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Nuclear Policy and Posture in the Biden Administration

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Pranay Vaddi:
Good morning. Thank you all for joining us today to discuss Nuclear Policy and Posture in the Biden-Harris Administration. I'm Pranay Vaddi a fellow in the Nuclear Policy Program at the Carnegie Endowment for International Peace. Today is February 5th, the first day of a new lease of life on the New START Treaty. The Biden Administration quickly took action and its first two weeks to extend New START by five years. We chose today for this event, knowing the importance of this occasion, not just with the extension of the New START Treaty, but as to what comes next.

The Biden Administration, Russia, China and the rest of the world will be looking at what's to come in US nuclear policy. The Biden folks will likely begin a review of nuclear policy in the coming months. The presumptive deputy secretary of defense Kathleen Hicks hinted at this fact during her testimony this week before the Senate Armed Services Committee.

In *Proportionate Deterrence: A Model Nuclear Posture Review*, George Perkovich and I lay out a series of analytical findings and policy recommendations, which we hope will stimulate a much-needed debate on where US nuclear posture should go from here. I'm very excited for our discussion today, and I'm joined by two esteemed accomplished scholars.

Michèle Flournoy is co-founder and managing partner of WestExec Visors, a former co-founder and chief executive officer of the Center for a New American Security, where she currently serves on the board and authored numerous publications relevant to US foreign and defense policy approaches to Russia and China, issues at the heart of our nuclear policy discussion today. Michèle also served as the undersecretary of defense for policy from February 2009 to February 2012.

George Perkovich is the Ken Olivier and Angela Nomellini Chair and vice president for studies at the Carnegie Endowment for International Peace, with expertise on nuclear strategy and nonproliferation issues, cyber conflict, and coming up with new approaches to international public private management of strategic technologies with numerous articles, long form publications, and books on these issues. And once upon a time, he worked for a prominent US senator who recently became president. Without further delay, George, I'll pass the shoe to you to introduce the main concepts of our report.

George Perkovich:
Great. Thanks, Pranay. Thanks, those of you who are joining online, and especially Michèle, for joining us. I'm going to try to summarize 105-page report in 10 minutes. If I get carried away, it may go a minute or so longer, but I will plow through it in hopes we will then have a good discussion. Pranay and I conduct a long discussion and an analysis of all of the facets that go into nuclear strategy, recognizing that there are numerous challenges and concerns, and that the perspective that one brings to it depends on where one sits.

For a think tank, it's easier for a think tank to do this than it is for people and governments, we recognize that. Just as we recognize that it's probably impossible to speak persuasively to all US and international audiences and to address both the need for reassurance against a wide range of new threats, short of war, and the need for deterrence of the kind of war for which nuclear weapons are relevant. Nevertheless, our model review promotes principles of proportionate deterrence that we think are quite defensible for any state.

If Russia, China and North Korea follow the same principles and logic and their nuclear policies, we would acknowledge them to be reasonable. For any country whose adversaries have nuclear forces that can retaliate in kind, proportionality means acknowledging that it would be insane to use nuclear weapons against threats that are less destructive than nuclear war would probably be. This is basic wisdom and national interest. We think that the declaratory policy, employment guidance, force posture and approach to arms control that we recommend are in the US national interests and that of allies and partners.

These proposed policies are designed to reclaim the diplomatic high ground, vis a vis Russia and China, and to incentivize them to work reciprocally with the US to strengthen rather than weaken strategic stability. We begin by exploring who poses threats that require the US to retain a reliably survivable nuclear deterrent. Today Russia poses the pacing threat. The US and Russia together have 91% of the world's nuclear weapons stockpile. China is increasingly challenging, and North Korea may be the one most likely to pose the dilemmas of nuclear first use to an American president.

Escalation from regional conventional war is the central problem to be deterred and/or manage with each of these countries. The challenge is growing more difficult as new forms of coercion, interference and internal affairs and fait accompli territorial acquisition appear. The difficulty is compounded to the extent that nuclear weapons and their command, control and communication systems are becoming entangled with the operation of conventional and cyber forces. The aim of nuclear policy, and of foreign and defense policy more broadly, should be to raise the threshold of everyone's use of nuclear weapons or anyone's use of nuclear weapons.

At the same time, to prevent bad actors from crawling under that threshold and spreading termites or setting fires or cutting off the water supply to the house. Nuclear weapons are disproportionate tools for preventing these more common and bedeviling sub-threshold threat. But if the tenants of the building above the threshold get into fights with actors who are attacking them from beneath, escalation is the dominant problem. That is the main nuclear threat or challenge is how to convince adversaries that their use of nuclear weapons would not make the United States and its allies give up. This is only credible if we have capabilities and plans to somehow keep nuclear exchanges limited, which in turn requires planning and executing off ramps from conflicts.

Turning to doctrine and declaratory policy, we highlight the success of US administrations, including Donald Trump's, that have committed to follow the law of armed conduct. I always trip that up. To follow the law of armed conflict in their nuclear conduct. We argue that US leaders should make clear that they

would consider using nuclear weapons only when no other means could stop an aggression that is as harmful to the US or its allies as nuclear war would likely be. Since no one knows whether a nuclear war can be kept limited, it would only be sane or justifiable to use nuclear weapons to stop an existential attack, that is one that threatens the nation's viability.

