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COMMITTEE ON
ARMED SERVICES

UNITED STATES SENATE

HEARING TO RECEIVE TESTIMONY ON UNITED STATES NORTHERN COMMAND AND UNITED STATES STRATEGIC COMMAND IN REVIEW OF THE DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2021 AND THE FUTURE YEARS DEFENSE PROGRAM

Thursday, February 13, 2020

Washington, D.C.

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U.S. Senate
Committee on Armed Services
Washington, D.C.

The committee met, pursuant to notice, at 9:30 a.m. in
Room SD-G50, Dirksen Senate Office Building, Hon. James M.
Inhofe, presiding.

Committee Members Present: Senators Inhofe
[presiding], Fischer, Cotton, Rounds, Ernst, Tillis,
Sullivan, Cramer, McSally, Scott, Blackburn, Hawley, Reed,
Shaheen, Gillibrand, Blumenthal, Kaine, King, Heinrich,
Peters, Manchin, and Jones.
OPENING STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM OKLAHOMA

Chairman Inhofe: The meeting will come to order.

I have already kind of explained the situation we have. You and I are both going to waive our opening statements, as are our witnesses. Then we get right into questions. I think we will be fine with the votes coming up that way.

So that being the case, we will go ahead and just start with questions. I only have one that I really wanted to get to. I talked to both of you guys on other occasions about this, but what we ran up against -- and this was kind of a surprise to a lot of us -- the NNSA’s primary job is to build the nuclear warheads to meet the requirements of the Department of Defense. And earlier this year when we heard that the NNSA budget had been cut, we called the DOD and asked them what they thought, and to my surprise, when I got a hold of them, they said they did not know because they do not get it until after such time as -- actually I think Energy gets it first. And so they did not have it.

I am not sure how it happened.

Then I went back and I have talked to you folks about it. What are you really able to do if you do not hear about what the budget is before it is already signed off or in the process of being concluded? And that is something
we have a concern about.

Then it reminded me back when I was first elected --
and that was when David Boren had this job, and he called
me. I remember this. This was way back in 1994. He
called me up and he said, well, Inhofe, there is something
I have been trying to get done for a long time and I
failed. Maybe you can do it. And it was correcting this
very problem that we are pointing out right now. So we may
be addressing this.

So the question I would ask you is do you agree this
thing ought to be changed. You got to be in on this thing
to know -- you remember what we did earlier this year. We
had to go in and talk to the President because they had
dropped the budget down about 8 percent on NNSA, and nobody
was aware of it except the Department of Energy. So we
went and talked to the President and had a meeting, and we
brought it back up to just under the 20 figure. So that is
what happened there.

Do the two of you agree that this is something that
needs to be corrected after all these years?

Admiral Richard: Senator, one, I applaud yours and
the committee’s leadership in addressing the necessary
resources for the nuclear weapons complex. That, along
with nuclear command and control and recapitalization of
the triad systems, are essential for maintaining strategic
deterrence, which is foundational to everything else we do inside the Defense Department.

Chairman, you are well aware of the responsibility of the Nuclear Weapons Council to certify NNSA’s budget, and I have a role in providing a recommendation to the Nuclear Weapons Council to that end.

The Chairman: Okay.

Admiral Richard: If there are weaknesses -- and you described one -- in terms of our ability in a timely manner to do that, that is something that I will take up with the Secretary to address how we might be able to do that better.

The Chairman: Why do we not do this for the record? We will just start this discussion going and not try to do it under the timelines we are dealing with today.

So I will go ahead. I had one other area to bring up. Last summer, the Missile Defense Agency canceled their program to modernize the ground-based interceptors that were up in Alaska due to technical failures. And the next generation interceptor then we find will not likely be fielded until 2030. And I think that would be a good thing for you to answer on the record as to what about that gap, can we handle that gap, because everyone up here is going to be interested in that. Okay?

Senator Reed: Well, thank you very much, Mr.
Chairman.

Admiral Richard, I am terribly concerned that there has been no significant effort to extend the New START agreement with Russia. Do you believe that New START treaty gives you critical value in planning strategic concerns based upon on-site inspections and deck relations, and if it is not extended, you will be at a disadvantage?

Admiral Richard: Senator, as you know, New START treaty has been valuable to this nation and to my command. The Russians are largely compliant with it. It does have the benefit of not only limiting the total number of strategic weapons to both nations' benefit, and it has the transparency and confidence-building measures that you just described, all of which has been good for deterrence.

However, it does not address a very large class of weapons that the Russians have a significant advantage in. It does not constrain novel systems, and it is a bilateral treaty.

Ultimately a decision to extend a treaty is a political decision. I do provide best military advice down the lines of what I just offered to my department to contribute to that.

Senator Reed: But if we do not do this, we will lose a great deal in terms of deterrence, in terms of, just as I mentioned previously, signaling for the first time in 40-
plus years there is no arms control regime in the world, and that could lead to proliferation, not just eroded relationships between Russia and the United States.

And thank you, Admiral. I just want to -- in the context of moving quickly.

General O'Shaughnessy, one of the issues that came up in our discussions and also in your testimony is the threat of cruise missiles to the United States. And we are configured pretty well since the 1950s for ballistic missiles, but cruise missiles and other hypersonic weapon systems are more challenging.

Give us an idea of what you think you need to be effective to deal with this cruise missile threat.

General O'Shaughnessy: Thank you, Senator, for highlighting that important threat that we have facing us today as a nation and something that we really have to invest in in order to maintain our competitive advantage and our ability to defend this great nation over time.

Specifically, I think as we look at the way we have been approaching the threats we have been looking and from the ballistic missile standpoint and then cruise missiles, kind of UASs -- and I think we have to look at this more holistically. And really we need domain awareness over our entire territory and the approaches to it. And then if we are able to have that domain awareness with sensors from
the undersea all the way up through space, we can then take that to be able to defend ourselves against all the threats, to include the cruise missile threat that you mentioned.

Some of the things that we are doing right now to get after that, as an example in this year’s budget, we are increasing our domain awareness capability with sensors within the National Capital Region, for example, with our wide area surveillance program. We have money this year for over the horizon radars that will not only be helpful for cruise missile threats but also hypersonic threats. And we also have funding in place for some additional radars to give us the ability to truly see and understand the domain on the approaches to us.

But this is just a start. Senator, what I would say is we have to invest into the future in understanding what is happening in and around our territory and really understanding our ability to have defeat mechanisms that can defeat these proliferated threats such as the cruise missiles.

Senator Reed: Thank you very much.

I yield back all my time.

[Laughter.]

Chairman Inhofe: Senator Fischer?

Senator Fischer: Thank you, Mr. Chairman.
Admiral Richard, your opening statement refers to an increase in both Russian and Chinese nuclear forces. On page 4, it states that China is likely to double the size of their stockpile by the end of this decade. And on page 5, it states that Russia’s overall nuclear stockpile is, quote, likely to grow significantly over the next decade. End quote.

Does our current program of record for modernization expand our nuclear forces?

Admiral Richard: Senator, it does not. We do not seek parity. And it is not only in the statement in terms of what they are going to do, we could also back up and look at what Russia in particular has been doing over the last 15 years to expand and modernize her arsenal, all while we just extended life-extended systems that we already have.

So the recapitalization that we are asking for is one-for-one. We do not seek more. We do not seek a greater number. We simply seek a sufficient number of capabilities to enable us to achieve national objectives.

Senator Fischer: I have been struck by the reception that this budget has gotten. Earlier this week, a “New York Times” column summed up the budget’s investment in nuclear modernization by saying, quote, the President’s spending proposal requests money for a new arms race with
Russia and with China and restores nuclear weapons as central to military policy. End quote.

The truth is actually the opposite of that. There is no policy change, as you stated, that relates to nuclear weapons in this budget. And it is Russia and China that are expanding their arsenals while we are not. Is that correct?

Admiral Richard: Senator, I must confess the whole concept that we are starting an arms race baffles me in terms of no nation has done more than the United States to reduce the reliance on nuclear weapons. No nation has divested more nuclear weapons than the United States has. We have waited 15 years in some cases to the absolute limits of what our systems will go before we simply sought to replace like for like inside our triad. So I do not understand where the concept of an arms race comes in. And you are absolutely correct, ma’am.

Senator Fischer: Thank you.

On page 12 of your prepared remarks, you state, quote, our nuclear deterrent underwrites every U.S. military operation around the world and is the foundation and backstop of our national defense. I cannot overemphasize the need to modernize our nuclear forces and recapitalize the supporting infrastructure to ensure we can maintain this deterrent in the future. I am concerned that the oft-
repeated message of the need to modernize and recapitalize has lost its impact and that collectively we have underestimated the risks associated with such a complex and time-constrained modernization and recapitalization effort. Even seemingly small issues can have a disproportionate impact on the force. We cannot afford more delays and uncertainty in delivering capabilities and must maintain a focus on revitalizing our nuclear forces and the associated infrastructure. End quote.

