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Issues to Watch in Arms Control, Nonproliferation, and Disarmament

by Christopher A. Ford



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Assistant Secretary Ford surveys a number of current questions in the arms control, nonproliferation, and disarmament arenas, identifying key “issues to watch” in the years ahead.

In my current role performing the duties of the Under Secretary for Arms Control and International Security since the autumn of 2019, and in my years of government service going back to the 1990s, I’ve always been a strong supporter of our country’s nuclear deterrent. As we look ahead to the strategic environment of 2021 and thereafter, it will be critical to examine the range of policy challenges that will face the United States. Many of these issues are quite obvious. In order to help frame and highlight some of the challenges ahead, however, I thought I would use this opportunity to draw attention to a few matters the details of which may not always be so obvious.

In particular, I’d like to flag seven “issues to watch” in the arms control, nonproliferation, and disarmament arena. In no particular order, these are: (1) “no first use” or “sole purpose” nuclear weapons theory; (2) the issue of U.S. warhead reductions; (3) ratification of Nuclear-Weapon-Free Zone (NWFZ) treaty protocols; (4) the prospect of a legally-binding prohibition on nuclear weapons testing; (5) recapitalization of the U.S. nuclear weapons infrastructure; (6) placing permanent limits on Iran’s nuclear capabilities; and (7) how to handle political

commitments made in prior Nuclear Nonproliferation Treaty (NPT) Review Conferences.

I. “No First Use” or “Sole Purpose” Nuclear Weapons Theory

Let’s begin with the idea of a policy of “No First Use” of nuclear weapons, or “NFU.” The first thing to remember here is the importance of not falling for rhetorical tricks. A “no first use” policy is *the same thing* as one in which it is the “sole purpose” of nuclear weapons to deter the use of *other* nuclear weapons. Just as an adherent of NFU promises to use nuclear weapons only if someone else already has – thereby renouncing their use to deter *non-nuclear* attacks, such as a large-scale but purely conventional invasion or the use of biological weapons – so a “sole purpose” policy regards nuclear weaponry as having no role whatsoever in deterring anything other than nuclear weapons use by an adversary. The terms are therefore basically indistinguishable, and deliberately so: as [former U.S. Secretary of Defense William Perry has admitted](#), “sole purpose” is exactly the same thing as NFU,

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the “sole purpose” terminology having been [dreamed up merely in order to sound less worrisome to Americans traditionally suspicious of NFU](#). So let’s ignore the sleight of hand: NFU is “sole purpose,” and “sole purpose” is NFU.

But what are we to make of NFU on its actual merits? Concerned as they have been, since the earliest days of the Cold War, with deterring not just nuclear weapons use against the United States or its military allies but also large-scale conventional attack, U.S. officials have shunned NFU for generations. We even avoided it during the early years of the post-Cold War era, when the United States’ conventional military might allowed it to stand astride the global stage like a colossus and we faced very little direct conventional military threat indeed.

Accordingly, one might think that in the present era – in which our great power competitors have been rapidly building up their conventional military power relative to our own, and in which they have actually started *using* that power to intimidate or even invade neighbors friendly to the United States – it would be extraordinarily important for Washington to avoid NFU. [As I have pointed out elsewhere](#),

“... the implications of an American ‘sole purpose’ (a.k.a. NFU) declaration would [be] hugely significant [as] ... [‘a blow to the heart of our alliance system](#), a potential signal to would-be regional aggressors (and our friends) that we do not intend to defend our alliance partners, and a repudiation of decades of bipartisan and trans-oceanic good sense and agreement upon one of the most important planks of U.S. foreign and national security policy.”

As I concluded [my analysis of this question in May 2019](#), an American NFU policy would be

“[t]ruly ... a terrible idea. For all the potential feel-good psychology of NFU, its reality would be only sordid and problematic: ushering us into nuclear weapons relationships more unstable, unpredictable, and untrusting even than at present, transforming our alliance relationships into ones weaker and more tenuous than today, and making nuclear proliferation and indeed nuclear war more likely.”

Our adversaries *like* the idea of us having a NFU policy, of course. During the Cold War, for instance, NFU – or at least an *American* NFU policy – was attractive to the Soviet Union, which may have desired the comparatively free hand that NFU would have given it to threaten U.S. allies in Europe and the Far East with conventional attack without fear of U.S. nuclear retaliation. Leonid Brezhnev, in fact, made NFU a plank of the USSR’s “disarmament” diplomacy in 1982, thus [demonstrating how NFU can actually undermine deterrence and stability](#), and how feel-good virtue-signaling in nuclear policy can be weaponized for cynical ends. Today, it is the People’s Republic of China (PRC) that tries to weaponize NFU among the credulous, urging such a policy upon us even though no one takes Beijing’s *own* NFU pledge too seriously. Indeed one senior PRC official recently all but admitted that China’s NFU pledge was a lie to begin with.²

Yet NFU still has a lingering attraction in certain political circles, where some still appear to think we can safely adopt strategic policies principally on the basis of how good they make us feel about ourselves in our fidelity to the dream of disarmament, as if it were still 1994 and one might perhaps be able to argue that the *only* serious threat we or our allies face from other powers is their nuclear weaponry. “Sole purpose” thinking, in fact, even appeared in President Obama’s [2010 Nuclear Posture Review](#) (NPR). Although that document made clear that the United States was “not prepared at the present time to