We discuss how what we call an existential threat policy is superior to the more ambiguous current policy of threatening to use nuclear weapons in extreme circumstances to defend the vital interests of the US allies and partners. We think an existential threat policy is also more credible than no first use or sole purpose would be and look forward to talking about that in the discussion. Turning to weapon employment policy, we argue that the US should reverse the logic that leads to disproportionately large and destructive arsenals in the US and Russia.

This means the United States must move away from seeking first strike capabilities and plans to destroy Russia's and China's nuclear deterrence. The desire to gain such advantage is understandable, but Russia and now China will do what they must to prevent it from happening. Arms racing and crisis instability result. The ensuing costs and risks are disproportionate to the stakes involved in the regional conflict scenarios that are most likely to trigger war in the first place, and they divert resources from more useful capabilities.

For many reasons, absolute priority should be placed on upgrading command, control and communication systems and ensuring that some nuclear deterrent force would be immune from cyber-attack. To further reduce risk of inadvertent, mistaken or disproportionately escalatory use of nuclear weapons, the US should do away with plans to launch US nuclear weapons under attack, as we explore in chapter three. We also describe there an alternative approach of deciding under attack, which again we can elaborate in the discussion.

Turning to force posture in particular weapon systems, we recommend continuing with the B21 bomber, the Columbia SSBN programs, and exclusively nuclear arms long range standoff or air launched cruise missile. All of these are key to a survivable nuclear deterrent. We recommend retaining the B61 nuclear

bomb in Europe unless NATO asks for its removal, which we assume would only happen in an arrangement with Russia to reduce weaponry and build mutual confidence in Europe. We recommend canceling plans for the nuclear armed sea launch cruise missile, such a weapon is not necessary and would detract from more important naval roles and regional conflicts.

Now we conduct a long discussion and analysis of the low yield warhead that has been put on the Trident ballistic missiles. We conclude that even though that weapon was deployed without adequate answers to important questions, it should not be withdrawn now, if doing so would undermine NATO and Asian allies' confidence in extended deterrence. Moreover, we see no gain in removing the new W-762 warheads if they would be replaced by their higher yield predecessors. If targets can be destroyed by a five kiloton warhead, it would be wrong to use a hundred kiloton warhead against such targets.

We also conduct a long analysis and discussion of intercontinental ballistic missiles, including in an appendix, and I hope we'll get into that in the Q&A. But our bottom line is a three-part recommendation. The US should pause on building a new ICBM, the so called ground based strategic deterrence. It should independently assess how the Minuteman III could be extended. Meanwhile, the US should seek negotiations with Russia to significantly lower the number of operationally deployed strategic nuclear weapons and warheads, especially those that are vulnerable because they are on silo-based missiles.

Now if such negotiations fail, then the US could decide to go ahead with a new ICBM, but it shouldn't do it before trying to eliminate the need for those weapons in the first place. One stumbling block obviously in such negotiations with Russia could be missile defenses. Advocates of missile defense do not fully acknowledge that their programs drive Russia and China to develop and deploy offensive countermeasures, which generally are cheaper than defenses. There's a conundrum. Are the benefits of maintaining or adding to missile defenses against North Korea or Iranian threat to Chinese regional missiles greater than the costs of doing so?

And by cost, we mean both expense and the increased likelihood that Russia and China will counter by adding a line to bypass missile defenses. We argue that US interests and those of allies and the rest of the world would be better served by exploring whether tradeoffs can be negotiated between transparency and potential limitations on some US missile defense capabilities in return from Russian and Chinese reductions or constraints on some of their current and prospective offensive capabilities.

Finally, arms control. Rather than being guided by deterrence logic alone, the organizing principles and goals of arms control should be to reduce the probability of escalatory warfare and to physically bound the potential damage that would occur if nuclear deterrence fails. This requires reducing US and Russian nuclear forces far below the numbers allowed under New START. Beyond that, our report contains a long list of other arms control and confidence building measures to pursue with Russia drawing from work that Pranay and James Acton are doing.

Now, we recognize in all of this that both sides, Russia and the US, have a lot of mistrust to overcome, due to Russian cheating on past violations and to the US tendency not to ratify treaties that have been negotiated or to withdraw from those when new technologies come along, and the US seeks superiority again. The US and its allies and partners also share interests in encouraging China to affirm in words and deeds its long standing, comparatively restrained, approach to nuclear weaponry and potential use. In order to motivate China even to explore the possibility of arms control discussions, Washington must demonstrate willingness to address China's concerns about certain US offensive and defensive military capabilities and intentions. Our report offers several concrete suggestions of topics for US-Chinese dialogue, and again, we're happy to discuss that in a few minutes.

Overall, to shift the burden of international nuclear disarmament politics away from the United States and onto Russia and China, President Biden should declare the United States' willingness to reduce nuclear weapons to the lowest level Russia will accept with parallel limits by China. More globally, the US could

demonstrate that it takes the disarmament obligations of the nuclear nonproliferation treaty seriously by designing a prototype verifiable nuclear disarmament regime to encompass all states. The US should then invite international discussion and debate of this prototype and ask other nuclear armed states to do a similar presentation of model disarmament regimes.

