



Nuclear Weapons: From Opposition to Abolition

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Articulate a path, a plan, for the total elimination of nuclear weapons.

Uses existing treaties, cooperative negotiation and verification to achieve complete nuclear weapons elimination.

Current State of Nuclear Weapons		
Nation	Deployed Warheads	Total Warheads
United States	1670	5240
Russia	1590	5980
China	270	350
United Kingdom	120	225
France		~300
India	128	160
Pakistan		~165
Israel		~90
North Korea		~20-30
		12,540 Total Warheads

Inventory of nuclear warheads in the world today. The numbers come from the Bulletin of the Atomic Scientists Nuclear Notebook which is freely available online. See <https://thebulletin.org/nuclear-notebook/>. All the numbers are rounded off to make them easier to digest.

Over 12,500 nuclear warheads in the world today. US and Russia account for over 11,200.

The first column of the table, Deployed Warheads, are warheads that are mated to ballistic missiles or stored close to dedicated bomber aircraft. For the most part they are essentially ready to launch on short notice. For the US that number includes 970 warheads loaded in Trident ballistic missile submarines, 400 in Minuteman ICBM silos, and 300 at 2 bomber bases in the U.S. In 1986 there were over 70,000 warheads in the world, but since 2010 the numbers haven't changed much. It's time to renew efforts to dismantle warheads.

The Way to Nuclear Disarmament

1. Call on the US and Russia to dismantle non-deployed nuclear warheads.

Phase 1: Since 90% of the warheads are controlled by the US and Russia we must reduce those stockpiles before we can expect the other 7 nuclear armed states to reduce theirs.

The majority of nuclear warheads in both the US and Russia's stockpiles are not deployed.

"Not Deployed" means the warheads are stored separate from launchers and are not available for use on short notice.

Includes obsolete, but intact, warheads maintained in storage bunkers.

Nation	Deployed Warheads	Non-deployed Warheads
United States	1670	3570
Russia	1590	4390
China	270	80
United Kingdom	120	105
France		~300
India	130	30
Pakistan		~165
Israel		~90
North Korea		~20-30

7960 US and Russian warheads are not deployed

You can see here that the US and Russia have nearly 8,000 non-deployed warheads. With national security strategies generally based on strategic deterrence using deployed warheads, reduction of non-deployed warheads can be accomplished without affecting readiness.

Non-deployed Warheads				
	Retired	Strategic Reserve	Tactical	Total
US	1540 (DOE)	1840	200	3580
Russia	1500	980	1910	4390

Breaking down non-deployed warheads, the US and Russia each have over 1500 retired warheads in storage. The US warheads are mostly intact assemblies stored under Department of Energy control near Albuquerque.

Retired warheads can be dismantled unilaterally, dramatically reducing the US stockpile by nearly 40% with no change in our government's national security strategy. The US dismantled an average of over 1000 warheads per year in the 1990's. In 2020 184 warheads were dismantled. The Biden administration has refused to disclose numbers for 2021 and 2022. Russia has a comparable number and could do the same.

To reduce inventories both nations should resume dismantling warheads as they did prior to 2010. This can be done unilaterally or bilaterally. It has no effect on readiness, but demonstrates intent. Moving to the next 2 columns, note that the U.S. has a larger strategic reserve while Russia has more tactical warheads. Dismantling those warheads will require effective bilateral cooperation with Russia.

The Way to Nuclear Disarmament
1. Call on the US and Russia to dismantle non deployed warheads
2. Renegotiate New START with Russia to achieve a "minimum deterrent" strategy

Phase 2. Renegotiate the Strategic Arms Reduction Treaty with Russia. Recognize that the war in Ukraine complicates bilateral negotiations with Russia, but it is vital that they move forward. Call on the Biden State Department to do this now and not pass this important work to the next administration.

Demand that the new treaty provide for a transition to minimum deterrence that results in a level playing field with Russia, China and the other six nuclear weapons states. New reduction will form a basis for future negotiations leading to total elimination of nuclear weapons.

Next version of START must reduce the number of deployed warheads and their launchers, and the treaty must apply to non-deployed warheads as well.

New START (Strategic Arms Reduction Treaty)

- Bilateral treaty between US and Russia.
- Limits deployed warheads to 1550 and deployed launchers to 700.
- Provides for verification.
- Does not limit non-deployed warheads.

