he has that. We don't know that he doesn't. He's been pretty successful at short and medium-range ballistic missiles. But the physics of a long-range missile are substantially different. So stability control matters. And that's a gap we need to fill in our understanding of whether or not he can do this.

The third piece is a reentry vehicle that can survive the stresses of an intercontinental ballistic missile shot. Once again, much easier to go straight up and down than it is to endure the reentry stresses and the actual heat of an intercontinental missile shot. We don't know if he's got that technology. We don't know that he doesn't, but we don't know that he does. He hasn't demonstrated it. We have to see.

And the last is a nuclear weapon that can survive that trip. Again, that's what we don't know. We don't know the design specifics of his nuclear weapons – purported nuclear weapons. We don't know if he's been able to miniaturize it and make it stable enough. So those four criteria must be met. Can't go any further than telling you what the four criteria are because what we know and don't know about them specifically is above the level of classification of this conversation, or any conversation, by the way, that I would have in public. (Laughter.)

But those are the four things. And I think we all ought to be quite specific about our observations and our reactions to his actions. But here are the facts. He's launched more test ballistic missile in the last year than the previous 10 years. I'm told he's launched some 17 long-range ballistic missile in the last 12 months. That's more than have been launched in the last 10 years. He does not subscribe to our test philosophy, which is design until your brain hurts and test to be successful. He'll tweak – his engineers will tweak, test, tweak, test, tweak, test. You can stumble across some really interesting things if you're willing to fail. He is clearly willing to fail.

So we don't know how fast he can accelerate the development of those four things I just talked about. He solved the rocket problem really fast, by conventional standards. If he takes the same approach to the other three, he could accelerate very quickly. So those I think are the things we should be paying attention to try to determine what tools we have both inside and outside the nuclear enterprise to either deter or slow his advance. I think that's the work we need to pay attention to. Thanks for your question.

Q: Thanks for your remarks, General. Has Kristensen, Federation of American Scientists.

I have a question. You talk about the need to tailor the posture for the future. There have been some suggestions to modify a reentry vehicle to a low-yield launch. Do you think that there's a relative requirement there?

GEN. SELVA: There is. We have – we have stated a requirement across multiple nuclear posture reviews to have variable yield. So that is a path we're pursuing pretty quickly. Whether we do it with a ballistic missile reentry vehicle or another tool in the arsenal, it's important to have it. And it's not for the reason many people believe, which is that makes the weapons more useful. I've actually heard that argument. I discount it. If I don't completely discount it, people begin to believe it. If I give you a low yield nuclear weapon, you'll be much more likely to use it.

The answer to having variable yield on nuclear weapons is to achieve only those effects that are militarily useful and necessary. So as horrible as nuclear war is, we do still apply some of the rules of war to it. So a proportional reaction to an enemy's attack is actually a righteous and reasonable thing to do. And if all you have are large-yield weapons and you're trying to answer a low-yield attack, it's still a nuclear attack. And answering that with a conventional weapon is likely not going to have the kind of deterrent value of saying: Even if you use a low-yield weapon we have options to respond. And those options are responses in kind if you're crossing a threshold that we say is unacceptable.

So I think that – in that space, that strategic space of understanding how one might actually conduct a response to a nuclear attack. We have to have options that we can offer the president. If the only options we have now are to go with high-yield weapons that create a level of indiscriminate killing that the president can't accept, we haven't provided him with an option – or her with an option to respond to a nuclear attack. And I don't think a conventional – as I said just a minute ago – I don't think a conventional response to a nuclear attack would be sufficient to deter the kind of people that would contemplate a nuclear attack. Thank you for the question.

Q: Thank you, General. Jon Harper with National Defense Magazine.

In your opening remarks, you noted that as part of the ballistic missile defense review you're considering radical new approaches to missile defense. Can you provide any details about what those might entail? And also, you know, in the past you've talked about the need to acquire artificial intelligence and machine learning technologies. You know, are you seeing much innovation in that regard coming out of the traditional defense industry, or most of that coming from Silicon Valley and other emerging tech companies.

GEN. SELVA: So I'm going to exercise my ability to use a get out of jail free card and pass on the first question because of the level of classification. On the second question, about artificial intelligence, the places where that innovation is happening – we're actually beginning

to see more traditional defense industrial partners innovating in that space as well. The ability to penetrate – I will use the word – classic defense contractor, used with the notion that artificial intelligence can actually make the entire enterprise better is a journey, not a destination. So we will get there. I have more what I would call front line big, industrial contractors coming to talk about the value of artificial intelligence and what do I need for the weapons systems of the future, and how it might be used to make current weapon systems more effective. And that's really the destination that we can get to. But as soon as we arrive, there'll be another destination on the horizon.

So I would give you this proposition. And I borrow it from a professor at Cornell Tech because I asked him this question, and his is the answer he gave me. I said: In the lifeline of artificial intelligence and machine learning – I'm an aviator, so let's make this simple – are we closer to the Wright Brothers or Charles Lindbergh? He said, the Wright Brothers, but they're still making bicycles. Think about that. There's more we don't know about artificial intelligence than we actually do know. But we're on the cusp of actually making it operational. In the Wright Brothers analogy, building the airplane. We're going to have to integrate it into systems that are incredibly important for national defense.