No other nuclear armed state has offered such a model. This, in my view, is one reason why international debates on nuclear policy and disarmament at the official and unofficial levels are often light on substantive details. Now I realize I've only provided headlines and subheadings of our report and of these issues. The report's, as I said, 105 pages long, so I assure you, there's plenty of analysis and argumentation for those who want more. In the meantime, Pranay and I welcome comments, questions and critiques here and by email, and by other means in the coming weeks. But we're especially grateful to have Michèle here to provide her short take on what we're talking about. Michèle, I turn it over to you. Thank you.

Michèle Flournoy:
Hey, George, Pranay, thanks so much for including me in the discussion today. I really want to commend you both for what I think will be a very valuable contribution to the debate. It's a reminder of the really important role that think tanks play in our policy ecosystem by generating new intellectual capital, new ideas for policymakers and administrations, especially new ones just coming into office.

I wanted to start by just noting that this Nuclear Posture Review is going to be happening in a very unique context or set of circumstances. The first thing is we have to acknowledge fundamental shifts in the geopolitical environment with the rise of China, even as other threats like Russia and North Korea persist. At the same time, we're going to see an intensifying competition for US resources, given other priorities like getting the COVID pandemic under control, the need to invest in US economic recovery. All of that is going to place some downward pressure on the defense budget. I don't anticipate draconian cuts, but I do anticipate the budget top line flattening.

At the same time, as that resource pressure, we see a growing and very real sense of urgency in the Pentagon about the need to invest in the non-nuclear and emerging technologies and capabilities that will be absolutely critical to the US military maintaining its technological edge and its ability to deter competitors like a rising China in the future. At the same time, you see almost across the board a need to recapitalize our nuclear deterrent as systems age out and need replacement. And all of this has a huge price tag attached to it.

So all of this together is a recipe for a very challenging Nuclear Posture Review and some very hard choices ahead for the Biden administration. Whenever strategy is constrained by resources, which is almost always the case, it's really about where to prioritize and where to accept and manage a degree of risk. So I think your report rightly defines the objectives of nuclear deterrence narrowly, as deterring threats that can't be deterred by other means, with a focus on deterring Russia as the pacing threat for thinking about the size and shape of our own nuclear forces.

But I also appreciate the emphasis you place on preventing escalation of regional conflicts to the nuclear level. When you turn to declaratory policy, too often those discussions are very narrowly focused on just two well-known alternatives, the ambiguity that we've seen previously and historically in US declaratory policy that talks about only considering the employment of nuclear weapons in extreme circumstances to defend vital interests and so forth, versus No First Use Policy. I really appreciate your effort to broaden the alternatives that are worthy of examination, and particularly, your inclusion of what I think is a new idea, which is this notion of an existential threat policy, declaring that the US would use nuclear weapons only when no visable, sorry, no viable alternative exists to stop an existential attack against the US, its allies or partners.

I'm not sure that's the right answer. But I really appreciated your effort to broaden the set of alternatives beyond the traditional either/or. I think that will help enrich the debate. I hope it will enrich the debate inside the administration on declaratory policy. Unemployment policy again, I would foot stomp your

emphasis on the need to ensure the survivability of our nuclear command and control and communication systems to buy time for verifying facts and making sure the President can make a smart decision under a lot of pressure.

I too, am very interested in hearing a debate about Admiral Winnefeld's proposal about decide under attack as an alternative to launch under attack. Here again, I think that's worthy of being considered in the NPR. With regard to modernization, the metaphor I like to use is the department's going to have to fit 10 pounds of program into a five-pound budget bag.

So literally every dimension of the nuclear modernization program, given its price tag, and given its importance will be carefully, carefully scrutinized and scrubbed. The real question that's going to be on the table is given the need to accelerate and scale the adoption of emerging non-nuclear technologies to shore up deterrence of powers like China and Russia, can we achieve a safe, reliable, effective and secure deterrent at a lower cost? That really is going to be the central question of the NPR. In that context, I think you rightly identified the programs that are going to receive the most scrutiny and the factors in play in each case, as you mentioned, the B-61, the low yield W-76 warhead, the nuclear SLCMs, and the ICBM leg of the Triad and GPSD in particular.

So I think that you're right in that that's where the debate will focus. I think there's a lot of strong internal support and bipartisan support for things like the B-21 bomb or the SSBNs and the nuclear outcome. You also rightly point out the very important interplay between our strategic nuclear forces posture, and those of our rivals, and our ballistic missile defense posture. I personally would like to see the US engage in strategic stability talks individually with Russia on the one hand and China on the other, to really look at these issues in detail, and to see if we can increase our confidence that we would not get into a situation of inadvertent escalation or unnecessary escalation. In addition to nukes and missile defenses, I would also like to see cyber included in those discussions because I think some of the greatest strategic threats we could face in the future could be from cyber-attacks on things like critical infrastructure.