I really appreciate your candor on this. As you know, we continue to hear calls to slow down, to cut funding, and to reexamine issues that have already been studied numerous times. And I appreciate your clear description of the urgency that we have.

Do you have anything you would like to add to that?

Admiral Richard: No, ma'am, other than --

Senator Fischer: I took the words right out of your mouth.

Admiral Richard: Yes, ma'am. We chose those very carefully to accurately describe the situation this nation faces. These capabilities are foundational to our survival as a nation. It is a great credit that we have been able to take the -- it is a once every other generation responsibility to recapitalize the strategic deterrent. We had wise leaders back in the 1980s who saw the need for
this -- leadership and resources. And we have benefited with no nuclear use for up to 42 years in some cases with particular weapon systems, no great power war. And the return on investment that we achieved -- the submarine is a great example, designed for 30 years. We thought that is what we were going to get. In fact, you wind up getting 42. What a credit to the people that designed it, built it, operated it, that we were able to take it out as far as we can. But in the submarine’s case, we are literally reaching physics and engineering limits such that you cannot extend it. You can only take a piece of high-strength steel, pressurize it at great depths, then take that pressure back off before you just do not want to get in the tube anymore. And so that is the limits that we have reached, and it is our turn to provide that leadership for the next 40 or 50 years to give them the benefits that we have already received.

Senator Fischer: Thank you.

And thank you, General O'Shaughnessy, for your meeting with me yesterday. I would commend to my colleagues that they also contact you to have a classified briefing on what we need to do with our cruise missiles. Thank you, sir.

Chairman Inhofe: Thank you, Senator Fischer,

Since a quorum is now present, I ask the committee to consider two civilian nominations and a list of 871 pending
military nominations. All the nominations have been before the committee the required length of time.

First, I ask the committee to consider the nomination of James McPherson to be Under Secretary of the Army and Charles Williams to be Assistant Secretary of the Navy for Energy, Installations, and Environment.

Is there a motion to favorably report these two civilian nominations out?

Senator Reed: So moved.

Chairman Inhofe: Is there a second?

Senator Fischer: Second.

Chairman Inhofe: Any opposition?

[No response.]

Chairman Inhofe: That does pass.

And finally I ask the committee to consider a list of 871 pending military nominations. Is there a motion to favorably report these 871?

Senator Shaheen: So moved.

Senator Fischer: Second.

Chairman Inhofe: Second.

All in favor, say aye.

[Chorus of ayes.]

Chairman Inhofe: Opposed?

[No response.]

Chairman Inhofe: It carries.
Now, for those who may have come in a little bit late, we are waiving opening statements. We are going to get right to the questions, and we are going to adhere to the 5-minute rule. Thank you very much.

Senator Shaheen?

Senator Shaheen: Thank you, Mr. Chairman.

Thank you both for being here and for your service.

I want to follow up on Senator Reed’s question about the New START treaty because, as he pointed out, we are less than a year from its expiration. We could extend it for 5 years without going through a whole Senate confirmation process. And it seems to me -- while I recognize the concern that you expressed, Admiral Richard, that I have heard from other sources about the fact that it does not encompass a number of other weapons, the fact is we could extend it and work on those other weapons at the same time without losing the important information that we are currently getting from New START.

So I wonder if you could describe how STRATCOM uses information from New START such as through inspections and data exchanges as you look at your day-to-day planning.

Admiral Richard: Senator, so that insight gives us a much better idea of what the threat level is from that particular class of weapon systems are, which enables us to do a very calculated and thorough job of determining
exactly how we deter the use of that, all very valuable and helpful. So I would desire to keep those attributes.

But I am also required to do the same thing on the parts that are not included in the treaty. So better for me if we could down a path to address all of that.

Senator Shaheen: Sure. But if we do not extend New START and it expires next February, you lose that information. Is that correct?

Admiral Richard: That is correct, Senator.

Senator Shaheen: I think this is probably for General O'Shaughnessy. Last August, 33 airmen from New Hampshire’s Air National Guard spent several weeks on a remote Alaskan island near the Bering Sea. I am sorry Senator Sullivan is not here because they were part of a rotating group of airmen and guardsmen who were helping to build a new home for a group of indigenous people who have been displaced due to rising sea levels.

Can you talk about what you see from climate change and what we are doing to try and shore up our infrastructure and to be prepared for the challenges we are going to face as climate change increases and creates more of these kinds of situations?

General O'Shaughnessy: Senator, what I would talk to is the importance of the Arctic and specifically in this case Alaska not only, as you mentioned, with increased
activity and the things that we are seeing and some problems with erosion that are very real -- they are real from both a military aspect, as well as, of course, as you mentioned, the indigenous population.

One of the things that we try to do is we partner, as you mentioned, with organizations that are tied to the indigenous people -- for example, Tulikika and AFN has been a great partner -- because I think we have common challenges of which we might have common solutions. We went to Barrow, for example, and saw some of the erosion as the ice has melted and now the waves are hitting the shore. That affects us and some of our radar installations just as much as it effects the local village. And so we are trying to partner with the local communities to truly understand what is happening and the impacts.

But we also see it because simultaneously this is a critical part for us for the defense of our homeland. If you look at it as an avenue of approach and we see the Arctic as an avenue of approach to our homeland that we need to be able to defend, and we need to be able to operate out of. And therefore, you need infrastructure. You need the ability to actually bring your force in and sustain a force. You need to be able to communicate. You need to actually understand what is happening in that domain and have the domain awareness.
And so these are very similar. We find multiple opportunities in some of the forums that we have led with our partners in both industry, local populations, local communities, all the way down to the villages that we find these common approaches that we might be able to solve. We are working, for example, in communications that might help us with the proliferation of LEO. That would bring communication not only to us as a military but even to the remotest villages.

Senator Shaheen: So as you are looking at preparing budgets for future years, how are you factoring in the cost of those infrastructure needs that we have as we are seeing the impacts of climate change?

General O'Shaughnessy: So what we are doing is we are trying to look at the infrastructure that we need, the infrastructure that we need to be able to defend our nation. And this is actually not just with the U.S. We are working in partnership with Canada, and especially with my NORAD hat on, we are very interested in similar issues that we see from the Canadian front of having an infrastructure in place throughout the Arctic that will give us the ability to defend our nation. And in doing so, we have to have the sustainability of that infrastructure going into the future.

Senator Shaheen: Thank you very much.
Thank you, Mr. Chairman.

Chairman Inhofe: Senator Ernst?

Senator Ernst: Thank you, Mr. Chair.

Gentlemen, thank you for being here today.

Admiral Richard, I will start with you as we continue the discussion about modernization. As has been discussed, the ground-based strategic deterrent will replace the Minuteman III as the sole intercontinental ballistic missile starting about the mid-2020s. And Congress has appropriated the funds to do that for this fiscal year.

But while the GBSD will enter service this decade, the Air Force will continue to sustain the Minuteman III into the 2030s. This is an old program from the 1970s, and I think some of the silos date back to maybe even the 1960s. And I am concerned about failure to modernize with our nuclear deterrent, and I think that in the long run, this will be a lot more costly and makes it a risky gamble with our national survival.

So just if you can, how are we balancing the maintenance issues that will occur as we continue to hold onto the Minuteman III and talk a little bit about that. And are you confident then that as we move into the new system, that the timeline is suitable as a deterrent?

Admiral Richard: Senator, the short answer is yes.

It is yet another example of why we have no margin left in
terms of the need to recapitalize. In terms of sustainment of Minuteman III, I am not sure that it is often recognized the extraordinary levels the Air Force went to to be able to accomplish that. Unlike a submarine, which is designed to have depot level maintenance, the Minuteman III was not. It was designed to serve for a certain period of time and get replaced. And the Air Force went in after the fact and figured out how to take that and get a depot maintenance capability retrofitted into the weapon system that will then enable it to go till the crossover point. I think it is a great credit to the Air Force they were able to accomplish that. And that is what gives me confidence, provided no further delay in GBSD, that this will work.

Senator Ernst: Well, God bless the Air Force, you know, their extraordinary effort. And it just points to the fact, though, that as Congress, we need to be aware of these issues and make sure that we stay on top of it.

General O'Shaughnessy, thank you for being here.

I am going to redirect and talk about something that has not been brought up yet.

At the SOUTHCOM posture hearing, I asked Admiral Faller about challenges with COCOM and interagency coordination to stop the flow of drugs and human trafficking over our southern border and entering into the United States. It is surprising but my home State of Iowa
really sees one of the highest rates of human trafficking, and I know that there are many colleagues here that have those same concerns and same issues in their home States. And we have also felt the pain and the pressure of illicit drugs that enter into the stream in our States.

And so what I would like to hear from you is thoughts on how that interagency coordination is going, the collaboration that you might have with SOUTHCOM, and what are the efforts that we see to push back on some of the flows of drugs and human trafficking?

