

DRAFT PLAN FOR A GRADUATED REDUCTION FROM NUCLEAR DISARMAMENT TO TOTAL ABOLITION

An Integrated Framework Bridging the NPT, TPNW, and the START Regime

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Abstract

This paper presents an integrated, phased proposal for the global elimination of nuclear weapons over a twenty-year horizon. Recognising that the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), the Treaty on the Prohibition of Nuclear Weapons (TPNW), and the U.S.–Russia Strategic Arms Reduction Treaties (START) have each operated in relative isolation, this draft outlines a framework that bridges all three regimes through a single Multilateral Nuclear Reduction Treaty (MNRT). The proposal requires all nine nuclear-armed states to accede to the MNRT, submit verified inventory data to the IAEA, and proceed through two concurrent but differentiated phases of reduction. In Phase 1 (Years 1–10), non-P5 states complete full disarmament while the P5 states simultaneously achieve a 30% reduction in their combined stockpiles. In Phase 2 (Years 11–20), the P5 states eliminate their remaining arsenals entirely. Strategic balance between the Western bloc (US, UK, France) and the Eastern bloc (Russia, China) is maintained throughout. Post-abolition governance of high-enriched fissile material — retained for legitimate planetary-scale applications — is addressed through a UN Security Council–supervised authority. The paper identifies the key political, technical, and verification challenges and proposes mechanisms to address each.

1. Introduction

From the atomic bombings of Hiroshima and Nagasaki during World War II to the present day, the atomic bomb has continued to exist as the weapon with the greatest destructive power as a military instrument. Without ever resorting to that threat, humanity has progressed while maintaining the global balance of power. The possession of nuclear weapons is not confined to the five permanent members of the UN Security Council (the P5); other nations continue to pursue nuclear programmes, and the challenge of nuclear governance persists globally. Among various initiatives, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) has been a key focus of countermeasures. In addition to initiatives under the NPT, a new framework — the Treaty on the Prohibition of Nuclear Weapons (TPNW) — was established in recent years, even as the renewal of the U.S.–Russia Strategic Arms Reduction Treaty (START) stagnated amidst a complex geopolitical situation.

Although these three measures share a common objective of reducing and eliminating the threat of nuclear weapons, they are not currently functioning in an integrated manner. This draft proposal outlines a path toward the reduction and elimination of the total stockpiles of nuclear weapons of various types held by each country. This proposal sets numerical targets for the gradual reduction of nuclear stockpiles, contingent upon all nuclear-armed states joining the U.S.–Russia START treaty and sharing their nuclear inventory data. More specifically, attention must be paid to maintaining the balance of power during the reduction process.

The framework operates across two concurrent but differentiated phases within a 20-year timeline. In the first 10 years, non-P5 nuclear-armed states — India, Pakistan, North Korea, and Israel — complete full disarmament. Crucially, the P5 states do not stand idle during this period: they are required to begin meaningful reductions from Year 1, targeting an approximately 30% decrease in their combined stockpiles by the end of Year 10. This concurrent reduction serves both as a demonstration of good faith to non-nuclear states and as a structural requirement for maintaining balanced deterrence throughout the

transition. In the second 10 years, the P5 states eliminate their remaining arsenals entirely. Throughout both phases, the reduction targets for the P5 states are calibrated so that the aggregate totals of the U.S., UK, and France versus Russia and China remain balanced at all times.

Even after the completion of nuclear weapons abolition, the possession of high-enriched fissile material remains necessary for humanity for peaceful purposes — for example, correcting the trajectory of massive asteroids in space, or the mitigation of geological strain that induces earthquakes and volcanoes. The management and use of such nuclear materials shall be determined by the P5 states under the authority of the United Nations Security Council. Furthermore, in the event that the UN system undergoes reform in the future, an appropriate operational framework shall be adopted accordingly.

2. Current Global Nuclear Landscape

As of early 2025, nine states collectively possess approximately 12,241 nuclear warheads, of which roughly 9,614 are considered operationally available (SIPRI Yearbook 2025). Of those, an estimated 3,912 are deployed with missiles and aircraft, and approximately 2,100 are kept on high operational alert. The United States and Russia together account for approximately 86–90% of all warheads in existence.

While the total number of warheads has decreased since the Cold War, the modernisation of arsenals and the expansion of stockpiles in certain regions present new challenges. China's nuclear arsenal is growing faster than any other country's — by approximately 100 new warheads per year since 2023 — and is projected to reach 1,000 by 2030. The non-P5 nuclear-armed states, though smaller in total warhead count, contribute to regional instability and underscore the persistent challenge of nuclear governance.