Let me just conclude by saying now that's New START has been extended, hooray. A very smart and strategic move by the new administration. I would actually like to see the us explore further arms control first with Russia, not only a follow on to New START, as you suggest, but also negotiations focused on non-strategic nuclear forces and arsenals in and around Europe. I, like you, hesitate to support any unilateral moves in that regard. If we're going to look at those, that posture in Europe, I think we want to make sure that we're getting something for it from Russia and negotiating shared limitations in that theater. But all in all, let me just say, again, I applaud the report. We may have some areas of agreement and disagreement on particular recommendations. But I do think it's a very helpful contribution to the upcoming NPR. I hope that folks in the new administration will read it and pull some new ideas, creative ideas from it. Thanks.

George Perkovich:
Thanks, Michèle.

Pranay Vaddi:
Thanks, Michèle. Thank you, George. So we're coming up close to Q&A time here. But I thought I would take the opportunity to ask you both a question, hopefully have an interesting discussion. As George mentioned, one of the highlights of the report here is that it's focus on managing the threat of escalation from crisis or conflict in either region of the world. Michèle, I know you've written and spent a lot of time thinking about the challenge that China presents in the Pacific to the United States and its allies.

George, you and I have talked a lot about and written about how that looks in Europe as well as in Asia in our report. I'm wondering if each of you could expand a little bit on your remarks with respect to Asia and Europe? What's the right combination of capabilities? How much is alliance cohesion going to be dependent on US military strength? How much should the Biden Administration seek to strengthen political ties with allies versus what the Trump Administration may have done, which was more focused on steel and swords as opposed to perhaps a better alignment in policies among the democracies? I was hoping to

tease out more of the political cohesion aspect of alliance building that I think will be really important to the Biden Administration. Why don't we start with you, Michèle? Thanks.

Michèle Flournoy:
Sure. Well, let me focus on Asia, and I'm sure George can talk about Europe. So I do think the name of the game in the next 10 to 20 years will be ensuring that we can deter Chinese coercion and aggression at non-nuclear levels as well as nuclear levels. I think that deterrence always depends on both a competitor or an adversary's view of our resolve and our alliance cohesion and also our capabilities. The good news is I don't think either Beijing or Washington wants to get into direct conflict with one another, certainly not a nuclear conflict with one another. The bad news is that we don't understand each other very well.

I think Beijing right now, the most popular narrative in Beijing is one of US decline. If you watch news in China, right now, it's a continuous loop of the January 6 attacks on the Capitol. It's race riots, it's a democracy in trouble. It's a democracy that is not handled COVID well, that's in economic trouble, etc. It's this constant narrative decline. The risk is that the Chinese really come to believe that, it could cause them to miscalculate and pursue more aggressive posture and policies.

So first thing is we have a lot of work to do at home in terms of getting our own house in order, democratically, but also economically. But second, it means that we really have to restore strong alliances abroad. I do think the Biden administration will have a bumper sticker of by, with and through allies. This is going to be a major focus of recovering a firm footing internationally. I think it's a correct focus.

Then adding to that, we've got to really clarify after we come consultant and come up with a common approach with allies, we really need to clarify our resolve. What is it that we're committed to defending and protecting in the Pacific region? We've got to convince Beijing that we're making the investments necessary to maintain the capabilities to underwrite those commitments. So I think there's a

lot of work to be done on deterrence. It starts at home, it extends to our allies and partners. It also will require some targeted capability investment.

George Perkovich:
I just would concur with Michèle about, well, almost everything I think she said. Most importantly, starting with home, especially in the relationship with China. I mean, China's a rising power, it's a rising society. We've got so many things that we have to rebuild here- healthcare system that works, education, infrastructure, all of that, and our political economy and a sense of unity- all the things that she said, that has to be an absolute priority, especially in relation to China.

With Russia, I think the problem is a little different because Russia is not ascending. I would argue, part of the challenge we have with Russia is that Putin and the people around him get at some level, Russia's not ascending. You look at the demographics, nobody wants to move there. The young people, they want to move out, it's a natural resource-based economy, so what they're trying to do is level down, bring others down.

That poses a very different challenge because vis a vis Russia, the United States and Europe have, in a sense, more to lose than Russia does. Russia's kind of exploiting that to try to bring everyone else down, interfering in internal affairs, all of that. So you need a Russia strategy, which isn't a nuclear strategy, it's how do you deal with a Russian state and leadership that doesn't play by rules often and feels like it wins when others lose.

The challenge there is, if you retreat, it emboldens people like that, all right, because they go after weakness, anyway, I won't make a metaphor, it emboldens them. But if you fight back like they're fighting, it's stupid, because you have more to lose. So, you have to find this kind of medium ground, which I think begins, as you alluded to Pranay with alliance cohesion. So political cohesion amongst the states in the West to continue to be happier, more prosperous, better run, more reflective of the highest human values so that they continue in a sense to ascend and show that Russia can't bring them down. That's not a military problem.

Now, on the military side there, again, there's sub-conventional problems. It's cyber, it's political interference, it's mafia, it's all of that, which nuclear weapons aren't going to solve. We have to be clear about that. The challenge, though, is removing nuclear weapons won't solve them either. So we have to figure out these other means of doing this and not kind of overspend ourselves. I think that's doable because I think the Russians also have, well, they made investments in their new nuclear weapons capabilities when they had a lot more money, price of oil was much higher, they were much better shape. Now they're like others, not in such good shape and maybe more amenable to arms control, if we can put missile defense and other things into the mix. Thanks.