General O'Shaughnessy: Yes, ma'am. Thank you for highlighting that.

One of the things that we do find is a very strong collaboration amongst the interagency. I think it starts with the Interdiction Committee and that is led, of course, by the Drug Czar and Admiral Schultz as the co-chairs, but it brings the entire interagency together with respect to the counternarcotics, counterdrug, and the transnational organized crime and the aspects of that. And it is a great forum of which we all get together. Admiral Faller is there, as well as myself, to really bring the team together, if you will.

In addition, as you mentioned, SOUTHCOM and NORTHCOM have a great relationship. In fact, Admiral Faller is actually my cousin, as it turns out. So there is a great
relationship there.

Senator Ernst: Okay, good. Sounds a lot like Iowa.

[Laughter.]

General O'Shaughnessy: And we see that we clearly have to work together as we do this.

And so we actually went down together to Mexico City to meet with the Mexican leadership and especially looking at SEDENA and SAMARA and the great work that they are doing to help with both the migration flow and the counternarcotics problem.

And then we went right from there to Guatemala, and we were able to work with the local Guatemalan officials and really see how do we stem this flow and how do we get to the roots to be able stem that flow.

And so I think it is those kind of relationships and working together that is important, but is also important what we are doing on our actual border. And as you know, we are very active with respect to some of the work that we are doing to provide assistance. We are the lead federal agency but we provide great assistance because we see this as a national crisis. 68,000-69,000 Americans killed last year. That is something that we have to be a part of the solution, and we are. We flew over 5,000 hours in support of that last year, over 2,000 man-days of intelligence analysis. It is one of the things I think we bring as the
military, that we can bring that expertise and bring that right to our interagency partners. And so we continue to find those areas where we can bring that value to the interagency process.

Senator Ernst: I appreciate it so much. Thank you, gentlemen.

Thank you, Mr. Chair.

Chairman Inhofe: Senator Blumenthal?

Senator Blumenthal: Thanks, Mr. Chairman.

Thank you both for being here and thank you for your service.

Admiral, thanks particularly for your enormous contribution to our submarine force. I assume you continue to share the Navy’s strategy and support it to achieve 66 submarines by 2048.

Admiral Richard: Senator, I do.

Senator Blumenthal: I am somewhat disquieted, even dismayed by the apparent change of pace in construction reflected in this budget, dropping one of the submarines that was planned for this year at the Electric Boat shipyard. Do you share that concern that we may be falling off the necessary pace?

Admiral Richard: Senator, one, I am pleased that Navy is maintaining the highest priority on the Columbia class submarine, which directly supports my mission set. And
beyond that, I think that is just indicative of the
difficult budget choices that Navy and the whole Department
of Defense are having to make.

Senator Blumenthal: But those budget choices reflect
priorities, and the Virginia class -- and I agree with you
completely about the Columbia class and there is a lot of
progress in the budget in that regard. But the Virginia
class is essential to our undersea superiority. Is it not?

Admiral Richard: Senator, the Virginia class
submarine is the finest submarine in the world.

Senator Blumenthal: And we want to continue to build
more of them.

Admiral Richard: Absolutely, sir.

Senator Blumenthal: In that regard, I want to ask
about hypersonic missiles which in your testimony you say,
quote, ensure our deterrence and conventional power remains
strong in the future. Are you satisfied with the
investment that we are making in hypersonic missiles, given
the Russians and the Chinese investing so heavily in them?
And that can be a question for both of you.

Admiral Richard: Senator, what I will start with,
because there are two ways to answer -- there are two
aspects to your question. One is offensive use of
hypersonics by us, plus there is a defensive piece. And I
remind everybody the Russians have publicly reported that
they have hypersonics on alert now. And so this is a very real thing.

My command has had a longstanding requirement for conventional prompt strike. Hypersonic technologies would be an ideal way to go accomplish that, and I think that enables me to better deter threats to this nation. Also, I have responsibility for global strike already inside the Department of Defense, and I think we would be an ideal command because we have concepts, command, and control ready to go to use that to the best advantage.

Senator Blumenthal: Are you satisfied, though, that we are investing sufficiently in all of the aspects of hypersonics both offensive --

Admiral Richard: Senator, I am. I was actually very pleased in the priority. It is in line with the National Defense Strategy in terms of the priority that this budget submission puts in that and a couple of other technical areas.

Senator Blumenthal: Are you concerned about a developing potential arms race in hypersonics?

Admiral Richard: Senator, no. Again, it is do you have sufficient capability, technologies to meet our national objectives. And I think we are on pace to do that.

General O'Shaughnessy: And, Senator, I would
highlight on the defensive side, one of the key aspects I think is the space sensing layer and the importance that we invest in that and continue to invest, which we are and this budget includes that. But we need to continue to invest in that space sensing layer because as we go from a ballistic missile to a hypersonic glide vehicle, for instance, it really changes the problem of maintaining custody of that weapon system throughout its entire flight, and the best way to get at that is the space sensing layer. So I strongly endorse continued investment in that for a defensive.

It is also about awareness because unlike a ballistic missile where you know where it is going, the hypersonic glide vehicle -- you do not necessarily know because it has the energy and the ability to maneuver. And so we have to be able to keep track of that. And so I can give the warning to Admiral Richard so he knows where that is going from the NORTHCOM and NORAD perspective.

Senator Blumenthal: Well, I agree with you that it introduces a potential game-changing technology and new challenges in terms of both defense and deterrence and offense. And I would like to ask for more information perhaps in a classified setting if we can arrange a briefing.

I am also going to submit for the record, because we
are adhering strictly to time limits, questions on the threats posed by cyber. I understand there was a recent cybersecurity conference that involved the National Guard, which I would like to learn more about, and also troops at the border. So I will be submitting questions for the record on those two topics.

Thanks, Mr. Chairman.

Chairman Inhofe: Thank you very much.

Senator Cotton?

Senator Cotton: Admiral Richard, I want to return to the budget for the National Nuclear Security Administration. The President’s budget has it at just under $20 billion. Are you confident that that is a sufficient number to proceed with nuclear modernization?

Admiral Richard: Senator Cotton, the short answer is yes. There is not a lot of excess margin that number, but it is sufficient.

And I will also offer that I have a very close relationship with NNSA. I just spoke to Ms. Gordon-Hagerty actually yesterday in a continuing series. And I would point to that as an example of us making sure that she has the right resources.

Senator Cotton: And if you take the warhead modernization program on the one hand and you take the triad modernization -- the delivery systems on the other
hand, that is also a number that is satisfactory to keep those two things integrated over the next several years?

Admiral Richard: Senator, yes, again with no extra margin. I would throw in nuclear command and control as the third piece of that that also needs to be synchronized.

Senator Cotton: I would as well given the fact that we have woefully -- woefully -- undercapitalized our nuclear command and control and infrastructure over the last many decades.

The one thing I hear you say, not much excess margin. To the extent that Congress does not meet that budget number of just under $20 billion, would we be introducing more risk into those programs for every dollar that we go below it?

Admiral Richard: Senator, yes. And in fact, we are close enough into this recapitalization that we can also give you a number where you start to see points of no return, and they are not that far off. They are in the early 2030s, that if we do not recapitalize now, we simply lose the fundamental infrastructure and capacity that if we cross over, you cannot recover for like a decade no matter how much money you put at it. Those points are starting to come into view.

Senator Cotton: General O'Shaughnessy, I want to talk about the Wuhan coronavirus. And it is the Wuhan
coronavirus, not some politically correct name that a bunch of politically correct bureaucrats at the World Health Organization have come up with, to give you a sense of their misplaced priorities.

You were recently directed in your role as Commander of the Northern Command to begin prudent planning for a potential pandemic. I think it is very prudent to begin prudent planning. So could you talk us through what the role for Northern Command would be in such a situation and the extent to which you have already begun planning or even exercises for that scenario?

General O'Shaughnessy: Yes, sir. So, Senator, what we are doing first and the immediate actions we have taken have been in support of Health and Human Services with respect to housing some Americans coming home. And I think right now we have over 600 still in our facilities in support of both the State Department bringing their folks home, as well as HHS. That has been going extremely well, and we appreciate the close coordination through the interagency to make that happen. It also is tied to 11 airports, of which we have facilities that are on standby in coordination with both the Department of Homeland Security, as well as HHS and CDC, as you would imagine. And the ongoing collaboration continues to make sure we are part of the support structure that we would have here.
within the United States to be able to respond to this virus.

Now, to your point about the global aspects of this and our role as NORTHCOM, we are, as you would expect, doing the appropriate prudent military planning to ensure that we are able to respond. The types of things that we are doing is, for example, we are running a BTC every single day and that includes representatives from all around the globe, all the geographic combatant commands that are in there to make sure that we see what is happening within their regions and that we are centrally managing that from our headquarters in NORTHCOM.