Category	Country	Est. Warheads (2025)	Role in Framework
P5 (Western)	United States	5,177	Primary Disarmament Party
P5 (Western)	France	290	Supporting Disarmament Party
P5 (Western)	United Kingdom	225	Supporting Disarmament Party
P5 (Eastern)	Russia	5,459	Primary Disarmament Party
P5 (Eastern)	China	600	Primary Disarmament Party
Non-P5	Pakistan	170	Phase 1 Disarmament
Non-P5	India	172	Phase 1 Disarmament
Non-P5	Israel	90	Phase 1 Disarmament
Non-P5	North Korea	50	Phase 1 Disarmament
Total		12,243	

Table 1 — Estimated Global Nuclear Warhead Inventories (2025). Source: SIPRI Yearbook 2025; FAS 2026.

The current geopolitical climate is characterised by the expiry of New START between the United States and Russia in February 2026 without a successor agreement. Furthermore, the rise of China as a major

nuclear power necessitates its inclusion in any future strategic arms reduction agreements to maintain a global balance of power. India–Pakistan tensions, including a brief armed exchange in early 2025, further underscore the urgency of a comprehensive multilateral framework.

3. The Integrated Disarmament Framework

The proposed plan integrates the non-proliferation goals of the NPT, the humanitarian prohibitions of the TPNW, and the verifiable reduction mechanisms of the START regime into a single Multilateral Nuclear Reduction Treaty (MNRT). Each existing instrument has a distinct limitation: the NPT obligates but does not operationalise; the TPNW prohibits but lacks the participation of those it most needs to bind; and the START process — the only instrument with concrete verification mechanisms — has collapsed. The MNRT is designed to remedy this structural fragmentation.

Three Foundational Pillars

1. Universal Accession to the MNRT

All nine nuclear-armed states must join the Multilateral Nuclear Reduction Treaty, committing to rigorous inspection regimes and data sharing. Unlike bilateral START, the MNRT includes differentiated obligations reflecting different stockpile sizes.

2. Transparency and Verification

Each state must submit a verified, comprehensive declaration of its total nuclear warhead inventory — including tactical warheads — to the IAEA within 18 months of MNRT entry into force. A Permanent Verification Commission (PVC) meeting quarterly will oversee compliance through on-site inspections, satellite monitoring, and data exchanges.

3. Strategic Stability Throughout

Reductions must be conducted so that no single state or bloc gains a decisive military advantage at any stage. The inter-bloc balance between the Western (US, UK, France) and Eastern (Russia, China) blocs must not deviate by more than 10% at any annual checkpoint, verified independently by the PVC.

4. Phase 1 — Concurrent Disarmament (Years 1–10)

The first decade focuses on two simultaneous tracks. Non-P5 states complete total disarmament while the P5 states begin their own graduated reductions — targeting a 30% combined decrease from baseline. This dual approach is critical for demonstrating global commitment, reducing regional tensions, and maintaining strategic balance.

4.1 Non-P5 Full Disarmament

India, Pakistan, North Korea, and Israel will reduce their arsenals to zero by the end of Year 10. Each state's annual reduction schedule will be negotiated individually, reflecting unique strategic circumstances,

but the endpoint is non-negotiable. Warheads and fissile material are transferred to IAEA-supervised storage facilities as reductions proceed.

To incentivise participation, the MNRT includes binding security assurances from the P5 guaranteeing the territorial integrity of each disarming non-P5 state — stronger than the Budapest Memorandum of 1994. The UN Security Council authorises a conventional deterrence pledge from the P5 as a supplementary guarantee.

State	Est. Warheads (2025)	Annual Reduction	Completion
India	~172	~17 / year	Year 10
Pakistan	~170	~17 / year	Year 10
Israel	~90	~9 / year	Year 10
North Korea	~50	~5 / year	Year 10

Table 2 — Non-P5 Disarmament Schedule (illustrative). Precise figures subject to verified baseline data.

4.2 Initial P5 Reductions

To incentivise non-P5 compliance and demonstrate good faith, the P5 states concurrently reduce their arsenals by 30% of total stockpiles over the first 10 years. This reduction is carefully managed to maintain the strategic balance between the Western bloc (US, UK, France) and the Eastern bloc (Russia, China). The 30% pace is commensurate with the historical rate achieved under the original START I Treaty (1991–2001), establishing it as ambitious yetprecedented.

Year	Western Bloc Target (US + UK + France)	Eastern Bloc Target (Russia + China)	P5 Reduction %
1 (Baseline)	5,692	6,059	0%
5	4,838	5,150	15%
10	3,984	4,241	30%

Table 3 — Phase 1 P5 Reduction Schedule (illustrative). Baseline derived from verified IAEA inventory data.