² In a panel discussion at the Nov. 12, 2020, European Union conference, I confronted PRC Ambassador Fu Cong with the contradiction between Beijing’s “no first use” policy and the reality of its massive nuclear build-up. [If the PRC really had an NFU policy, I pointed out](#), it would have no reason to expand its nuclear weapons stockpile in recent years, since the U.S. and Russian nuclear arsenals have shrunk to only a fraction of their previous size over the last generation. If nuclear weapons are just to deter other nuclear weapons, why has China still continued to build more weapons even while the U.S. nuclear threat facing it has shrunk? Fu’s answer was telling: he did not deny that the PRC was expanding its arsenal – claiming merely that “China will not expand its nuclear arsenal to a large extent” (emphasis added) – but declared that Chinese policy was a reaction to the PRC facing “more threats from the U.S.” Since the United States is not adding to the size of its own arsenal, and indeed U.S. warhead numbers have been shrinking *since 1967*, Fu thus admitted that Beijing does *not* regard Chinese nuclear weapons as having the sole purpose of deterring other nuclear weapons, but instead sees them as having a role in deterring non-nuclear threats as well. I do not fault the theory that nuclear weapons have potential value in deterring grave non-nuclear threats, for that’s certainly true in principle. But one cannot say this and pretend to have a “no first use” policy *at the same time*.

adopt a universal policy that deterring nuclear attack is the sole purpose of nuclear weapons,” the 2010 NPR promised to “work to establish conditions under which such a policy could be safely adopted,” in pursuit of “the objective of making deterrence of nuclear attack on the United States or our allies and partners the sole purpose of U.S. nuclear weapons.”

Indeed, as recently as January 2017, Vice President Joe Biden proclaimed his continued desire to adopt an NFU policy. Specifically, Biden declared his [“commitment to create the conditions](#) by which the sole purpose of nuclear weapons would be to deter others from launching a nuclear attack.”

This is why NFU is a key “issue to watch,” for *not* adopting such a policy has hitherto been essential to U.S. alliance relationships. It would be very damaging to those relationships to renounce the “extended” nuclear deterrence with which for generations we have helped protect our allies and partners in Europe and the Indo-Pacific from attack and invasion.

II. U.S. Reductions

The second “issue to watch” over the next few years, I would suggest, has to do with whether the United States will again conclude that if we “lead the way” in getting rid of nuclear weapons, others will follow.

It is certainly the case that as Cold War tensions waned, the United States *was* able safely to eliminate the vast majority of its nuclear weapons, and in some respects the United States indeed took the initiative in bringing this about. Beginning with the success of Ronald Reagan’s Intermediate-range Nuclear Forces (INF) Treaty of 1987 in eliminating an entire class of nuclear delivery system, and following with the enormous reductions in strategic forces negotiated by George H.W. Bush and thereafter carried out under the Strategic Arms Reduction Treaty (START) of 1991, as well as the elimination of large numbers of non-strategic nuclear weapons under the the Presidential Nuclear Initiatives (PNIs) that Bush undertook with Mikhail Gorbachev and Boris Yelstin, enormous strides *were* made in getting rid of weaponry that the end of Cold War tensions had made unnecessary. Today, as a consequence, the number of weapons in the U.S. arsenal stands at its lowest level since the Eisenhower era.

These past successes have sometimes led U.S. leaders to assume that if we simply *want to* enough – and if we show moral leadership in pointing the way there – we can replicate such progress indefinitely, moving inexorably forward into a future world in which nuclear weapons have entirely disappeared. This was the promise held out, for instance, by President Obama in his [“Prague speech” of April 2009](#), in which he declared that “the United States has a moral responsibility to act” in creating “a world without nuclear weapons.” While “[w]e cannot succeed in this endeavor alone,” he insisted that “we can lead it, we can start it. . . . We have to insist, ‘Yes, we can.’” To this end, in 2013 he [proposed cutting our deployed strategic arsenal by an additional one-third](#) – to approximately 1,000 operational warheads – even below the levels established by the New START agreement he signed in 2010. Obama also [unilaterally retired our sole remaining sea-launched nuclear cruise missile](#), and proclaimed the United States ready to work with NATO allies to seek “bold reductions in U.S. and Russian tactical weapons in Europe.”

But it is a dangerously faulty syllogism to think that merely because (a) we could do so much after the Cold War ended, (b) we can necessarily do more now. The problem is obvious: our impressive post-Cold War reductions were feasible *because* Cold War tensions had waned, whereas today, since the mid-2000s, the strategic environment has been getting *worse*, not better. This approach having failed to catalyze dramatic disarmament movement even in 2009, it is hard to imagine how it could work in the early 2020s.

Even before the “Prague speech,” after all, the Putin regime in Moscow had begun secretly to violate the INF Treaty and had openly used military force to seize territory from one of its neighbors, the country of Georgia, and the PRC was engaged in a nuclear and conventional military buildup. Since then, Russia has stepped up its aggressive behavior as a tool of territorial self-aggrandizement, seizing Crimea from Ukraine in 2014, and following that up with a conflict in eastern Ukraine that it instigated and continues to fuel, all in grotesque violation of the United Nations Charter, not to mention the Kremlin’s own promises in the Budapest Memorandum of 1994 to guarantee Ukraine’s territorial integrity, which were based on already existing rules of law.