New START ratified 2010. Key word in the acronym is Reduction. New START is the one treaty that limits the number of deployed warheads that the U.S. and Russia can maintain. In 2021 the U.S. came perilously close to allowing New START to expire. Treaty was scheduled to expire on February 5, 2021, just 2 weeks after the start of the Biden administration. The Trump administration opposed extending the existing treaty and failed to negotiate a new treaty. Commend the Biden administration and the Russian government for managing to extend the treaty, only 2 days before it expired! It's now in force until 2026.

That was a big deal! New START has the "gold standard" of verifications. Without New START inspections and notifications conducted by both sides to enforce the treaty would cease. Intrusive on-site inspections, open skies agreements, and extensive notifications of tests and weapons movements have raised confidence by providing a reciprocal window into deployed weapons status. Without New START there would be no limit on the number of deployed nuclear weapons. On-site inspections have been paused since 2020 due to COVID. Since then negotiations to resume have broken down due to the war in Ukraine. It is imperative that this important part of the Treaty get back on track.

Minimum Deterrent

- An application of deterrence theory in which a state possesses no more nuclear weapons than is necessary to deter an adversary from attacking.
- Several government and non-government studies have concluded 300 to 1000 warheads are credible.
- Based on the types and yields of warheads currently deployed, 500 is a reasonable round number.

Minimum Deterrence is a transitional level that the U.S. and Russia must achieve before the final phase of reductions can begin. It's about the concept. Specific numbers aren't that important. Minimum deterrence requires a no first use policy and is essentially retaliatory. India and China have both adopted minimum credible deterrence strategies. Minimum deterrence is incompatible with counterforce missions. Those are attacks designed to destroy the adversary's nuclear weapons. Counterforce only makes sense as a first strike option. Minimum deterrence won't support multilateral security commitments. Means there would be no more nuclear umbrella for our allies. Provides motivation for NATO states and the Pacific allies to join Treaty for the Prohibition of Nuclear Weapons.

How would the US achieve “minimum deterrent”?

1. Decommission all 400 ICBM Silos
2. Decommission all 46 B-52 Bombers
3. Decommission 6 of 14 Trident SSBNs
4. Remove 100 tactical warheads from Europe

Many formulas for reducing deployed weapons to achieve minimum deterrent. ICBM's are most vulnerable to a counterforce first strike, so there is great urgency to use them. Because of that they should be eliminated early in the process. The Air Force of course disagrees. The idea is that the minimum deterrent strategy is transitional to the total elimination of nuclear weapons.

It should be apparent that new replacement strategic weapons system funding would be terminated. That means cancelling the Columbia Class SSBN, the Ground Based Strategic Deterrent, and the B-21 Bomber programs.

That's a lot of money not going to the arms industry, so you can imagine the resistance they would put up.

Non-deployed strategic reserve and tactical warheads must be eliminated under the next START

	Strategic Reserve	Tactical	Total
US	1840	200	2040
Russia	980	1910	2890

New START doesn't apply to non-deployed warheads. The next iteration must. If this treaty had been allowed to expire in 2021, the US was positioned to double its deployed warheads in a matter of weeks. Look at the US Strategic Reserve number.

1000 W76-1 warheads are divided between the 2 Trident bases. Those warheads could be uploaded into vacant spots on Trident 2 missiles on the SSBN's. Each missile can carry up to 8 warheads; they are currently loaded with 4-5 warheads per missile.

400 W-78 warheads stored at Warren AFB in Wyoming. Those could be uploaded into vacant spots on Minuteman III ICBM's.

Several hundred bomber weapons that could be deployed.

Strategic reserve and tactical warheads must be eliminated as an essential part of the next START. As long as those warheads remain available, they can be deployed whenever tensions rise between the US and Russia.

Limit reserve warheads to 150. This level allows for normal maintenance and rotation of ballistic missile submarines and bombers.

Minimum Deterrent with 150 warhead reserve

Nation	Deployed Warheads	Total Warheads
United States	500	650
Russia	500	650
China	270	350
United Kingdom	120	225
France		~300
India	130	160
Pakistan		~165
Israel		~90
North Korea		~20-30

Worldwide Total = 2600

650 warheads each for the US and Russia and about 1300 total for the other 7 nuclear weapons states combined. Level will take several years to achieve.

And what's left in the U.S. stockpile?