We have plans in place, as you would imagine, that look for what is the scope that this could go to potentially and making sure that we are not caught by surprise.

And so both our role that we are doing in the day-to-day is very much informative to the role that we are doing for the planning and making sure that we are prepared for the worst case scenario that might happen and make sure we are doing that globally not just here in the United States.

Senator Cotton: Thank you, General. I think we are still at only 14 cases in the United States that have been confirmed by public health authorities.

General O'Shaughnessy: That is correct, sir.
Senator Cotton: Let us hope that remains the case. I think we are in a much better position than we were a few weeks ago when we had 20,000 people landing in the United States from mainland China every single day. So I commend the President and the administration for the travel ban put in place.

But there are still around a million and a half Americans who traveled from -- or a million and a half persons who traveled from mainland China starting in mid-November until the travel ban went into place. So we have even a fraction of what China reported, just overnight, 14,000 cases, which I should add were not newly discovered cases or the result of new scientific breakthroughs, but a political decision to finally start getting a little bit closer to the truth. And obviously, it is going to put a lot of emphasis and stress on the mission and the planning that you and your people have been doing. So thank you for that.

Chairman Inhofe: Senator Heinrich?

Senator Heinrich: Admiral Richard, congratulations on your assumption of command, and I would remiss if I did not invite you back to Sandia and Los Alamos. I know you have been there before.

But during your confirmation hearing, you agreed that restoring plutonium pit production at Los Alamos is the
military’s top priority. However, in your answer you also stated that there are issues. And now that you have had a little time to work with NNSA and get up to speed on that, I would like to ask you to articulate what the specific issues and impediments are that you see in meeting the current goals.

Admiral Richard: Well, Senator, when I talked about the weapons complex infrastructure, the plutonium pit would be the first thing that I would call attention to in terms of our nation’s ability to generate that number of pits that is essential simply for the sustainment programs that we desire to go do. And the concern actually again was funding. Step one is to provide adequate resources. I am very confident, particularly in the near term at Los Alamos, that with adequate funding we can deliver 30 pits per year by 2026, and I continue to work with NNSA and Ms. Gordon-Hagerty to make sure the longer-term plan is also -- I have equal confidence in that.

Senator Heinrich: One of my concerns with regard to that is if we are going to do pit production at two locations and the intellectual capital is currently pretty much all at Los Alamos, not losing, not poaching that capital to a second facility before we actually get job number one done. Do you share those concerns?

Admiral Richard: Well, Senator, not only do I share
them, but it is in the weapons complex and other areas writ large, do we have enough talent to be able to accomplish what we have to go do.

So I work with Ms. Gordon-Hagerty closely on her stack of responsibilities with regard to that, as well as we do a number of things at U.S. Strategic Command to bring talent into the strategic deterrence area writ large. I can give you a longer answer for a question for the record. But, for example, we have an academic alliance with over 70 colleges and universities where we are trying to encourage people to come in and develop expertise in national security strategic deterrence, and the weapons complex benefits from that.

Senator Heinrich: As you have articulated, we are pushing up against very thin margins on all three parts of the triad. What are the consequences for your command if any one of those legs experiences a significant delay? And if that were to occur, how would you rebalance?

Admiral Richard: Senator, one, I thank you for that question.

I think we all well know the commanders of Strategic Command have been repeatedly asked that question over time. And part of how we got to the point that we are at was by doing operational mitigations to make up for lack of earlier decisions to recapitalize.
We are very close to turning that rheostat about as far as it is going to go. So the last remaining things that I have -- and you can refer to them as a hedge. Sometimes that is more thought of for the weapons complex. But the triad itself was built with an overlapping, interlocking set of attributes that are very complementary, and each leg makes up for the weaknesses in the other leg.

I would get to the point where I -- basically that is called inter-leg hedging. I would have to start taking the attributes of the triad apart, and I will lose attributes along the way. So I can cross-cover with one piece of the triad on another, but I may lose the survivability of the ballistic missile submarines. I may lose the flexibility and signaling for the bombers. That is about what is left for us to do.

Senator Heinrich: Moving on real quick, I do not have a lot of time left. But you are familiar with my interest in hypersonics and more broadly in just maintaining the R&D focus to have a third offset, whether that is through the lens of hypersonics or directed energy or, for that matter, artificial intelligence.

We are seeing a big bump in this budget in the area of hypersonics. It is a $3.2 billion overall number. It is a 23 percent increase. How is that money going to be spent so that when you are scaling, that you are still efficient
and spending it wisely?

Admiral Richard: Well, Senator, that question would be best answered by the services that are responsible. All of them are working on it. I am pleased with the progress. And I am working to make sure that when that capability is delivered, I am ready to receive it with concepts of operation and command and control, being able to immediately put it to use defending the nation.

Senator Heinrich: Thank you, Chairman.

Chairman Inhofe: Senator Scott?

Senator Scott: First, thank you both for your service.

General O'Shaughnessy, I think we have all been following what Communist China has been doing around the world. I am from Florida, and so everybody in Florida is clearly watching what is happening in Latin America, especially Communist China’s involvement in Venezuela but even in other countries with their investments. What they are trying to do is build relationships and make people dependent on them.

How does Communist China’s involvement in Latin America impact our national security?

General O'Shaughnessy: Well, I think you bring up a good point because sometimes it is easy to forget about our own neighborhood, as we look at this global competition
that we are in with China. Admiral Faller has done a really good job I think of highlighting that and the consequences thereof and the focus that we need to have not only within the Department of Defense but as a nation to that.

Of course, we also see it, for example, in the Bahamas, which is even closer to home, where we see China is trying to get an influence with one of our closest neighbors and great partners.

And so I think we have to be cognizant of it. We have to think about it from the aspect of what are the implications to us from a national security standpoint, and then what are the implications to us just as a nation as we see this global competition playing out in our own hemisphere close to home.

Senator Scott: Thank you.

Admiral Richard, do you think we have enough -- whether it is Communist China or Russia in Latin America, do you think we have the right amount of assets there and the right amount of focus there, or do we need to put more focus based on what they are doing to try to have an impact close to our borders?

Admiral Richard: Senator, one, I applaud the Chairman of the Joint Chiefs’ focus broadly on global integration, and when you take a global view of the competitions that we
have, it drives visibility into those areas. So I think
the Department is moving in the right direction to look at
the totality of what we need to be concerned about and not
just focus on one geographic region.

Senator Scott: So Canada is about to make a decision
on 5G on Huawei. It is my understanding that the military
establishment in Canada has said that the Trudeau
administration should not go forward with doing any
business with Huawei with regard to their 5G.

How would that impact our relationship with Canada if
they do?

General O'Shaughnessy: Senator, what I would say is
clearly we see the security implications of 5G not only
with Canada but with our allies and partners and even here
at home. Clearly we see this as a national security
implications at large, and making sure that we, with all
our allies and partners -- that they all go into any
negotiations and ultimately procurement of infrastructure
with clear eyes to truly understand what are the risks and
then what can we do to mitigate those risks.

And so I think as we do continue to work with Canada
as a close ally and a partner, just like we have done with
other allies and partners, we need to make sure that we are
sharing all the intel that we have, which we are, and
making sure that we provide them all the things that they
need to make the proper decision and an informed decision
to fully understand the risks that they take and ultimately
the implications, to your point, that we might have here at
home with what we can share with them, how we would share
with them, and what the implications would be.

I think as we look at Canada with the NORAD aspect of
that, that becomes even closer to home because of our
binational relationship we have with them and making sure
that we understand the rippling effects of potential
security concerns relative to Huawei, 5G, and we see as
very real concerns.

Senator Scott: So knowing the risks especially like
with NORAD, what should Congress be doing to try to make
sure that Canada makes the right decision and to follow the
lead of their military establishment that Huawei should not
be a partner for 5G?

General O'Shaughnessy: I think the continuation of
what we are doing already, which is the great conversations
and dialogue that we are having with our partner in Canada,
again sharing the intel so that we make sure that they
understand fully the risks that they might be taking on so
that they can make a decision, their own sovereign decision
that they will make, but it is an informed decision fully
understanding the risks, the consequences, and ultimately
what the rippling effects might be as a result of that from
a national security, for their own security, and then for us together as a binational organization within NORAD as an example, and as we are tied with North America very much so the rippling effects through the binational, bilateral relationship.

Senator Scott: Thank you.

Chairman Inhofe: Thank you, Senator Scott.

Senator Manchin?

Senator Manchin: Thank you, Mr. Chairman.

I thank both of you for your service.

I can only repeat to you what I have heard in talking and listening to people with expertise, and this is how they have kind of explained the Cold War coming to an end and where we are today and if we are on top of our game or if we are ahead of our game. Basically the United States in the 1980s took the position to be very aggressive in some of the weapons we designed. Russia could not keep up with what we were doing. It kind of forced them into a situation where they had to evaluate could we defend ourselves against America with the superior weapons they have designed. That is what was given to me, along those lines.