The next step, though, will take 50 years. So it took 50 years between the Wright Brothers and Chuck Yeager. His proposition and mine is the acceleration in artificial intelligence will move much quickly. Because back then you had half a dozen people around the world who thought man might be able to fly. You had a couple that took their skills at building bicycles and built an airplane. Around the world today, there are millions of computer engineers who are tinkering around with artificial intelligence.

You don't recognize most of it as tinkering around with artificial intelligence, but most of the video games that our young people are playing today have a component of artificial intelligence built in so the games can adapt to their inputs. They're not pre-scripted. The outcomes are not certain. But the games react to the players. That's a part of this enterprise that many of us in the defense industry just simply ignore, but it is the chips that are in the video game consoles, those large graphics-processor chips they use, that have made artificial intelligence possible.

It's the fact that those game developers cram so much data into the parallel processing that goes on inside those chips that has helped us understand how to move down this path to artificial intelligence. It's not a mistake that games are the way we test artificial intelligence. So I think there's a – there's a huge difference between the potential of AI and the invention of those two men who gave us flying machines. And I think there's a tremendous difference in how fast it might accelerate.

MODERATOR: We have a chance for two more questions. Senator, did you have any questions you would like to ask?

SEN. : I've had an opportunity to do this, so I'm going to pass and allow others.

MODERATOR: Colin, before I get to you I have one question. Given, general, you have warheads, platforms and the command and control going through a nuclear modernization program, what are your thoughts as to the adequacy of the industrial base for all those?

GEN. SELVA: So there's two separate pieces to that industrial base. And to all that, I could add indications and warning, satellite constellations, the radars, the sensors that actually inform the decisions about whether we're under attack or not under attack. And all those must be integrated together. So there's two pieces – or, actually, three pieces of the industrial base that is a grave concern. One is the ability to deliver the major weapon systems on schedule. So there's no slack left in the Columbia-class submarine schedule, very little. And it's a big machine. And big machines are complex. And big, complex machines generally tend to suggest engineering challenges.

So we've done all the preliminary design, or we're looking at how we might build that class of ballistic missile submarines. And tremendous amounts of work have been done, but that's an unknown. And there's no delay left in the schedule, because we're going to take Ohio-class literally to end of safe lifetime, which is a smart policy choice, but it has strategic implications. So I worry a little bit the actual physical industrial base's ability to make airplanes, missiles, ships.

The second part of the industrial base that I worry about is our capacity to actually deliver on a reasonable timeline satellite constellations that provide both indications and warning and command and control. We're horrible at this. The last number I heard was 144 months to deliver a new class of satellite. Last time I looked, that 12 years. I think the next time I look it will be 12 years. That's nuts. That's nuts. And the final one is the weapons construction, maintenance, storage infrastructure that exists inside the DOD, some of which still inhabits buildings that were built for the Manhattan Project. So we have to pay attention to all of these. We have to pay attention.

Q: Colin Clark, Breaking Defense. Good morning.

GEN. SELVA: Good morning.

Q: You mentioned command and control. I understand that the new nuclear command and control system will be separate from MDC2, correct?

GEN. SELVA: Correct.

Q: What lessons do you expect – are you starting to learn from the MDC2 effort, or is the other way around?

GEN. SELVA: The proposition we've made, and it's really not a question of lessons learned back and forth. If the nuclear command and control system, if it's not a stand-alone system, it becomes subject to all of the vulnerabilities of any other command and control system that we have. So the fact of – the necessity to identify and validate the personnel order through the national – the nuclear command and control system is it should and must be a separate entity

from all of the other services that we provide across our networks to national leaders who have other tasks.

The way I described this to the Defense Science Board that's looking at this is – and they disagree with me, and I'll say that publicly – nuclear command and control is a low-contact proposition. We need to ask and answer about five or six questions to get the intent of the commander in chief. Once you have the intent of the commander in chief, you offer him options – or her options. He or she selects an option. And when that's done, you must validate who they are. That's the simplicity of the process. Don't get me wrong. It's incredibly complicated, but that's the simplicity of the process.

Any other decision that a national leader could make, I would argue is a high-contact decision. You can debate, discuss, have policy meetings, determine the course of action you want to go on, enter on that course of action and change it if you like, because you have the benefit of time. But in the worst set of circumstances, which is what the nuclear command and control system is built upon, time is of the essence. Clarity is absolutely required. And the ability to identify the person who is selecting the option and giving the order is an absolute. So you have to build all those in. The two needn't be the same and likely shouldn't be the same.

MODERATOR: With that, General Selva, thank you on behalf of the Mitchell Institute for an extraordinary presentation. I want to thank our sponsors and friends that are here today. Thank you, sir.

GEN. SELVA: Thank you. (Applause.)

(END)