Moreover, while interfering in the electoral processes of multiple Western democracies, Russia has retained an

illegal [biological weapons program](#), and has not merely retained an illegal chemical weapons program but in fact *used* a chemical weapon on the soil of one of our NATO allies. Russian expeditionary forces today also prop up the Syrian dictatorship of Bashar al-Assad, also shielding it from accountability for chemical weapons atrocities.

For its part, moreover, the PRC continues to expand the military capabilities with which it seeks to overawe and cow its neighbors, engages in constant and egregious cyber-facilitated technology theft around the world, issues steadily more bellicose threats against Taiwan even while crushing the last vestiges of political freedom in Hong Kong and committing horrific, industrial-scale abuses against Muslims and other minorities within the PRC. Beijing has also sought to exercise control of huge expanses of the South China Sea through a maritime claim squarely in violation of international law.

Continued disarmament progress in *this* environment is clearly much more challenging than it was in the mid-1990s, let alone some kind of resumption of the giddily rapid movement of the early post-Cold War era.

Nor, by the way, did all of those lauded post-Cold War nuclear reductions actually work in the first place. It isn't clear, for instance, that the Kremlin fulfilled all of its PNI promises with respect to non-strategic weapons, though of course the United States had long since fulfilled its own commitments. And everyone knows what Russia's illegal development and deployment of an INF-class cruise missile did to the INF Treaty.

And while we have not deployed a new strategic system for decades, much less an entirely new type of strategic nuclear system, Russia is building and, in some cases, already deploying bizarre new "exotic" systems. Most prominently, the Kremlin is building the *Poseidon* nuclear-powered torpedo designed to inundate U.S. coastal cities with radioactive tsunamis, new hypersonic boost-glide nuclear delivery vehicles, an air-launched ballistic missile, and the "[madly reckless flying Chernobyl](#)" of the accident-prone *Skyfall* nuclear-powered cruise missile.

Meanwhile, China continues its own dramatic nuclear buildup, not merely adding to the diversity of its delivery

systems in pursuit of what will be *at least* a "triad"-type configuration, but also greatly expanding the size of its arsenal – on the way to at least doubling the number of warheads in a few years' time. Beijing is also moving increasingly toward a "launch on warning" posture, even while criticizing such a posture publicly, contemptuously dismissing any prospect of arms control negotiation with the United States, and resisting meaningful bilateral nuclear risk reduction talks.

This, then, is the strategic environment that faces us today. And this is why I see another "issue to watch" in the question of whether or not U.S. leaders during the next four years try to circle back to earlier enthusiasms for the idea that the United States can "lead" disarmament by reducing our nuclear arsenal irrespective of security conditions.

The crowning irony here, of course, may be that President Obama's suggestion in 2013 that we reduce our arsenal to about 1,000 operational warheads fits remarkably well with the recent suggestion, in a government-controlled newspaper owned by the Chinese Communist Party's official mouthpiece *People's Daily*, that China itself needs an arsenal of 1,000 operational warheads.³ On the assumption that it is hardly in the United States' interest to endorse the idea of numerical nuclear parity with Beijing, this issue is an important one for the future.

III. Nuclear-Weapon-Free Zone Treaty Protocols

A third question – albeit admittedly a much more obscure one – relates to the various remaining "negative security assurance" protocols signed by Presidents Bill Clinton and Barack Obama to Nuclear-Weapon-Free Zone (NWFZ) treaties. To date, only one such protocol has been ratified by the United States, in connection with the [Treaty of Tlatelolco](#), which established a NWFZ in Latin America and the Caribbean. Analogous protocols have been signed by the United States, but *not* ratified, with regard to similar NWFZ treaties for Africa (Treaty of Pelindaba),

³ Hu Xijin, "China Needs to Increase its Nuclear Warheads to 1,000," *Global Times* (May 8, 2020).

Central Asia (Treaty of Semipalatinsk), and the South Pacific (Treaty of Rarotonga).

But first, what are “negative security assurances” and why do these protocols matter? In contrast to a “positive” security assurance – where a commitment is made to provide some kind of aid or assistance in adverse circumstances – a *negative* security assurance (NSA), in this context, is a promise given by a nuclear weapons possessor concerning when it would *not* use (or threaten to use) nuclear weapons. The United States, among other NPT nuclear-weapon states, has issued NSAs in various formulations over the years as a matter of national policy. In the [2010 NPR](#), for instance, the Obama Administration declared that “the United States will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the NPT and in compliance with their nuclear non-proliferation obligations.” The Trump Administration issued a similar statement in the [2018 NPR](#).

These declarations represent statements of U.S. Government policy. The NWFZ treaty protocols, however, also contain negative security assurances, but they are legally-binding ones. Article 3 of [Additional Protocol II to the Treaty of Tlatelolco](#), for instance, provides:

“The Governments represented by the undersigned Plenipotentiaries ... undertake not to use or threaten to use nuclear weapons against the Contracting Parties of the Treaty for the Prohibition of Nuclear Weapons in Latin America.”

The protocol, therefore, makes this particular NSA into a matter of international legal obligation, rather than simply a question of any particular nuclear weapon state’s national policy.