Now, if you take it from the Cold War forward, have we still stayed on top of our game? It sounds to me as if hypersonic weapons and other future weapons have been more
advanced by other countries such China, even Russia coming back into the scene in a real aggressive way, maybe North Korea to a certain extent. And are we going to be able to deter them from moving forward because of our superiority, or are we going to be playing defense to catch up?

So however you can help me with that to understand it better.

Admiral Richard: Let me start that in terms of, first, I go back to that was a choice by China and Russia to develop those weapons. We certainly could have done that and we did not. I think their actions in many cases speak louder than what they tell us in terms of what their intentions are. And again, this is a competition just like any other military competition, and I am confident that this nation has the ability to produce the capabilities we have to have. And for deterrence, again the basic equation has not changed. Can I deny you your aim or can I impose a cost on you that is greater than what you seek? I can do that if necessary.

Senator Manchin: Admiral and General both, the evaluation was given to me about the Cold War and the end of the Cold War. Is that accurate? We outpaced them so far that they had to come to the realization they could not compete and defend themselves?

Admiral Richard: Senator, what I would offer, I would
break that into a conventional piece and a strategic deterrence piece. And on the conventional side of the house, in general I would say that that is in the main correct. And what we were able to do on the strategic deterrence side is hold strategic deterrence. The whole goal on strategic deterrence is for nothing to happen, and we were successfully able to do that. So I would recharacterize that slightly in terms of a conventional force advantage that we achieved.

Senator Manchin: General?

General O'Shaughnessy: Senator, what I would add to that, though, as you fast forward to today, what we do see is our adversaries really investing in some of that conventional capability that does have the ability to hold us at risk and we have to, therefore, be able to defend against it. What I am referring to, for example, is the submarine that has very good capability that carries cruise missiles, some of the long-range aviation like the bombers --

Senator Manchin: We have the USS West Virginia. I have been on it and spent some time with them. I appreciate it. You do an excellent job.

General O'Shaughnessy: And so I think from our perspective we think a lot from the Cold War about the nuclear aspect and deterrence. I think as we reach today,
we also have to factor in the conventional aspect of this and having peer adversaries that have the capability to reach out to us at home in ways that we did not have in the Cold War that we have to factor into our defense.

Senator Manchin: My final question would be basically you are looking 30 years down the road -- at least 30 years down the road -- for the life of the weapons and the defense that we are doing with our triad. Are we looking at their capabilities and where they are looking 30 years down the road too and if they might be to the point to where they are advancing quicker, willing to make more sacrifices, spend more money to become an equal super power?

The One Belt, One Road, as far as I am concerned, is China wants to be the only super power left by 2050. I hope Americans understand that, and I hope we in Congress understand it. That is what I am concerned about. And I am determined in my life and for my children, whatever I can do and whatever decision can prevent that from happening because this is the greatest country on earth. There is no doubt what their mission is, what China’s mission is.

Admiral Richard: Sir, not only do I agree but I will give you a quick example. Columbia is going to be in service until 2080. The Navy and the submarine force --
and there are Air Force equivalents to this too -- have
long had very extensive programs that are looking 30 years
down the road, and they are physics-based -- they are not
necessarily intel-based -- and looking at anything that
could be developed into a threat so that we in parallel
start working the countermeasure to that. And I have great
confidence in those programs. They have served us well.

        General O'Shaughnessy: And in my time, I would just
quickly say that that is why the NDS implementation, which
very clear focuses on this great competition and the
competition with China in particular and Russia drives, us
to make sure we do invest in those right resources that
will allow us to compete appropriately going into the
future, Senator.

        Senator Manchin: It is my confidence in military
leaders like yourselves that gives me the confidence for my
children and grandchildren. Thank you.

        Chairman Inhofe: Senator Blackburn?

        Senator Blackburn: Thank you, Mr. Chairman.

        And thank you for your thoughtfulness and coming
before us today.

        I want to talk a little bit about the hypersonics
issue, circle back to that, because of Arnault Engineering
Development Complex which is there in Tennessee, and of
course, they are very much engaged in some of the work that
we are trying to do as we look forward. I actually had some people in the office yesterday, and we discussed this and Arnault’s importance to the Air Force.

But one of the things that continues to come up as we talk about hypersonics is personnel and a trained workforce. And, General O'Shaughnessy, I would love to hear from you. Do you think we have what we need to meet the demand as we move forward, and how do we go about backfilling that? How do you change recruitment in order for us to be able to backfill that?

General O'Shaughnessy: Yes, ma'am. Thank you for highlighting that.

One of the things we look at, first, there is a capability but then there is also a capacity. And if you look at our entire defense industrial base, one of the things I think we have to really focus on is are we able to both have the technology and to make sure we are taking advantage of the emerging technology in the appropriate ways, but also do we have the capacity to turn that into actual weapon systems that can be relevant on the battlefield.

Senator Blackburn: I am glad you mentioned that because I had noted in 2017 at a hypersonics conference -- I think the Chinese had like 250 papers, and it was 10 times what we had had.
So, Admiral Richard, as you look at this, are you attracting and training and retaining the experts that are going to be needed in order to meet the demand?

Admiral Richard: Ma’am, the short answer is you are highlighting a challenge for the department across the board. It is not only in hypersonics that you talk about, but I could point to any number of other areas where we face an equivalent challenge.

I had been very pleased in the efforts particularly by the services to reach out, develop, attract, and create this industrial base that we are going to have to have not only for hypersonics but for the capabilities writ large. They are working very hard on it.

Senator Blackburn: Then human capital is one component, but then facilities, areas like Arnault Engineering are important. So where are we on the sufficiency of our facilities and having what we need there?

Admiral Richard: Again, I applaud service efforts to go after the capacity and the industrial base physical plant necessary to achieve the results that you are talking about. They are working very hard on both pieces of that.

Senator Blackburn: Then highlighting another area, let us move over and talk about electromagnetic spectrum. And as you know, this is something where I have spent a
good bit of time working on how we proceed in this area, how we utilize expertise when it comes to working in a contested EW environment. Do we have that? Are we moving forward with the right type work, the visualization, the modeling, so that we are growing the expertise in this area?

Admiral Richard: So, ma’am, let me start that.

Senator, one, I applaud your interest and your leadership in terms of electromagnetic spectrum. That is yet another domain not unlike space and cyber that was permissive and we had freedom of maneuver for a very long period of time, and that has changed. So it too has to have a certain level of expertise. The services are working very hard on that.

For example, if you would allow me to have a Navy flashback for a second. I am a joint commander now but just left the Navy. The submarine force, which I recently commanded, has been an emergency flank wide open trying to develop that expertise to the point that we have restructured the electronic technicians’ rating to elevate greater numbers, better training. And I could go into more detail on that. You see all the services working like that right now.

Senator Blackburn: Let me ask you this. Are we at a point where we should develop a concept of operations for
EW?

Admiral Richard: Yes, ma'am. You hit on a couple of things that we have to continue to work on. There are numerous concepts of operation. To be able to knit them together in a whole is --

Senator Blackburn: Right, but we need one overriding strategy.

Admiral Richard: One overarching piece --

Senator Blackburn: And if you are reworking training and looking at a different utilization of expertise, then it seems to me we would be well served to move to one concept of operations that would enable each of our military divisions.

Admiral Richard: Senator, one, I not only agree, but I would also highlight another point you made earlier that a key piece of that concept is going to be electronic battle management, electronic warfare battle management, the ability to visualize. We cannot be statically assigned anymore in our use of the RF spectrum. We have to be dynamic. We have to maneuver, and we are going to have to be able to visualize and understand it to accomplish that.

Now, the concepts will start from there.

Senator Blackburn: Thank you. I yield back.

Chairman Inhofe: Senator King?

Senator King: Thank you, Mr. Chairman.
General O'Shaughnessy, one of the questions I ask quite frequently in these hearings is what does China want, and I want to ask you pointedly, what does China want in the Arctic?

General O'Shaughnessy: Well, thank you, Senator, for allowing me to highlight a little bit of the Arctic and the importance of the Arctic. And as it relates to one of our global competitors and potential adversaries, I think it is important to look at what is their desire in the Arctic.

What we see initially is clearly an economic desire because of the natural resources there, and they want to be able to take full advantage of those resources.

But we also see activity, for example, the Xuelong, one of their supposed scientific research vessels that potentially could be the precursor to increased submarine activity and those things from a more nefarious aspect.

So we are looking at it clearly to understand what is it they are trying to do, but from our perspective, we are concerned about that as an avenue of approach. We are concerned about that as --

Senator King: They are clearly highly interested. I was at an Arctic conference in Iceland a couple of years ago. There was a 40-person delegation from China, and they have designated themselves as a near-Arctic nation, which is like Australia saying -- you know. But there they are.
Now, let me follow up. There was a sentence in your presentation that got my attention. Finally, in the past year, we observed signs of nascent but growing strategic cooperation between China and Russia, including a combined bomber patrol last July and Chinese participation in multiple Russian exercises. I find that very important and concerning. Expand on that a bit please.