Pranay Vaddi:
Thanks, Michèle and George. Why don't we go to audience questions? I'll start off with an easy one. So, we have a question from YouTube noting recent comments by Admiral Richard, the Chief of STRATCOM. "Admiral Richard recently said nuclear war between the United States and China or Russia is a real possibility. We cannot approach nuclear deterrence in the same way as we have in the past. It must be tailored and evolved for the dynamic environment we face."

Now, there's a lot in that statement. One, what do you think of his assessment? Two, what does that tell you about how the military is looking at China and Russia as a nuclear deterrence challenge versus how they may be thinking about the broader deterrence challenge, including conventional and other non-nuclear deterrence challenges that each country represents?

George Perkovich:
Do you want to go first, Michèle, or do you want me to?

Michèle Flournoy:
Go ahead and I'll embroider on your answer.

George Perkovich:
Okay. What Admiral Richard said, the quote that you ... Is what almost all of his predecessors have said. So I thought we were tailoring deterrence for decades,

and that we are always evolving our approach. Similarly, that the adversary is always changing, it's got to be more fine-tuned. I'm always amused. I shouldn't be flip about it. But I mean, I can go back to McNamara changed everything, and then Kissinger came in and ordered everything to be changed under Nixon, and then Schlesinger changed everything.

Then Frank Miller, and Lee Butler changed everything. Then Jim Miller and General Keller, I think actually did change a lot, and then 2013 guidance was quite different. So they all made these changes. But what's interesting is the premise each time was, wow, we really have to tailor and change things. Then it's done, and still four or eight years later, people come in and say, "Wow, we really need to tailor and change things." So what the admiral said is nothing new really.

Michèle Flournoy:
Yeah, I guess I was making a different assumption behind his words which is I do think that we're in a period where miscalculation with either China or Russia, I mean, the risk of miscalculation of getting into conventional conflict that we did not intend is very real, I would say even higher with China than with Russia right now. Because particularly with China, we have not negotiated the kind of rules of the road, confidence building measures, transparency agreements that we did eventually put in place with the Soviet Union.

We don't have an incidence at sea agreement with China. We don't have clarity, clear understandings between us on Taiwan, what's acceptable behavior around Taiwan, as we're just witnessing in the last couple of weeks. So there's a very real risk of miscalculation of getting into it. I don't think we understand particularly China very well in terms of their escalation calculus. So I think it is true to say that we could very quickly find ourselves in a conflict or in a crisis where suddenly nuclear threats are being made, and we're just astonished that we're even at that point. So I do think we have a lot of work to do to shore up deterrence in a non-nuclear way, put brakes and blocks in place that would slow or halt escalation and to shore up the nuclear dimension of deterrence as well.

Pranay Vaddi:
Thanks, both. Michèle, I'll just add your previous comment. As you stated earlier, I think the reasonable first effort of the administration would be to embark on these strategic dialogues with each country and to really explore the nature of the deterrence relationship as its evolved in the past 10 plus years. Our next question and maybe, George, you'd like to start with this one, because it is relevant to our report. Jeff Wilson, colleague of yours out here in the non-government community, wanted to go back to W76-2, just curious about the tradeoff of having less powerful warheads, like the low yield, Trident-D5 deployed, versus the concern that deploying those types of weapons could lower the threshold for nuclear use.

George Perkovich:
I think it's a genuine question and problem. To me, I can start kind of more categorically and then get into that issue. It seems to me, first of all, I think it's illegal to use a weapon that's much more destructive than would be necessary to destroy a given target. We've committed to follow the law of armed conflict, which I think we should. I think it's immoral, it would be immoral to do that as well. So if there are targets that can be destroyed with much less destructiveness, especially non-nuclear weapons, then you should use non-nuclear weapons.

If there's a target that can't be destroyed by a non-nuclear weapon but could be destroyed by a low yield weapon, you should use that. So if that then carries the risk that it would be more likely to be used, I don't see the higher yield as somehow the better legal, moral or strategic answer, number one. But number two, to the extent that that's true that a lower yield may be less unlikely to be used, that strengthens deterrence. So there's a paradox there. That paradox runs throughout everything we're talking about.

That deterrence, I would argue, is a good thing, because to the extent that it prevents wars from happening. But to work, it has to be credible. Then once it's credible, comes the risk that it might lead to war. There's no escape from that. But I think given the still way too excessive number of weapons we have and the excessive number of those which have enormous yields that are much greater

than required because now accuracy has improved, it seems to me, I just can't bring myself to then argue, "No, let's put higher yields back on weapons, and let's figure out other ways to manage the risk of escalation so that none of this happens."

Michèle Flournoy:
Yeah. I don't have anything to add in this.