But here is where things start to get complicated. The Tlatelolco protocol NSA is *different* from the NSA contained in U.S. nuclear weapons declaratory policy. And this is the issue: legally binding NSAs in the NWFZ treaty protocols can be in tension with U.S. declaratory policy and, if not appropriately qualified, could actually undermine that declaratory policy.

Let’s unpack that a bit. Whereas U.S. policy promises only to refrain from nuclear threat or use against States Party to the NPT *when such states are in compliance with their nonproliferation obligations*, the Tlatelolco protocol prohibits the threat or use of nuclear weapons *vis-à-vis*

Latin American states, period. To be sure, I would imagine that if a Latin American country were in violation of the NPT for possessing nuclear weapons, which would also amount to a breach of the Treaty of Tlatelolco, there would be options we could consider for employing nuclear deterrence against such a country. But if a Latin American country withdrew from the NPT, for instance – or violated its NPT obligations in some way that *didn’t* involve actually having nuclear weapons (e.g., by not complying with NPT-required International Atomic Energy Agency safeguards) – it would fall out of whatever protections are offered by U.S. declaratory policy, but this wouldn’t matter because the United States would still be bound by the protocol not to use or threaten to use nuclear weapons against that country. In that context, at least, the legally binding protocol NSA would be in tension with U.S. nuclear declaratory policy.

Such a scenario is surely unlikely, but it still illustrates the way in which NWFZ protocols could operate to undermine U.S. nuclear declaratory policy, carving out areas of the world in which that policy – or options reserved within it – is displaced by a legally binding obligation. If U.S. leaders truly think their declaratory policy as expressed in successive Nuclear Posture Reviews is the *right* policy for all countries, it ought to be of concern that the “Zones” differ from that policy, and that in some circumstances they might even *prohibit* for broad regions of the globe what U.S. policy expressly contemplates. If a future administration makes a push to ratify these protocols, it remains to be seen whether the Senate would place conditions, in giving its advice and consent, to help reduce the tension between the protocols and U.S. declaratory policy.

And that is not the only potential problem here. Indeed, the tension between NWFZ treaty protocols and U.S. nuclear weapons declaratory policy is even more clear with regard to the caveats that American leaders have in recent years made in their articulation of that policy, pointing out that they “reserve the right” to change the U.S. negative security assurance if grave threats require it. In the [2010 NPR](#), for instance, the Obama Administration declared that

“[g]iven the catastrophic potential of biological weapons and the rapid pace of bio-technology development, the United States reserves the right to make any adjustment in the assurance that may be warranted by the evolution and

proliferation of the biological weapons threat and U.S. capacities to counter that threat.”

Similarly, the Trump Administration’s [2018 NPR](#) makes clear that it retains the option of exempting states from its NSA in response to the risk of “significant non-nuclear strategic attacks” – a category of threat that includes, but is not limited to, non-nuclear “attacks on the U.S., allied, or partner civilian population or infrastructure, and attacks on U.S. or allied nuclear forces, their command and control, or warning and attack assessment capabilities.” Specifically, it provides that

“[g]iven the potential of significant non-nuclear strategic attacks, the United States reserves the right to make any adjustment in the assurance that may be warranted by the evolution and proliferation of non-nuclear strategic attack technologies and U.S. capacities to counter that threat.”

These caveats thus operate as a kind of “strategic security safety valve” in U.S. declaratory policy, putting the world on notice that notwithstanding our general NSA about not threatening with nuclear weapons nonproliferation-compliant NPT States Party, we *might* revise that assurance if such a country presented a sufficiently grave non-nuclear threat. All this, to my eye, makes good sense, and supports deterrence and provides some additional disincentive for others to invest in “significant non-nuclear strategic attack” capabilities.

The problem, however, is that the NWFZ treaty protocols could foreclose use of that “safety valve” with respect to the NWFZ states that would be the beneficiaries of the legally binding NSAs. Imagine, for instance, that the United States faced a severe biological weapons threat from, say, Venezuela. Under either the Obama Administration’s declaratory policy *or* that of the Trump Administration, it would be entirely permissible in such circumstances to revise the U.S. negative security assurance to make clear to Caracas that we did *not* foreclose a nuclear response in the event that it used such terrible weapons against us. Nevertheless, such a revision would be *illegal* under Additional Protocol II of Tlatelolco, which has been both signed and ratified by the United States: as applied to Latin America, actually *using* the “safety valve” caveat we have felt it so important to include in U.S. declaratory policy would be unlawful.

To my knowledge, no one has ever before publicly drawn out this tension between the legally-binding rigidities of the NSAs under NWFZ treaty protocols and the flexibility that U.S. leaders have clearly felt it important to include in their nuclear declaratory policy in order to preserve deterrence in an age of growing strategic threats from such things as biological and chemical weapons, counter-space capabilities, and cyber attacks amounting to a use of force against critical infrastructure. But there clearly *is* some such tension, and this tension would only grow if the United States ratifies additional “Zone” treaty protocols that contain NSAs, enlarging the regions of the world in which actual use of the U.S. “safety valve” caveats would be illegal.

In this era of growing non-nuclear strategic capabilities, it is far from obvious that taking nuclear deterrence off the table *vis-à-vis* such threats is a good idea. Yet the various “Zone” protocols could undermine our ability to deter the use of such non-nuclear tools, perhaps even giving countries additional incentives to develop such capabilities, secure in the knowledge that they could threaten us with them while we would remain bound by our treaty obligations not to use or threaten use of the most powerful weapons *we* have in response. Despite this, however – and despite the tension between the protocol NSAs and its *own* nuclear declaratory policy as set forth in the 2010 Nuclear Posture Review – the Obama Administration supported Senate advice and consent to ratification of the remaining “Zone” protocols signed by the United States.