1. Zero ICBM's and warheads
2. 20 B-2 Bombers with a total of 40 B-61 warheads
3. 8 Trident SSBN's with 16 missiles and 72 warheads each (6 ships deployed and 2 in maintenance with missiles/warheads in reserve status)

Which adds up to 472 deployed and 144 non-deployed warheads!

One formula that illustrates a minimum deterrence posture. The Air Force would prefer to retain the strategic triad concept with some ICBM's and fewer Tridents.

Complies with a minimum deterrent limit of 500 deployed and 150 reserve warheads.

Additional START Provisions

- Continue on-site inspections, open skies agreements and notifications.
- Provide for verification of warhead dismantling and launcher decommissioning.
- Require destruction of plutonium pits and their fabrication facilities.
- Negotiate a separate bilateral Treaty with China

Next START must continue “gold standard” inspection and verification protocols.

3rd bullet is really important. It is vital that the pits are destroyed to prevent their use in rearmament efforts. If you have a pit you can build a bomb. Currently there are over 15,000 pits stored at the Pantex site in Texas. A project to convert Pu pits to mixed oxide fuel for use in commercial reactors was terminated in 2018. DOE is now funded to produce new pits. We should call on the U.S. to terminate new pit production and commit to destroying all old pits in storage as well as pits that are removed from active warheads as they are dismantled.

Finally, we call on the Biden administration to enter into similar bilateral negotiations with China to stem its plans for nuclear weapons expansion during a period of US and Russian reductions.

“15,000 pits” ref: SRSWatch 03/18/22 (<https://srswatch.org/safety-board-concerned-about-safety-of-plutonium-pit-storage-at-does-pantex-site-in-texas-implications-for-unsafe-production-at-proposed-srs-plutonium-bomb-plant-pbp/>)

The Way to Nuclear Disarmament

1. Call on the US and Russia to dismantle non deployed warheads
2. Renegotiate START Treaty
3. Enter negotiations under Article 6 of the NPT including all nuclear weapons states leading to complete disarmament under United Nations control

Final phase: Drawing down the US and Russian stockpiles is a multi-year evolution.

Decommissioning and dismantling warheads and launchers under the Next START would lower US and Russian stockpiles to about 650 warheads each. During this process the total stockpiles of the other 7 nuclear weapons states combined should remain around 1300 warheads.

This is a manageable number to enter the final phase. At this level or close to it, multilateral negotiations among all 9 nuclear weapons states under the terms of Article 6 of the Nonproliferation Treaty can occur.

Nonproliferation Treaty (NPT)

Article 6 requires nuclear armed states to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control.

191 nations are party to the treaty.

India, Pakistan, and Israel never entered.

North Korea withdrew in 2003.

2022 NPT Review Conference ended in August without consensus on a final statement. The nuclear weapons states, primarily the US and Russia, engaged in politically charged conflict over the war in Ukraine, which derailed the Conference.

Despite lack of progress, I remain convinced more than ever that renegotiation of New START is the key to leveling the playing field between the US, Russia and the other nuclear armed states. Until that happens and there is political will among the great powers, meaningful multilateral negotiations are destined to fail.

Treaty on the Prohibition of Nuclear Weapons (TPNW)

- Signed by 92 nations, ratified by 68 nations.
- Not signed by any of the 9 nuclear weapons states.
- Not signed by the “nuclear allies”: 27 NATO nations, nor South Korea, Japan, and Australia.

TPNW gives voice to the majority of countries that are largely disenfranchised by the global nuclear order.

It will remain incomplete until the 9 nuclear weapons states agree to disarm. However that doesn't diminish its importance. I believe it will emerge as the final unifying document at the end of the nuclear age.

The Way to Nuclear Disarmament

Finally, each former nuclear weapons state shall sign and ratify the TPNW, and submit to verifications under a Safeguards Agreement with the International Atomic Energy Agency

Verification is key to nuclear disarmament. We know that cooperative verifications work; the US and Russia have conducted hundreds of intrusive inspections and thousands of notifications to verify deployed launchers and warheads under New START and other treaties. Similar “gold standard” inspections under the control of the United Nations can and will ensure compliance, but only if the great powers commit to permanent funding of inspection and verification protocols.



The Way to Nuclear Disarmament

It's that simple. Imagine the total elimination of nuclear weapons!

Peace is possible