Pranay Vaddi:
I'll just note again that on the ally perspective, we clearly more or less see some role for limited nuclear options in today's complex deterrence environment. Emma Richards points this out, in describing the need for tailored and effective deterrence. US allies seem more or less appreciative of having the Loyalty Five Capability as a regional deterrence tool at a time when allies bear the brunt of coercive of threats from Russia and China, and it happens to be offshore.

So avoid the complicated domestic politics that befall the B-61 that's based in Europe. But as George points out, the US government really needs to clarify why these things exist, why they need to be kept, especially why they would need to be kept if other nuclear options such as the long range standoff air launch cruise missile, and F-35 that is nuclear certified and carries a modernized B-61 gravity bomb are made available. We don't really observe any benefit to increasing explosive yields in nuclear weapons at this point. There are plenty of other high yield weapons in the nuclear force. So that's why we came around to the recommendation we did.

So for our next question from Mark Muhich on YouTube. Michèle, maybe you want to start here, it kind of continues a discussion we started regarding extended deterrence and assuring allies. Mark wants to know what the strategic benefit could be of President Biden pursuing a No First Use declaratory policy? How can nuclear weapons be considered a deterrent or defensive in nature when we could contemplate first strikes? So I think the crux of this question is, let's talk about the risks and benefits of No First Use. I think understanding where allies

come from their views on No First Use, as had been expressed during the Obama administration and may be expressed in the coming months would be helpful.

Michèle Flournoy:
Right. So I think if I go back to the Obama administration, NPR and the debate that happened then. I think the attraction activeness of at least considering No First Use was the desire to constrain the circumstances under which one would reach for a nuclear response, to try to lower the importance or the role of nuclear weapons in our strategy, to have them be more of a backburner option as opposed to a front burner option and so forth.

But I think what prevented the administration from going that far to embrace and no first use posture was the extent to which it would complicate or even undermine our extended deterrent commitments to allies. So we found a different language that you quote in your report. What I thought was interesting about your existential threat policy is that it's a different way to square those two desires of maintaining our commitments to defend allies, providing them with a nuclear umbrella, but also making it very clear, that would only be in cases of existential threat that we would resort to this capability, as opposed to using other non-nuclear options at our disposal.

So I do think this is a debate that needs to be had. I think it needs to go beyond no first use as the only alternative, to look to explore some other possibilities. I think your report does a nice job of laying out what some of those other alternatives might be.

George Perkovich:
I would just add quickly, I mean, people should look at the report, I would say, because the discussion is pretty succinct there about the arguments for and against no first use. So I urge people to do that. The only thing I would say here is, I think it's much more important in terms of affecting the calculations of adversaries and escalation to change the force posture. In other words, you can change declaratory policy. But if you don't change the force posture, the Russians and Chinese aren't going to believe the words that you say whatsoever. If you

change the force posture but can't change the declaratory policy, force posture is what really matters. So I would concentrate on that.

Pranay Vaddi:
Thank you both. A question coming up on a topic we haven't really talked about, which is disarmament policy. This question is related to the creating the environment for nuclear disarmament initiative. George, I think this is probably a place for you to step in. The question basically asked, "Do you support the continuation of the CEND Initiative? What should be its goals moving forward?"

George Perkovich:
Yes, the Trump administration invited more than 40 countries to join this dialogue on “Creating an Environment for Nuclear Disarmament (CEND).” We talked about at the very end of our report and urge that it should be continued. I think the participants from other countries have found it valuable. There are lots of ways that it could be strengthened, and I think that should be pursued.

I mean, one of the ways is would be to bring in more military officials. Because right now, it's diplomats from countries, but a lot of the issues that get discussed require the perspectives of the relevant militaries or heads of state. So I mean, there are things that you could do to improve it, but I can tell you that the participants found it very educational. They said they don't have in any other official format chances were you can actually talk about substantive issues and politics and strategy, and not just read talking points. So I think it was positive in that regard.

Pranay Vaddi:
Thanks, George. The next question I'd like to turn to Michèle. How should the Biden Nuclear Posture Review address the deterrence challenge posed by North Korea? We’ve spent a lot of time talking about Russia and China up to this point, I thought maybe we can shift and talk a little bit about North Korea, and then, George, feel free to jump in afterward.

Michèle Flournoy:
Yeah. North Korea is a really challenging and perennial problem. I remember my very first intelligence briefing in 1993 in the Clinton Administration, which predicted the imminent collapse of North Korea. We haven't gotten it yet. It's a problem that continues to persist and evolve. I do think it's very important that we have a strong declaratory policy of deterrence vis a vis North Korea, and a number of options.

I would frankly focus my attention on non-nuclear deterrence and defensive options because we should be able to both deny North Korean success and/or impose costs that would make them recalculate without ever having to reach for our own nuclear arsenal. But I do think the longer the threat is allowed to evolve, the more their arsenal grows, their capability grows, particularly the ability to put nuclear weapons on intercontinental ballistic missiles, the more we really have to take this seriously.

Here, I think it really gets back to your discussion of missile defenses. Can we design missile defenses, both regional and homeland, that are sufficient to address an increasing threat from a country like North Korea without undermining deterrence, strategic deterrence, with Russia and China. I think that is a critical question that also needs to be- that you rightly put on the table for in depth assessment as part of the Posture Review.