So here, therefore, is my third “issue to watch” in the years ahead, especially as officials come to recognize the degree to which the remaining NWFZ treaty protocols exist in tension with U.S. nuclear weapons declaratory policy.

IV. Nuclear Testing

The Comprehensive Nuclear Test Ban Treaty (CTBT) has been an issue approaches to which have been quite polarized between the two U.S. political parties ever since the Senate voted not to give advice and consent to CTBT ratification in 1999. This is not because one side actually *wants* to return to nuclear testing, since administrations of both political stripes continue to believe testing is not necessary at this time, and the U.S. Government has remained firmly committed to the “zero-yield” U.S. policy

moratorium on nuclear testing adopted in 1992, under which we scrupulously avoid any test-related activity that produces nuclear yield. Rather, opinions are sharply divided on whether it's wise for the United States – upon the reliability and availability of whose nuclear forces *dozens* of democracies depend in order to help deter aggression by the authoritarian revisionist regimes in Russia and the PRC – forever to forswear any possible resumption of testing *as a matter of law*.

On one level, as applied to U.S. nuclear weapons themselves, there is little new in this debate as we reach the end of 2020. To many observers' surprise, the "heroic science" of the Stockpile Stewardship Program (SSP) – and enormous sums of money – have so far managed to keep the warhead designs in the U.S. arsenal able to meet our scientists' exacting reliability standards without any need to resume yield-producing tests of the sort carried out before 1992. The question, however, is whether we can count upon such work still being successful, *forever*, for weapons that were never intended to go long periods without testing and that were not designed with the sort of inbuilt error margins that one might have preferred in order to optimize the lifetime of individual devices.

By comparison, right before they signed the CTBT, the French tested a warhead design that was specially modified for long life. Some others, such as Russia, simply *remanufacture* their warheads on a rolling basis, ensuring that no individual device actually gets all that old in the first place. The United States, on the other hand, has worked to extend indefinitely the lifetimes of *the very same weapons* we've had since announcing our moratorium three decades ago. It has been enormously impressive how long we've managed to make this work, and there is still no sign of needing to resume testing in order to ensure reliability, but there's a world of difference, as it were, between "old" and "immortal." Accordingly, the salient question for CTBT is: "How long can this continue, and are we sure enough that we'll *never* need to test again that it's safe to make this a *legal requirement*?" (A related challenge is whether we are fully confident that we will never need a *new* warhead design, the validation of which might require some form of yield-producing test.)

These debates have been around for years, of course. The Senate rejected President Clinton's effort to get advice and consent for ratification of the CTBT in 1999, and the George W. Bush Administration opposed trying

again. While he never actually tried to restart the ratification process, President Obama nonetheless declared himself to support the CTBT, while the Trump Administration thereafter once more opposed it. Today, support for ratification has become a potent litmus test of political orthodoxy in the disarmament community.

There *are* a couple of new wrinkles in these debates, however. The big one is that U.S. officials have now publicly revealed that Russia, and perhaps China – notwithstanding their public moratoria on nuclear weapons testing – have actually conducted secret, yield-producing nuclear tests below the detection threshold of the CTBT's monitoring network. As we recently described it in the U.S. State Department's annual report on [Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments](#) (a.k.a. the Compliance Report), "Russia has conducted nuclear weapons experiments that have created nuclear yield and are not consistent with the U.S. 'zero-yield' standard." We also have concerns about Beijing's adherence to the "zero-yield" standard, as the United States understands it, in the extensive activity underway at the PRC's Lop Nur nuclear weapons test site.

These problems are likely to – and certainly should – greatly complicate CTBT debates in the United States, by adding another layer of complexity to the public discourse. Previously, the primary debate was over whether, and for how long, the SSP could ensure continued reliability of our ever more elderly warheads. But now there is also an additional question: *what are the implications for U.S. national security if Russia and China engage in yield-producing tests that we ourselves forego?* We warned in the [2020 Compliance Report](#), for instance, that asymmetries in nuclear test behavior could have

"significant implications for U.S. national security as well as for international peace and security – especially over time – if one or more [of the major powers] were willing to conduct nuclear testing activities that other [powers] felt themselves to be precluded from undertaking. Particularly if such differences were concealed, divergent [state] interpretation or implementation of their respective moratoria could therefore serve as a means by which some [states] gain progressive strategic advantage over [those] having more restrictive interpretations or implementation."

To wit, what might our great power competitors already have learned or be learning from such activity? What might they learn in the future, even if the CTBT comes in to force, if they approach compliance with that treaty as they approach adherence to their policy moratoria? And what strategic advantage might this give them vis-à-vis the United States if we – as the treaty would require – never again engage in such activity? Any future debate over U.S. ratification of the CTBT must now inescapably struggle with these questions, and thus with the danger that ratification would, in practice, set the United States permanently at a disadvantage vis-à-vis adversary weapons programs that would be able to benefit on an ongoing basis from secret and undetected small-scale tests of a sort that we ourselves would eschew on account of our treaty obligations.