General O'Shaughnessy: This was not particularly concerning the Arctic, but I will get back to the Arctic in the answer.

What we do see is --

Senator King: But the Arctic is one of the places where they may well find common cause.

General O'Shaughnessy: Absolutely, and that is where I will move back to where I have some concern there.

One of the things we do see is Russia actually has more advanced operational capability with respect to the longer-range bomber force, and as we see them fairly routinely flying in and around our -- Adak as an example. As we see them working with Russia and China together, we have concerns as we just look at that capability, and if they were to work together, they could potentially advance China’s ability in that regard.

Clearly in the Arctic, we also see the potential if they work together, but I think there is a little bit
different approach because clearly Russia has concerns about China infringing on them from an economic standpoint. Yet, nonetheless, we see Russia with some very significant --

Senator King: Russia is being very aggressive in the Arctic in terms of icebreakers, airstrips. I mean, that is a big part of where they are putting some of their major investments.

General O'Shaughnessy: Exactly, and so that is where I was going with this answer is that we can actually see the potential for China to leverage Russia’s capability and capacity and understanding to develop China’s --

Senator King: Do you have adequate sensors to determine if something is coming over the top?

General O'Shaughnessy: We do not, sir.

Senator King: And that is clearly a gap that needs to be addressed.

General O'Shaughnessy: It is, Senator.

Senator King: This hearing seems to be the hypersonic hearing, and I think that is important. And the budget is important, the additional resources. But we are behind. Russia and China are fielding hypersonic missiles now, and are we not 4 or 5 years from there? And my concern is that some of that research should be going into defense because right now hypersonics are really a nightmare weapon for an
aircraft carrier, for all kinds of targets. So are we going to put some money into how to defend ourselves against hypersonics, Admiral?

Admiral Richard: The short answer is yes, and I think you see the budget priorities that are being developed to do just that.

But I will also go back and offer particularly for Russia and China, we are defending today by deterrence. I can impose a cost on them that I think they will find unacceptable to deter their use of that or any of their other novel weapon systems.

Senator King: How do you deter? If we get into a conflict and they -- I mean, I do not understand deterrence when they use a hypersonic to take out an aircraft carrier in the strait between Iceland and Scotland.

Admiral Richard: Sir, I would have to go into a classified session to give you details of options that I could provide to redress that.

Senator King: Well, I just hope that 23 percent budget increase -- part of that goes to defense.

Finally, very briefly, can hypersonics be nuclearized? Can a hypersonic missile carry a nuclear warhead?

Admiral Richard: Senator, absolutely, yes.

Senator King: So is this really triad 2.0? It is not a ballistic missile. It is not a submarine. It is not an
aircraft. Or it could be, I guess, all three of those.

But clearly we need to think about hypersonics in terms of the triad, in terms of our strategic deterrence.

Admiral Richard: Absolutely, I will offer that it is not our policy or intent right now to nuclearize hypersonics. Other nations can choose to do what they wish in that area. And, yes, this is the competition. This has a lot of similarities to the introduction of the intercontinental ballistic missile back in the late 1950s and early 1960s, and we are ready to address it.

Senator King: Thank you. Thank you very much, gentlemen. I appreciate your testimony.

Chairman Inhofe: Senator Cramer?

Senator Cramer: Thank you, Mr. Chairman.

I thank both of you for your service and for being here.

I was going to start, Admiral Richard, with a question about GBSD, and you answered it beautifully for Senator Fischer and in your statements. But I will just emphasize the importance of doing all we can to keep it on track, if not even escalate a little bit. And that is reflected, of course, in the budget and I appreciate that.

I want to ask both of you some questions about the standing up of Space Force, starting with you, of course, Admiral Richard, given the unique relationship between
STRATCOM and space and space capabilities, and first, generally ask you, are you comfortable with how it is going in terms of the standing up of Space Force? And what and how are you communicating with Space Force in terms of helping them be successful in training, equipping, manning the force?

Admiral Richard: Senator, I would draw a distinction between Space Command, the joint operational command, and the Space Force. My relationship is much more with Space Command. And, Senator, I would describe it as we are the proud parents. We were where those responsibilities came from. I am delighted that the decision the nation and the Department has made. It is putting necessary attention to our freedom of maneuver and action inside space. General Raymond and I speak frequently. We are setting up a set of war fighter talks here in the very near future. And I am encouraged across the board that it improves mission performance overall, particularly his responsibilities as the sensor manager, looking across missile warning, missile defense, and space situational awareness. The nation wins because we are more effectively utilizing our assets.

Senator Cramer: Very well said.

General O'Shaughnessy, so again same, basically because obviously the relationship between Space Command and STRATCOM is special, but yours is awfully important as
well.

General O'Shaughnessy: Yes. Thank you, Senator.

I am excited about both the Space Force and U.S. Space Command. I think we are already starting to see some of the benefits of this. And I think we as a nation are very fortunate to have a great American, Jay Raymond, leading both of these at this time and really chartering the course that these will take going into the future.

Specifically for us for homeland defense, from the NORTHCOM role we are very much tied from the U.S. Space Command side relative to those sensors. The very sensors that Admiral Richard mentioned are the ones that we are using for our own homeland defense.

And the second aspect is we look at warfighting as space, a domain of warfighting, that occurs. And we are talking about that in really relevant ways, and clearly from a homeland defense aspect, that has significant consequences.

And then from a U.S. Space Force, excited about the potential there, as that has now been stood up, of how that is going to allow us to really focus like a laser on space going into the future.

Senator Cramer: Well, just following up a little bit on that, one of the challenges I think, of course, is actually manning, training, and equipping this force. And
I think the services all play a role in that, which I think is somewhat unique to the way Space Force has been designed to be successful. I certainly look forward to anything that you can add to that discussion as well.

As I run out of time, I want you to answer that if you have more to say about it, and then actually ask you about our northern tier bases -- of course, I have three of them in North Dakota -- and what we ought to be looking for in terms of capabilities to meet a potential Arctic conflict and to make sure that we are in sync with the strategy.

General O'Shaughnessy: Well, I would start first on the Space Force. Clearly the intent is it is not just a pulling away from just the United States Air Force but actually looking within the Department of Defense where are our space experts and how do we actually bring them into the Space Force as well.

That aside, relative to your question on the Arctic, we are actually excited about some of the things that we are actually doing right now in your State to support our Arctic operations. Clearly we see the future in our defense of our nation is very critically dependent on our ability to operate in the Arctic, our ability to have domain awareness. So some of the things we are doing with over-the-horizon radars are critically important for us to have that domain awareness, that understanding of what is
happening on the approaches to our nation and in cooperation with Canada through North America is critically important. And whether you are talking hypersonics -- and the over-the-horizon radars have great capability against the hypersonics so we can maintain that custody -- or whether we are talking about the cruise missile threats and the bombers, those are all played because of some of the work that we are doing within your State.

Senator Cramer: Well said, and I appreciate both of you and yield back. Thank you, Mr. Chairman.

Chairman Inhofe: Senator Peters?

Senator Peters: Thank you, Mr. Chairman.

Admiral Richard and General O'Shaughnessy, your command areas play a very important role in defending the United States from the threat of ballistic missiles, and I note that the Missile Defense Agency’s budget request discusses a layered approach to homeland defense as the underlay to the current ground-based mid-course defense system that protects the continental United States. Specifically the MDA request discusses Aegis and THAAD as potential options for a layered homeland defense approach. But I am also interested in the potential for transportable ground-based interceptors or other systems that can serve as an underlay to existing GMD system and add flexibility and depth in a cost effective way.
As you know, MDA has completed an environmental impact statement of three locations to host a potential third GMD site, including two fields at Fort Custer in Michigan, which were identified as the least expensive and least environmentally impacted site.

But the question for both of you is, can you please discuss how you view the potential of a layered homeland missile defense system, and what role would the three locations, which MDA has already studied, play in this layered system?

General O'Shaughnessy: Senator, I will start with this.

First, I will talk to one of the reasons that this demand signal is there, as we look at the cancellation of RKV and the resulting timeline between now and when an NGI, next gen interceptor, could be fielded. We have very significant concerns about that from NORTHCOM. We have been working closely with both MDA, as well as OSDR&E, Dr. Griffin. And I am pleased to announce now that we are bringing time in as a variable within that discussion. And so what we are trying to do -- we cannot wait 10 years to get the next gen interceptor fielded. We are trying to bring that left, and so I think we will see, as the RFP actually gets released, we are actually looking to bring time left and get that fielded faster. And I think we are
in a good position there.

But that brings you to part of that mitigation, as the threat continues to advance, is this layered defense concept, which we very much support. And you see money in the budget this year.