George Perkovich:
I'd just quickly add to what Michèle said that in my view, it is harder to develop policy to deter North Korea and to engage North Koreans on that, if we have to keep insisting the objective is denuclearization, and that's the only thing we can talk about. Again, there are all sorts of metaphors. I understand that for our allies, South Korea and Japan, denuclearization has to be there. But if we could actually shift some of the conversation to make it explicitly about whether deterrence or more positively, confidence building and avoiding provocations and so on, I think that is the way you're going to get more productive outcomes.

Pranay Vaddi:
Thanks, both. I'm going to choose a question that I have some thoughts on, and will start answering, and then turn to you both. But Bill Hoehn asked a question over email, "I'm just curious if George, Michèle, and Pranay have thoughts on the key elements of a verification and monitoring regime that would be appropriate or needed for a follow on treaty to New START, to help maintain strategic stability at lower levels of warheads, and the extent to which parties may be willing to accept more intrusive forms of verification."

I thought we could broaden this question to talk about a New START follow on or an agreement that limits tactical nuclear weapons as well, whatever may come next in the US-Russia arms control relationship. I think the first question we have to ask is, "What is the treaty limit?" That really sets the bar for what's needed in terms of verification and monitoring. We have great success in the START process of verifying the elimination, reduction and overall numerical limits for big nuclear delivery systems. The START treaty, a New START treaty that deals with ICBMs, submarine launched ballistic missiles and heavy bombers. These are big items. You can see them with your eyes, and they're very tough to hide.

US and Russian analysts, inspectors and policymakers also know these systems very well. We've had a 30-year relationship combing each other's nuclear air bases and submarine bases to look at these types of systems. So again, it's a slightly easier verification problem to solve than verifying a non-strategic nuclear weapons agreement. James Acton and I, along with our colleague, TD McDonald, have put out a series of reports which discuss some of these verification challenges. To reach the bar of effective verification for a non-strategic nuclear warhead limitation treaty, we really feel like we need to start with building a base of knowledge.

We should start with inspecting empty storage facilities to get a sense for how each country actually stores nuclear warheads in the European Theater. For the United States, we have some concerns that the Russians may be able to store warheads outside of its national territory, such as in the Kaliningrad Enclave or

in Crimea. For Russia, they may have concerns that the US and NATO have capabilities to store warheads elsewhere other than the five basing nations that are publicly known. So we think a way to sort of practice a verification regime for non-strategic nuclear weapons would be to start with verifying that empty storage facilities are actually as empty as they're declared to be. Maybe I'll stop there and ask if either of you have some thoughts on that question.

Michèle Flournoy:
Go ahead, George. I have not looked at this, the verification issues in detail. So go ahead.

George Perkovich:
I just want to say hi to Bill Hoehn, who worked with me about 30 years ago at the W.L. Jones Foundation. So, but Pranay and James are the experts on all this.

Pranay Vaddi:
Why don't we go to one? Let's see if we can squeeze in two questions but we're starting with a broad one from Michael Krepon. He's asking us to prioritize among various arms control objectives, codes of conduct, establishing norms and limiting or reducing numbers or numerical limits as arms control objectives. If we had to recommend to the Biden Administration what to pursue first, what would your recommendations be?

Michèle Flournoy:
Yeah, I have a strong view on that. I actually think that because of the risk of miscalculation, I think the first two are the most important, of establishing codes of conduct, particularly with China, where we have none, establishing norms of behavior. Really, even if you can't get agreement upfront from Russia and China, if you can get the vast bulk of the international community to agree, then you have means of pressuring them when they violate those norms. So I would put those two as most immediate priorities to try to avoid miscalculation that leads to confrontation or conflict. But I think we can walk and chew gum at the same time. We should also be looking at further reductions, both in the salience and in the numbers of nuclear weapons.

George Perkovich:
I basically agree with that. I mean, I think that norms and code of conduct, again, is the US posture going into that “we behave correctly, you guys behave incorrectly, you have to do what we tell you to?” which tends to be how we do these things. If that's the case, then it's not going to work.

If we're prepared to actually conform our own conduct the way that other people see it, I think it's more productive. But then you have to remember, we're always the ones that say, "Intentions aren't really what matter, capabilities are really what matters." That's what kind of gets you into the numbers thing. So that leads me back to Michèle's last point of, I mean, we can start with norms and codes of conduct, if we're prepared to be honest about it. But then ultimately, we're going to insist that they back it up, and they're going to insist that we back it up with controlling capabilities as well.

Pranay Vaddi:
Let me just note, and then we'll squeeze in one question that I think will be perfect for George to hopefully end our discussion on. But I think Michèle and George are both right, we have to do all the above. The arms control relationship with China is so nascent. We really don't have a basis for which to start demanding numerical limitations on day one on nuclear weapons.

With Russia, we have the muscle memory of a long strategic arms control negotiation process from which we can kind of skip some of the norm building and code of conduct and trust building exercise and move on to discussing formal agreements. Now, as you move into spaces that are outside of nuclear weapons and their delivery systems, if you're discussing behavior in cyberspace, behavior in outer space, these are new areas for arms control, even with Russia. So how we approach those problems may be very different from the more formalistic arms limitations approach we've used to deal with strategic nuclear weapons.