The second wrinkle to watch has to do with the Obama-era position that the United States had an obligation under customary international law to refrain from acts that would defeat the object and purpose of the treaty, including nuclear testing, given its intent to pursue ratification of the treaty. The supposed basis for this argument is customary international law as reflected in Article 18 of the [Vienna Convention on the Law of Treaties](#), which says that after a state has signed a treaty, it is “obliged to refrain from acts which would defeat the object and purpose” of that treaty “until it shall have made its intention clear not to become a party to the treaty.”

In 2015, the Obama Administration took the position that, because it once again supported the CTBT and intended for the United States to become a party, after eight years of antipathy to that instrument by the George W. Bush Administration, the “object and purpose” obligation had *revived*. Because the Obama team apparently viewed even very small-scale, yield-producing tests as being contrary to the object and purpose of the CTBT, and the P5 issued a joint statement in 2016 “recognizing that a nuclear weapon test explosion or any other nuclear explosion would defeat the object and purpose of the CTBT,” the implication was apparently that the customary international law obligation of a signatory would have precluded the United States from engaging in any yield-producing nuclear testing, even though the Senate had not given its advice and consent to ratification of the treaty and it had not come into force.

This interpretation was [rightly criticized at the time](#), and the Trump Administration has rejected it. While such

an “object and purpose” obligation upon the United States *had* existed for a time after President Clinton signed the CTBT in 1996, that obligation was extinguished at the point that the George W. Bush Administration “made its intention clear not to become a party” – a signal clearly sent by U.S. officials on multiple occasions, including in a 2006 letter to Congress by Secretary of State Condoleezza Rice. The pre-ratification “object and purpose” obligation having thereupon been extinguished, obligations in connection with the CTBT would *only* arise again if the United States ratified the treaty.

None of this would prevent the United States from again supporting the CTBT and promoting ratification; nor would it prevent the U.S. Senate from giving its advice and consent to ratification. And, if ratification occurs and CTBT entry into force follows – though that seems rather unlikely, given the additional countries that would also need to ratify in order for entry into force to occur – the United States would certainly be legally bound not to engage in nuclear testing. But just as the substantive issues related to U.S. stockpile reliability and the potential threat of ongoing Russian and Chinese testing present intriguing new challenges on matters of policy substance, the extinguishment of the “object and purpose” obligation a decade and a half ago has not yet been fully internalized by the U.S. policy community. It is, therefore, another “issue to watch.”

V. U.S. Nuclear Weapons Infrastructure

When it comes to the future of the U.S. deterrent, one needs to look *beyond* just the famous “Triad” of land-based intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and strategic bombers. In particular, our deterrent also depends critically upon the infrastructure that builds, maintains, and must be relied upon (if needed) to replace the actual nuclear weapons that it is the job of our Triad to be able to deliver – and without which those delivery systems are no more than fancy and expensive ways of making pieces of metal travel long distances.

Here, then, is another issue to watch. As I emphasized in my introduction to [a recent monograph in our Arms Control and International Security Papers series](#), the U.S. nuclear weapons infrastructure has a vital role in maintaining deterrence:

“This is a point that many observers tend to forget in assessing nuclear strategy. Having a robust and effective nuclear weapons infrastructure is vital if one is to maintain any meaningful deterrence over time, and it is also of enormous importance in deterring ‘breakout’ from arms control agreements and in avoiding the dangerous spiral of an unconstrained nuclear arms race. Your adversary, for instance, does not need to know only that your existing weapons will ensure that aggression would exact from him an entirely unacceptable cost. That adversary *also* needs to know that you can keep him in this position of being deterred for as long as you need to, regardless of what he does. And this is the role of the nuclear weapons development and production infrastructure: a robust infrastructure tells the adversary that he cannot out-build and overwhelm you in an arms race. Maintaining such an infrastructure thus contributes both to baseline deterrence and to preventing treaty ‘breakout’ and arms racing.”

This is especially important, because it is through decay of the underlying nuclear infrastructure that dangerously premature nuclear disarmament is most likely to occur by stealth, or by thoughtless inadvertence. To my eye, it is unlikely that any U.S. president would be bold and foolish enough to forego the maintenance of a robust suite of strategic delivery systems. Such arms are well-known to everyday Americans, decrepitude and dysfunction here would be shockingly obvious to all, and the loss of these capabilities both obvious and obviously gravely detrimental to United States security.

The gradual collapse and debilitation of the underlying nuclear weapons *infrastructure*, however, is not nearly so easy to see – and all *too* easy to permit. It is lamentably easy to skimp on infrastructure, for it is expensive, its importance is not always obvious, and damage to it can occur in ways that are neither immediate nor intuitively apparent in the ways that would be, say, a bomber that cannot fly. Cutting corners in infrastructure is easy to overlook or to rationalize, and the costs of doing so are sometimes hard to see, especially to non-experts.

We know this is easy, in fact, because past U.S. presidents and Congresses of both political parties have *already* allowed all too much such damage to occur. Today, more than half of U.S. National Nuclear Security

Administration facilities are [more than 40 years old](#), and about a third actually date back to the Manhattan Project itself. To anyone serious about deterrence, especially over time, this is unconscionable.