The initial concept, to your point, was to bring in as an underlayer the ability to use, whether it be a THAAD modified potentially with additional boost capability or whether it be an SM-3 IIA missile that we could use in that regard is existing capability that we could bring into the homeland defense architecture to provide that ballistic missile defense.

But the follow-on to that is, okay, we will understand using that existing capability, but what is the capability we could actually develop that might not be what we need to deploy overseas but we could use specifically built for our homeland defense. And that gets into the point where the next iteration of the layered defense might be individual weapon systems that are designed to be fielded within the continental U.S. and in Alaska to defend the United States using maybe the technology that is in our current systems but portrayed a different way.

And I think all the work that has been done with all of the continental interceptor sites will go into potentially where we could put those, how we do those. So
I think it is just part of the information that we now have as we look at this new approach with both the current GBI, the NGIs, this layered defense with the current system, additional system informed by some of the work that we have done to include within your State.

Senator Peters: Great. Thank you.

Admiral, do you want to add anything?

Admiral Richard: Just very quickly. Missile defense is deterrence by denial. We have a very clear national policy on what it is designed for and what it is not designed for. And so everything General O'Shaughnessy just talked about not only allows him to execute his mission responsibilities, but it is a part of the tailored deterrent strategies that I am required by the Nuclear Posture Review to develop. And so that is precisely the path I think we need to go down. I would throw in sensing is also a key piece as both of us have talked about.

Senator Peters: One final question. I am the ranking member on the Emerging Threats and Capabilities Subcommittee within this committee, and one area that I have been focusing on are some of the ethics associated with the military application of artificial intelligence and automation in particular. And I know there are a number of ethical concerns related to these weapons. And I think the dilemma is represented by the threat that you
both identified in your written statements of Russia’s nuclear-capable autonomous underwater weapon, the Poseidon. And I know what the threat is is all up to debate to talk about.

But if we face time-sensitive threats in the U.S., are we at a tactical disadvantage if we require human involvement in our decision chain where our adversaries may not do that?

General O'Shaughnessy: Senator, I will take that. And what I would say is what we have to get away from is what we now have as either the human in the loop or sometimes the human is the loop in some of our systems to a human on the loop. And what that will allow you to do is actually make those decisions at the speed of relevance because what can and should be done by machines and by AI and leveraging that will be done by that. But it will identify those key areas where we humans have to be the ones ethically, morally making those decisions. And so I think human on the loop is a concept we need to apply to leverage that capability while not preventing ourselves from operating at the speed of relevance.

Senator Peters: Thank you.

Chairman Inhofe: By the way, we have been notified the first vote is underway. So we are going to try to get to everybody here. Let us try to keep our remarks brief.
Senator Hawley?

Senator Hawley: Thank you, Mr. Chairman.

Thank you, gentlemen, for being here.

Admiral, let me start with you. As you know, we are the proud home in Missouri of the Whiteman Air Force Base and the B-2 bomber. Let me ask you about the Air Force’s budget request and the funding cuts for the B-2 defense management system. Does that decision cause you any concern about the B-2’s ability to operate in high end threat environments to the end of its service life?

Admiral Richard: Senator, I think it is a great example of some of the difficult decisions that we are going to have to make in trading or balancing near-term risks for long-term risks. And so overall, the Air Force is way ahead on the bomber program. Bomber road map I think it is referred to I endorse. I think that is a very thoughtful approach, and the loss of the defensive management system -- we will accommodate that risk for the greater gain the Air Force is going to provide overall.

Senator Hawley: That sounds like a yes to me. You think that there is a risk that it will. There will be some detriment to its ability to operate in high end capacity.

Admiral Richard: There is but I can manage it.

Senator Hawley: What else do we need to ensure that
the B-2 maintains its ability to operate in those environments if this decision goes forward?

Admiral Richard: That is part of the planning that I have to do. So we will use operational mechanisms to compensate for technological abilities of the aircraft. I retain full confidence that the B-2 can do the missions that I will ask it to do.

Senator Hawley: Great. Well, I will be following up with you on that.

General, let me turn to you for a second. Russian bombers make regular visits to our coastlines we know. What role would you say that the F-15EX could play in protecting our homeland against these and other threats in the decades that are coming?

General O'Shaughnessy: One of the things that we do see is it is not only the increasing frequency but also the complexity of how they are maneuvering and the missions that they are flying. Some of it has to do with where we would need to go to intercept them based on the length of their missiles that they carry, the range that the missiles now have. For example, the S-23 is an example of a long-range missile. What that means is we want to intercept them further out. We want to go further so that we can not only get the missiles. We want to hit the bombers so that they never actually get to launch them.
And so the F-15EX brings us that. It brings us that extended range that we can get with the F-15EX, as well as a much significant improvement in the number of missiles it can carry. So we see that from a homeland defense aspect. We see that new platform as being well suited for the homeland defense role in both our counter-cruise missile defense, our counter-airborne threats such as the Russian bombers.

Senator Hawley: Great. That is great to hear.

Admiral, let me come back to you and let us talk a little bit about nuclear policy. Are you confident that Beijing would stick to its announced no-first-use policy if there were a conflict with the United States?

Admiral Richard: Senator, I think I could drive a truck through that no-first-use policy.

Senator Hawley: And why do you say that?

Admiral Richard: In other words, I am not trying to be flippant on a very serious matter. Right? The number of situations where they may conclude that first use has occurred that do not meet our definition of first use -- I should back up. They are very opaque about what their intentions are. They are very different from the Russians. We have very little to go on in terms of how they interpret that relative to what we see from the other competitor.

So what constitutes first use? Where might they say
we are actually not -- that is our territory. Therefore,
it does not count as an attack against you.

And more broadly, the Soviet Union had a no-first-use
policy. I do not think we took great comfort in that
either.

And so the declaratory policy things are not helpful
in my mission area to deter.

Senator Hawley: That is very helpful and I think is a
great point for those who would advocate a no-first-use
policy on our end as to why that that would be I think a
very serious strategic mistake.

Let me give you, Admiral, still on the same subject an
opportunity to clarify something. A senior U.S. official
recently was reported as saying -- and I am quoting now --
the sole reason the United States has nuclear weapons is to
prevent others from using nuclear weapons. That does not
seem to be exactly what our declaratory policy is. Can you
clarify what our declaratory policy is?

Admiral Richard: So the Nuclear Posture Review lays
it out very clearly in terms of our strategic capabilities
are designed to deter a strategic attack on the United
States, which can be nuclear, but I think it wisely
acknowledged the fact that it now may be possible to have a
strategic attack against our vital interests that is non-
nuclear, particularly in space and cyber.
Senator Hawley: Right. So we will only consider the employment of nuclear weapons in extreme countries to defend our vital interests or those of our allies or partners, and those circumstances could include, as you just said, significant non-nuclear strategic attacks. Is that correct? Am I getting that correct?

Admiral Richard: That is correct.

Senator Hawley: Great.

Admiral, I have got another question for you about the W-76 TAC 2. I will submit that for the record because I am about out of time.

Thank you, Mr. Chairman.

Chairman Inhofe: Thank you very much.

Senator Jones?

Senator Jones: Thank you, Mr. Chairman.

And thank you both for your service. In particular, Admiral Richard, as one Alabama native to another, thank you for your service. Alabama is very proud of you and so is the University of Alabama Roll Tide. I just thought I would throw that in real quickly. I know you appreciate that.

The other thing that folks in Alabama are particularly proud of these days is our 117th air refueling wing, which as you know, won the prestigious STRATCOM Omaha Trophy this past year. And I want to take the opportunity to
congratulate Colonel Scott Grant, the commander there -- he has just done an amazing job -- Command Chief Master Sergeant Davis and the other airmen. I think sometimes our National Guard unit is going to get overlooked in the scheme of things, and I so much appreciate them winning that award. It is the first time a guard unit has won that.

Can you talk a little bit about the critical role that the unit plays in the strategic deterrence mission that we have?

Admiral Richard: Senator, I just would highlight. That is a very competitive award, and it speaks highly of that wing’s ability to compete in that broad a competition.

Air refueling is vital. I am not an airman, but no gas, no bombs. And so it is critical to my mission set for the bomber leg to have adequate tanking capacity. General O'Shaughnessy will tell you here in a second it is equally critical in his areas for homeland air defense. And it is something we pay very close attention to in terms of having capability in the right priority to meet those missions.

Senator Jones: Great. Well, thank you.

This past Monday, the President’s budget request and the briefings that we got indicated that the Air Force intends to divest several aging aircraft, namely 17 B-1 bombers, 16 KC-10 tankers, 13 KC-135 tankers. And to replace the tankers, the budget asks for 15 KC-146’s, but
those are not going to be fully operational for another 3
years.

So with the delay in the operational capability status
of the KC-46’s, does this in any way -- does this
divestiture of these legacy tankers pose any kind of threat
to the reliable in-air refueling capability of the joint
force? And I will ask either or both of you that question.