5. Phase 2 — Final P5 Disarmament (Years 11–20)

The second decade completes the elimination of P5 arsenals, beginning from the reduced baseline achieved at the end of Year 10. Building on the verification confidence and political momentum accumulated during Phase 1, the pace of reduction accelerates. The bloc-balance principle continues to apply: the Western bloc aggregate must track the Eastern bloc aggregate within 10% at every annual checkpoint.

The P5 states synchronise their reductions quarterly. If any party fails to meet a target or violates transparency protocols, the process is paused until compliance is restored. This mechanism ensures that no bloc is left vulnerable during the transition to a nuclear-free world.

Year	Western Bloc Target (US + UK + France)	Eastern Bloc Target (Russia + China)	Cumulative P5 Reduction %
10 (Phase 2 Baseline)	3,984	4,241	30%
11	3,585	3,817	37%
13	2,789	2,968	51%
15	1,992	2,120	65%
17	1,195	1,272	79%
19	398	424	93%
20	0	0	100%

Table 4 — Phase 2 P5 Final Elimination Schedule. Year 20 target: total global abolition.

6. Maintaining Strategic Balance During Reduction

The most technically challenging aspect of graduated nuclear disarmament is managing strategic stability during the transition. As arsenals shrink, the ratio between offensive and defensive capabilities shifts, and the temptation to break out — to cheat or conduct a rapid sprint to re-armament — may increase, particularly at low numbers. Three mechanisms address this risk:

- **Second-strike assurance:** The pace of reduction is calibrated to remain above the threshold at which any single first strike could destroy all of an adversary's remaining forces. Until Year 17 of the overall timeline, each P5 bloc retains more than 1,000 warheads — a level at which second-strike assurance remains robust. The concurrent start of P5 reductions from Year 1 prevents the sharp asymmetry that would arise if P5 arsenals remained frozen while non-P5 states disarmed.
- **Launch notification:** The MNRT incorporates mandatory 48-hour advance notification for any ballistic missile test launch, reducing the risk of misinterpretation that becomes more acute at lower warhead numbers.
- **Permanent Verification Commission (PVC):** Composed of all nine MNRT signatories plus five rotating non-nuclear observer states, the PVC meets quarterly in Vienna and can convene emergency sessions at any signatory's request. Its inspection authority is analogous to the IAEA Additional Protocol.

6.1 Conventional Force Stabilisation

Nuclear deterrence does not exist in isolation. A state conventionally inferior to a potential adversary is less likely to relinquish nuclear weapons. The MNRT therefore includes a parallel track of Conventional Force Stabilisation Measures (CFSMs), requiring mutual restraint from destabilising postures — forward basing of massed armour, pre-emptive doctrines, and large-scale snap exercises near borders — without requiring full conventional parity.

6.2 Missile Defence Transparency

Missile defence systems can negate second-strike assurance by potentially intercepting residual retaliatory forces after a first strike. The MNRT calls for a multilateral missile defence transparency regime in which states share technical data on the capabilities and limitations of their interceptor systems. Defences may be retained for legitimate non-nuclear functions but must not be sized to neutralise a deterrent force at the scale maintained at each stage of the reduction schedule.

7. Verification and Enforcement Architecture

The MNRT's verification regime builds on New START as its foundation and expands it in four critical directions:

Multilateralisation

All nine nuclear-armed states, not just two, are subject to the same inspection and data-sharing obligations.

Full-spectrum coverage

Non-strategic (tactical) warheads, explicitly excluded from New START, are covered. Russia's estimated 2,000 tactical warheads make this essential.

Fissile Material Cutoff

States cease production of weapons-grade highly enriched uranium and plutonium from the MNRT's entry into force, effectively incorporating the long-stalled FMCT negotiations as a component.

Continuous Monitoring

Advances in seismic monitoring (leveraging the CTBT verification infrastructure), satellite imagery analysis, and AI-assisted open-source intelligence supplement traditional inspection mechanisms.

Enforcement Tiers

Tier	Trigger	Response
Tier 1 Technical Non-Compliance	Failure to meet a scheduled reduction milestone	Automatic suspension of the non-complying state's MNRT rights, pending PVC investigation
Tier 2 Verified Cheating	Discovery of undeclared warheads or production activities	Referral to UN Security Council under Chapter VII; automatic targeted economic sanctions
Tier 3 Withdrawal / Breakout	Formal withdrawal from MNRT or acquisition of new nuclear weapons	Security Council-authorized response; MNRT parties may reconstitute deterrent forces to restore balance

Table 5 — Three-Tier Enforcement Architecture.