To help turn things around, the current administration has allocated considerable additional funds in the Fiscal Year 2021 budget to help recapitalize the U.S. nuclear infrastructure. This will need sustained attention for a long time, however, if we are to be able to meet our national security needs in the future – let alone to be able to develop *new* capabilities in the event that worsening strategic circumstances require. This makes support for the U.S. infrastructure a truly vital “issue to watch” in the years ahead.

VI. Putting Limits on Iran’s Nuclear Program

A number of key U.S. allies profess themselves committed to “returning” to the Joint Comprehensive Plan of Action (JCPOA) with Iran, and clearly seek to provide Tehran some degree of relief from the punishing and highly effective U.S. sanctions imposed upon Iran during the last four years. Another of my “issues to watch,” however, is whether these allies can offer any plan for addressing the key nonproliferation threat that is actually *written into the JCPOA itself*, and whether there is any way to do so without, in effect, adopting the JCPOA policy of the Trump Administration.

The key thing to remember here is that although the JCPOA did *delay* Iran’s development of fissile material production capabilities and stockpiles of enriched nuclear material, this *was* merely a delaying tactic. Under the terms of the nuclear deal, key restrictions on Iran’s nuclear program will evaporate, leaving Iran free, for instance, to build the 190,000 “separative work unit” uranium enrichment capacity for which Iran’s Supreme Leader Ayatollah Ali Khamenei called in 2014, describing this as Iran’s “absolute need.” Indeed, under the terms of the JCPOA, Iran will eventually be free to build an enrichment capacity of *any* size, and to possess as much enriched uranium as it wishes – even if that material were enriched to bomb-grade levels of purity.

In another four years, for instance, JCPOA restrictions will start to ease on Iran’s manufacture of advanced uranium enrichment centrifuges. *All* limits on centrifuge production would disappear in about a decade, and Iran

would also be able at that time to possess as much enriched uranium as it wanted, and at any enrichment level. Indeed, Iran would be free to enrich that uranium stockpile to a weapons-optimal level of 90 percent if it wished – and would be free to do so anywhere in Iran, rather than solely at the well-known and not terribly well-protected Natanz facility. Furthermore, there is some ambiguity in the JCPOA on other issues, creating the danger, for instance, that Iran would in time also feel free again to build heavy water nuclear power reactors optimized for plutonium production – and indeed to reprocess spent fuel from its reactors, thus giving itself a potential pathway to a *plutonium* weapon in addition to “merely” a uranium bomb.

Let me be clear: this dystopian future – of an Iran postured for the option of a quick potential “sprint” to nuclear weaponization and the production of a sizable nuclear arsenal – is not one that the JCPOA prevented. To the contrary, *it is one that the JCPOA accepted and legitimized*, and to which Britain, France, Germany, China, Russia, and the Obama Administration actually *agreed*.

And this is why I think the JCPOA is such an important issue to watch. When our allies say they wish to “return to the JCPOA,” they promise fidelity to a deal that would permit Iran to build these capabilities.⁴

To be sure, the conundrum they face is a challenging one, for the terms of the JCPOA *itself* are the problem. Under the JCPOA, the other participants promised to lift nuclear sanctions on Iran up front, in return for Tehran’s adherence to nuclear commitments under the deal. For a while, that was felt to be a good idea, for those terms actually put limits on the size and scope of Iran’s nuclear program. The problem, however, comes in a few years’ time, when *the terms of the deal itself* will allow Iran to begin expanding its fissile material capabilities as much as it wants. On the other hand, placing nuclear-related sanctions on Iran in order to get it to accept *additional* restrictions would not be permitted under the JCPOA.

Accordingly, the JCPOA partners who wish to “return” to the deal find themselves stuck. They would seem to have only two choices: they can break away from their cherished JCPOA by putting nuclear pressures on Iran to

accept a more enduring deal, or they must resign themselves to *accepting* the huge future Iranian fissile material program that their beloved arrangement would permit. They cannot be faithful to the JCPOA without allowing Iran to have those capabilities, and they cannot pressure Iran to accept permanent limits without admitting that the Trump Administration was right all along about the JCPOA’s “sunset clause” problem.

I do not envy this predicament, and I urge our partners to thoughtfully review the full range of current information about the Iranian nuclear program and seek a new agreement that finally puts permanent limits on Iran’s program and that comprehensively addresses the wide range of threats emanating from the Iranian regime. This is a question of critical importance.

VII. Nuclear Nonproliferation Treaty Commitments

My final “issue to watch” relates to how the international community approaches nuclear disarmament issues in the Nuclear Nonproliferation Treaty (NPT) review process. This is an issue that will quickly acquire special salience, because the 2020 NPT Review Conference (RevCon), originally scheduled for last spring, has been postponed until the summer of 2021. Although it is frequently the case that NPT RevCons – which normally take place every five years – do *not* reach consensus on a Final Document, it sometimes occurs that they do, and one of the recurring questions in crafting each Final Document is what to make of the pronouncements made in past such meetings.