General O'Shaughnessy: I will start, Senator, and say
in this year’s budget, I think our United States Air Force
made some difficult decisions in how do we get to the
future faster. This is just one of those decisions where
we are trying to divest yourselves of legacy platforms
while moving to the future, in this case the KC-46. And so
while, yes, there will be an impact in the short term to
the availability of tankers, we will be able to mitigate
our way through that. We still are working closely,. In
fact, I talked to the TRANSCOM commander just yesterday
about this. I believe we will be able to mitigate that
going forward. But it is crucial that we are able to get
to the KC-46 and multiple other modern platforms that the
Air Force is trying to get to.

Senator Jones: Great. Well, thank you. Thank you
both for being here.

Mr. Chairman, in the interest of time, I will yield
back. Thank you.
Chairman Inhofe: I appreciate it.

We will now recognize Senator Sullivan. At the conclusion of his remarks, we will be adjourned. Senator Sullivan presiding.

Senator Sullivan [presiding]: Thank you, Mr. Chairman.

Thank you, gentlemen, for your service.

General O'Shaughnessy, I particularly appreciate your testimony. It was probably the most comprehensive, insightful description of our strategic interests in the Arctic that I have seen. In your testimony, you say the Arctic is the new front line of homeland defense. It sounds like you are saying that the Arctic and Alaska are no longer a sanctuary from which we can safely project power, but it is more of a battle space area. Is that correct? And what are the implications from your mindset as the NORTHCOM Commander?

General O'Shaughnessy: That is exactly correct, Senator. And as always, I find myself well aligned with you relative to the importance of the Arctic. It is not only from the strategic location that it is, but now, to your point, it is clearly an avenue of approach to our great nation. And as we look at what --

Senator Sullivan: That impacts the whole nation.

General O'Shaughnessy: It impacts the whole nation,
absolutely.

And so as we look at now Alaska where -- I will just use the Russian long-range aviation. Whether it be hypersonics or whether it be the cruise missiles that can be launched from that long-range aviation, we clearly see that avenue of approach as being critical. So we have to, one, have awareness of what is going on in that space, and then we have to be able to defend in that space. And the time that will be required to respond is short because of the pure geography.

And so I think what we really need to think about in Alaska is how do we invest to have that domain awareness, having the right sensors and ability to understand what is happening, but also the ability to defend immediately and what are the systems that we could invest in that would allow us to have that persistent defense in Alaska because it is key terrain that will be important to us as a nation in any conflict whether that be with Russia or China going forward.

Senator Sullivan: Thank you.

Let me go on to a little bit more detail. You know, it seems from whether it is Secretary Pompeo’s speech in Finland at the Arctic Council, major publications like "New York Times," 60 Minutes -- you know, there is a lot of discussion about the great power competition in the Arctic.
I appreciate Senator King highlighting that in his questions for you.

You know, unfortunately, this committee has observed that the Pentagon is the organization that sometimes seems the furthest behind, with the exception of certainly your great advocacy, General O'Shaughnessy.

In your personal opinion and the advocate for the capabilities in the region, what specific capabilities are you advocating for to ensure that we can both protect the homeland in these avenues of approach that you talked about, but also to continue to project power from Alaska to not just PACOM but EUCOM, STRATCOM? And if you can talk on JPARC and even OCONUS KC-46 deployments, that would be helpful as well, in terms of capabilities.

General O'Shaughnessy: Thank you, Senator.

First, I would say we have to complete the next generation interceptor. We have literally holes in the ground right now that we need to fill with capabilities. So we need to bring that left, and we need to bring that as fast as possible.

We need to augment that with additional ballistic missile capability that we could put in Alaska, whether that be SM-3 IIA’s, whether that be potentially THAAD deployments there. We need to bring that into Alaska. And we need a sensing capability that will be persistent, that
will be steady state, that will always be there. We have
the technology today. We just have to deploy it to Alaska.

The second thing I think we need -- and I would
applaud the Air Force for moving the additional fifth gen
aircraft, the F-35’s, to Eielson. It is now truly the
fifth gen center of excellence. And therefore, you need a
place to train. And so I think continued investment in the
JPARC range is critically important not only for fifth gen,
but for the Arctic. And Arctic Edge upcoming exercise we
have with great participation -- for example, from the
marines --I think is critically important because the joint
force needs to train in Arctic conditions.

I make the observation that we can deploy a force
anywhere, all over the world, and we can train that force
very quickly and have them out the door in a matter of
days. You cannot do that to the Arctic. If you are not
training, if you do not have the right equipment, and if
you are not versed in operating in the Arctic, you will not
effectively be able to operate there. And our adversaries
are operating there, and therefore, we need to be able to
operate there as well. To your point, it is now a battle
space, and so we need to be able to operate in Alaska in
the Arctic in cooperation with Canada from the NORAD side.

And so I think continued investment. The tankers are
important because it is a strategic place where you can
actually get to the European theater quicker than you can
even get to the South China Sea from Alaska. And
therefore, having that as a center where we have robust
tankers is important, as well as the entire joint force I
think just continuing to be able to operate.

Senator Sullivan: The Secretary of Defense said that
if you collocated the over 100 fifth gen fighters that we
are going to have in Alaska with the OCONUS deployment of
KC-46’s, it would show that our adversaries -- that we
would have extreme strategic reach whether in PACOM or
EUCOM. Do you agree with that?

General O'Shaughnessy: I do believe there is a
powerful synergy of bringing together the fifth generation
with additional and modern day tanker capability.

Senator Sullivan: Let me ask one final question for
both of you. Actually just two real quick ones.

In our office call, you talked about your number one
unfunded priority for some type of space-based
communications for the Arctic. Can you just briefly touch
on that?

General O'Shaughnessy: Thank you, Senator, for
allowing us to highlight that.

One of my main concerns in the Arctic is
communication. Basic communication that we normally use
satellites for becomes challenged above about 65, even
harder above 70.

One of the things we find is the commercial technology is there. And so we have been working with commercial companies over the proliferation of LEO and finding ways that we might be able to bring that ability to have essentially broadband connectivity anywhere, for example, within Alaska. And that is a huge implication for us to be able to operate if we can connect the force in areas that today we cannot connect the force even through our commercial partners.

And so whether it OneWeb or whether it is Starlink, we think, for example, in some of our partnership with Starlink over the last several experiments that we have done, for example, at Eglin where we are able to show our ability to connect that force with their satellites -- this is not hypothetical. This is satellites that are in orbit today.

Senator Sullivan: But it is your number one unfunded priority because that is not just protecting the comms in the Arctic. That protects the whole homeland in terms of the avenue of approach concern that you talked about.

General O'Shaughnessy: That is exactly right, Senator. It is my number one priority to have Arctic coms, and I think the proliferation of LEO and a Starlink or a OneWeb type solution is the way to get it fastest.
Senator Sullivan: Final question for both you, gentlemen, and it is a just a quick answer on this. But I have been frustrated with Under Secretary Griffin. You know, I think we are seeing really smart guys in the Pentagon making dumb decisions. Let me give you one. It was already briefly touched on.

This committee has worked really hard in a bipartisan way with the administration fully supporting it to build up our missile defense. There has now been a decision recently, despite the fact that we just built 20 new silos at Fort Greely, to make those empty for the next 10 years. I cannot think of something that is unequivocally more -- well, that is just going to harm our readiness in terms of missile defense. I mean, there is no dispute about that. 20 empty silos for 20 years.

How do we fix that gap, fill that, and correct what to me seems like just kind of a boneheaded decision at the upper levels of the Pentagon?

General O'Shaughnessy: Senator, first I will say that the unfortunate decision to cancel the RKV was the right decision that was made at that time --

Senator Sullivan: But do you agree to have 20 empty silos for 10 years?

General O'Shaughnessy: No, sir. What I am very dissatisfied with is it is going to take us 10 years to
actually produce the next gen interceptor. And so we have
been working very closely with MDA and Dr. Griffin
personally. I met with him on Monday. And I am pleased to
announce that we are going to bring this left. The way we
will have to do that is we will have to find some trade
space, but we have to put time as an important part of this
because our adversaries are not waiting. Our adversaries
are building capability and capacity. And so we have to be
able to respond. So we are going to insert time into this
so that we are going to have trade space developed so we
can bring missiles to put, interceptors to put into those
holes sooner.

Senator Sullivan: Thank you.

Admiral, any views on that?

Admiral Richard: I would just say that General
O'Shaughnessy described that very well. We both have a
role in setting the requirements for missile defense.
Those requirements are valid, and General O'Shaughnessy
just laid out how we are going to meet those.

Senator Sullivan: Well, I believe this committee will
be supportive of any role that we can play in support to
help fill that gap, which I think is important for the
nation’s missile defense overall.

Thank you very much, gentlemen. We all appreciate
your testimony.
This hearing is now adjourned.

[Whereupon, at 10:57 a.m., the hearing was adjourned.]