Moving on to a question about the law of armed conflict. How do we compare the severity of something non-kinetic, like a large-scale cyber-attack, perhaps the one

that could take down a power grid, for example, with the acute destructiveness and violence, the sudden violence of a nuclear weapon detonation? George, I think it's a good opportunity to walk through our general thinking on how to apply the law of armed conflict to US nuclear posture moving forward.

George Perkovich:
Well, let me just try to answer the question. So it's a great question. To my mind, cyber can be terrible. I'm just reviewing a book by Nicole Perlroth, The New York Times report that's coming out on cyber. Basically, as horrible and costly as cybercrime and cyber conflict have been, nobody's died directly as a result. There's been some indirect deaths. So the level of violence, it seems to me is profoundly different, and that matters and so is the severity of destruction. Look at what happened to the port of Beirut with a chemical explosion.

It was probably 1/10th as powerful as a low yield nuclear bomb would be. You see the destructiveness and everything else. You look at what's happened with cyber and as bad as it is and costly, they're not comparable. Now, I think that's one reason why cyber becomes a preferred option for many states, including the US and including with Stuxnet, is it precisely because it's less violent, it's less destructive. But it can still undermine adversaries' capabilities, it still can send signals. So it's not going to go away. Precisely because it's much less destructive than a conventional weapon, let alone nuclear war. Nuclear War is incomparable in terms of the destructiveness. Even if you turn all the power off by a cyber-attack, compared to the destructiveness of a nuclear attack, people will take the cyber-attack.

Michèle Flournoy:
I would just say I agree with that assessment. But I do think there's a risk of a country like China being lulled into a set of assumptions that a very large-scale cyber-attack on our critical infrastructure, that they could get away with that and not pay a heavy price. Because if you look at Chinese nuclear doctrine, almost all of it, vis a vis us, starts with trying to disable our ability to actually deploy forces and respond to a crisis.

It almost always includes cyber-attacks around the critical infrastructure of our military facilities. But if you take down the electrical grid around a major military base, you're going to cut electricity off at hospitals on the civilian side, and Americans are going to die. Once you have a lethal cyber-attack, an American President is going to be in a very difficult and different situation. So I totally agree with the comparison between cyber and nuclear. But I think we want to be careful about allowing other powers to think that cyber is this antiseptic, clean, non-lethal way of behaving or attacking the United States, because I think when you actually look at doctrinal, how it's considered in doctrine, I think they could cross a line of lethality without intending to and find themselves in a very escalatory situation.

Pranay Vaddi:
Michèle, I think for the reasons you cited earlier, the focus in the United States in identifying these threats, which may be below the nuclear threshold and the approach we allow in the report is, we need to find ways to bolster our conventional deterrence, our cyber deterrence, and these tools that are far below the nuclear threshold as well, a lot of these are nails that do not need a nuclear hammer. An approach to threatening nuclear use or using nuclear deterrence to prevent these types of attacks, or these types of threats has not worked at this point. So we need to come up with some other answers and maintaining a technological edge is very important.

Last question, I think that we'll have time for. We'll start with George again. This is from Brian Radinsky. George, we have this recommendation. We mentioned that the United States and United Kingdom have promised to adhere to the law of armed conflict when conducting nuclear operations. We recommend that the United States ask the P-5, as a group, to make the same commitment. Now Brian wants to know, why should we expect others to join the United States in proportional deterrence?

George Perkovich:
I don't think we should expect them, I think we should challenge them to do it. In that, I don't think the US has anything to lose. In other words, if we demonstrate

the principles as we've tried to do, of proportionality, which are both of national strategy, of material reason, but also moral and legal, and all of which would be then a much more restrained nuclear posture, much less destructive nuclear capability, if we offer a rationale and a desire to move in that direction, and if others reject it, well, then we react the way that we decide to react.

But I think there's a lot to be gained by taking world leadership in moving in that direction and seeing if others will respond and seeing what kind of pressure can be mobilized on others to respond. Now, Russia and the US have had a very different approach. I don't expect Russia to embrace this approach. But I think it's useful for the US to challenge them to do it. China's a different case. China, after acquiring capabilities in 1964, still has 250, 300 nuclear weapons, the numbers going up. But it's been restrained. So I don't discount entirely the possibility that we could get on a useful track with China in this regard. I think that would have a lot of benefit internationally. But, Brian, it's a great question, and there is no expectation. It's a strategy to try to move the dynamic in a way that's beneficial to the US either way.

Pranay Vaddi:
Anything to add, Michèle?

Michèle Flournoy:
No, just thank you for including me in a great discussion. It's been an honor to affect.

George Perkovich:
Thank you, Michèle.

Pranay Vaddi:
I want to thank you as well for taking the time and of course, George as well. This has been a really good discussion. I want to apologize to our viewers. We had a number of questions we could not get to. They were all really insightful. George and I have email inboxes. Feel free to reach out to us or tweet at us at Carnegie

NPP on Twitter. But thank you all for the discussion. Hopefully, we can do this again sometime soon and in person.

George Perkovich:
All right. Thanks.