NPT RevCon Final Documents, of course, have no intrinsic legal status: they are not international agreements, have so far entirely lacked the sorts of language and phrasing that might signal parties’ intention to create legal effect, and they are without question at best merely “politically binding” instruments. Yet the disarmament community tends to fixate upon them with a monomaniacal intensity that is often nothing short of confusing. Of particular note here are the “[Thirteen Practical Steps](#)” for disarmament outlined in the consensus Final Document of the NPT RevCon in 2000, the

⁴ It was precisely this problem that led to the U.S. exit from the JCPOA. As I have recounted elsewhere, in late 2017 and early 2018, Special Envoy [Brian Hook and I met repeatedly with European counterparts](#) to try to work through a way to get their commitment to putting permanent limits on Iranian nuclear capabilities in return for the United States not leaving the deal. They refused.

express terms of which betray a dated agenda rooted in the peculiar circumstances of the day, but which remain the object of extraordinary veneration in disarmament circles more than two decades later.

This makes little sense. There are surely “Steps” in the 2000 Final Document that it still makes sense to pursue today, but there are also measures called for in that document that in the contemporary context are nothing less than incoherent. As [I noted in a recent ACIS Paper](#),

“As part of the ‘Thirteen Practical Steps’ agreed upon by the 2000 NPT Review Conference ... it was urged that the United States and Russia implement the START II arms control treaty, negotiate START III, and strengthen the ABM Treaty – none of which exist today. START II ... never entered into force; the U.S. withdrew from the ABM Treaty in order to respond to emerging threats from North Korean and Iranian missiles ...; and START III negotiations never commenced (the envisioned framework of which was far different than that of the subsequent New START Treaty). Does it make sense to consider all of the ‘Thirteen Steps’ to be the canonical disarmament agenda for today? Of course not.”

Yet the existence of such “Zombie Steps” has not stopped diplomats and civil society activists from calling fervently for fidelity to the “Thirteen Practical Steps” ever since, without any effort to distinguish which ones remain relevant and which do not.

Such fetishizing of past political pronouncements is actually fairly unusual in the international community, applying with peculiar intensity in the nuclear weapons arena, but usually much less so elsewhere. In other areas of international affairs, it seems to be pretty well understood that while political pronouncements in international fora obviously represent what their supporters thought was important *at the time*, the mere fact of such consensus *then* doesn’t necessarily make

them the right answer *now* – much less for all time, irrespective of circumstances.⁵

Yet in the NPT realm, some in the diplomatic community still ascribe an almost talismanic power to prior political pronouncements, most of all the “Thirteen Practical Steps,” “Zombie Steps” and all. As recently as the year 2010, for instance, NPT RevCon debates resonated with an [endless procession of declarations by States Party](#) professing fidelity to the “Thirteen” and describing how they were supposedly making progress in fulfilling them. The consensus [2010 NPT RevCon Final Document](#) itself, in fact, expressly *reaffirmed* “the continued validity of the practical steps agreed to in the Final Document of the 2000 Review Conference” and “the urgent need for the nuclear-weapon States to implement the steps leading to nuclear disarmament agreed to in the Final Document of the 2000 Review Conference.” Obliging echoing the catechism, those nuclear-weapon states duly committed “to accelerate concrete progress on the steps leading to nuclear disarmament, contained in the Final Document of the 2000 Review Conference.” All this occurred *years* after a handful of those steps had become outdated and irrelevant as a result of the passage of time, and indeed disarmament activists today [still call for more to be done to implement the “Thirteen Steps.”](#) Such a mindless reaffirmation of all past recommendations betrays a sclerotic approach that looks backward rather than forward and resists the need to confront today’s realities.

This has long been one of the oddities of NPT diplomacy, but the continued passage of time makes the obsession with fidelity to “Zombie Steps” especially strange. [I have made this point elsewhere](#), arguing that

“a serious disarmament agenda for the present day must be willing to reassess its understandings as the world changes. That certainly doesn’t mean reflexively discarding past policy commitments, but it doesn’t mean reflexively endorsing them either. Article VI [of the NPT, which relates to disarmament,] does not

⁵ As an illustrative comparison, there was a [U.N. General Assembly resolution in December 1976 calling for aid to drought-stricken areas of Ethiopia](#). That presumably made perfect sense at the time, for there apparently was a drought in parts of Ethiopia, and [Food and Agriculture Organization records show a terrible low point in food supply there that year](#). But nobody loses sleep in 2020 because we aren’t following the General Assembly’s recommendations *in 1976* about how to deal with Ethiopia, for that would be ridiculous. How the international community approaches the Horn of Africa in 2020 should obviously be based upon the conditions of 2020; the only defensible criterion for evaluating the merits of fidelity to a past political declaration is its degree of congruence with current circumstances and needs.

require any particular concrete steps, and indeed the Treaty’s negotiating record is replete with repeated rejections of efforts to require them. Instead, Article VI enjoins all states to work together toward disarmament — specifically, to pursue negotiations in good faith on effective measures relating to disarmament — and it leaves it to the judgment of future decision makers as to how to do this under the prevailing circumstances.”

This is why I think the “Thirteen Practical Steps” is another “issue to watch” in the months and years ahead, especially as the rescheduled 2020 Review Conference approaches. Many states will surely be tempted to signal their virtue by endorsing the incoherencies of the

“Thirteen Practical Steps,” but nothing *requires* them to do so. Rather than treating disarmament policy as a matter of unexamined faith and shallow reflex, they still have a chance to take a stand in favor of the quaint idea that policy should be approached in realistic and thoughtful ways based upon the actual conditions of the real world.

VIII. Conclusion

I hope that this survey of certain issues in the arms control, nonproliferation, and disarmament realm ought to offer some interesting substantive reference points as we all watch how things develop.



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