8. Post-Abolition Management of Fissile Materials

The total abolition of nuclear weapons does not imply the elimination of high-enriched fissile materials. These materials possess unique properties essential for the long-term survival and advancement of humanity.

8.1 Legitimate Scientific Applications

- **Asteroid Deflection:** High-enriched uranium and plutonium are the only materials capable of providing the energy density required to alter the trajectory of massive asteroids on a collision course with Earth. NASA's Double Asteroid Redirection Test (DART) programme has validated kinetic impactors at smaller scales; nuclear standoff detonation may be the only viable method for larger objects within available response times.
- **Geological Strain Mitigation:** Theoretical models suggest that controlled subsurface releases of energy could alleviate tectonic pressure, potentially reducing the risk of catastrophic earthquakes or volcanic eruptions. While these applications remain at the frontier of geophysical research, they represent a legitimate category of use requiring internationally supervised access to nuclear materials.

8.2 Post-Abolition Fissile Material Authority (PAFMA)

The remaining stockpiles of fissile material will be consolidated into a limited number of secure, internationally monitored facilities. The proposal calls for the establishment of a Post-Abolition Fissile Material Authority (PAFMA), operating under the authority of the UN Security Council, jointly administered by the P5 states. PAFMA's mandate encompasses:

- Secure custody and inventory management of all dismantled warhead materials.
- Disposition of excess HEU through downblending to reactor-grade fuel where technically feasible.
- Long-term storage in deep geological repositories developed under international supervision.
- Licensing and operational control of any nuclear device deployed for planetary defence or other approved purposes.
- Annual reporting to the UN General Assembly on the status of fissile material stocks.

Any use of these materials must be approved by a majority vote of the Security Council, ensuring they are never again weaponised. PAFMA's governance structure includes a Board comprising the P5 states plus six rotating members elected by the UN General Assembly. If the UN system undergoes structural reform in the future, the PAFMA charter will require parallel amendment, ensuring that whatever governing body assumes P5 functions will also assume PAFMA's oversight responsibilities.

9. Key Challenges and Prospects

Political Will

All nine nuclear-armed states are currently engaged in modernisation programmes. The collapse of New START, Russia's suspension, and China's rapid build-up make the near-term prospect of achieving the foundational conditions appear difficult. Yet political conditions shift rapidly: the TPNW now commands 73 states parties, the 2024 Nobel Peace Prize awarded to Nihon Hidankyo re-energised global advocacy, and Japan's leadership of the 94-state joint disarmament statement at the 2024–2025 NPT PrepCom shows that even nuclear-umbrella states can play a constructive bridging role.

Verification at Low Numbers

Below ~500 warheads per state, verification demands increase dramatically. Small caches of concealed warheads could confer decisive strategic advantage. The Phase 1 decade — verifying non-P5 disarmament — builds precisely the verification confidence needed for Phase 2's deeper P5 reductions.

Extended Deterrence and Alliance Architecture

Several non-nuclear states rely on extended nuclear deterrence from the United States, France, or the United Kingdom. Credible alternative security assurances must be in place before those guarantors can disarm. The MNRT's binding security guarantee mechanism and UN Security Council-backed conventional deterrence pledges are designed to address this concern.

Emerging Technological Complications

Hypersonic glide vehicles, AI-assisted nuclear command and control, and dual-use delivery systems create new verification challenges not present in Cold War frameworks. The PVC must develop new technical and political protocols for each category, likely requiring significant investment in confidence-building measures before Phase 2 begins.

10. Conclusion

The path from nuclear disarmament to total abolition is fraught with technical and geopolitical hurdles. However, by integrating existing treaty frameworks — the NPT, TPNW, and START — and adhering to a strict, balance-oriented, dual-phase timeline, humanity can transition away from the shadow of nuclear annihilation.

This proposal provides a realistic roadmap that respects the security concerns of all nations while prioritising the collective safety of the planet. Its most distinctive features are: the insistence on verified baseline data as a precondition for any reduction; the concurrent P5 reduction commitment from Year 1 — demonstrating that the nuclear-armed permanent members are not asking others to disarm while they stand still; the bloc-balance mechanism ensuring strategic stability throughout; and the post-abolition governance framework for fissile material, acknowledging that the end of nuclear weapons is not the end of the nuclear age, but its transformation.

The ultimate goal is a world where nuclear energy is exclusively a tool for progress, managed by a reformed and robust international governance system. The hibakusha of Hiroshima and Nagasaki have offered the world their testimony across eight decades. The obligation to act on that testimony grows more

urgent with each passing year.

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* Draft for academic and policy discussion only. All warhead figures are estimates drawn from open-source data (SIPRI, FAS) and may not reflect classified inventories.