

## **PREVENTATIVE EFFECTS OF THE PROPOSED FISSILE MATERIAL CUT-OFF TREATY (FMCT) ON THE GLOBAL THREAT OF NUCLEAR TERRORISM**

**Stefani Stojchevska**, MSc, PhD Candidate of International Law

s.stojchevska@seeu.edu.mk

**Bekim Nuhija**, PhD, Full Professor of International Law

b.nuhija@seeu.edu.mk

South East European University – Faculty of Law, Tetovo, Macedonia

### **Abstract**

With nuclear weapons being rapidly proliferated in recent times, most experts on international relations evidently claim that humanity is desperately seeking security in an otherwise unsecure world. This research paper provides a brief legislative analysis of the proposed Fissile Material Cut-Off Treaty (FMCT) with regards to reducing the risk of nuclear terrorism and the simultaneous promotion of “international responsibility”. However, negotiations on a FMCT have not yet officially begun due to some States increasing their production of highly enriched uranium (HEU) and plutonium as the key components to developing nuclear or other explosive weapons. This worrisome situation raises concerns revolving around the potential acquisition of nuclear weapons by non-state actors who often hold radical political ideologies. An international treaty such as the proposed FMCT is

believed to demonstrate significant contributions towards the ultimate support against nuclear weapons proliferation and utilization. Hence, the international community deems stalemates of negotiations for a FMCT unacceptable in the Conference on Disarmament (CD). And while it is not possible to completely eliminate dangers and threats of nuclear terrorism in the near future, they can be successfully mitigated through collaborative efforts on a global scale, provided that political obstacles and objectives do not ultimately prevail.

**Keywords:** International Law, Nuclear Terrorism, FMCT, Fissile Material, Nuclear Weapons, Nuclear Proliferation

## Introduction

Ever since the 1950s, proponents of nuclear disarmament have been striving to establish a Fissile Material Cut-off Treaty (FMCT) that would limit the quantity of fissile material accessible for the production of nuclear or other explosive weapons, thus providing a solid foundation for permanent reductions (IPFM 2006). Namely, plutonium and highly enriched uranium (HEU) represent the key components necessary for the development of nuclear weapons, which is why the effective management and removal of fissile materials are crucial towards advancing the notion of nuclear disarmament (CACNP 2009). Although the FMCT proposes a worldwide ban on the production of new fissile material for nuclear weapons, there is a disagreement as to whether the ban should include all fissile material or simply new fissile material as newer and smaller nuclear powers feel that such an agreement is biased against them (Futter 2015). Moreover, the notion of “fissile material” bears various definitions according to potential State signatories and other supporters of a FMCT; the definition of fissile material in the U.S. draft FMCT is in line with the International Atomic Energy Agency (IAEA) definition for weapon-usable or “direct use” material, covering uranium enriched to over 20% in U-235 or U-233, and plutonium containing less than 80% Pu-238. On the other hand, a different proposal was put forward by Russia in 2005 which aimed to prohibit the production of “weapon-grade” uranium and plutonium, which specifically refers to materials containing over 90% of the isotopes Pu-239 and U-235, respectively. Despite its limited scope, this particular definition did not garner support from other members of the Conference on Disarmament (CD) (IPFM 2006). Regardless of such disagreements, it is of crucial importance for scholars of international law to particularly focus upon the legal benefits of a FMCT.

## Critical Legislative Analysis

We begin our legislative analysis toward the preventative effectiveness of a FMCT on the global threat of nuclear terrorism by primarily emphasizing that both Russia and the U.S. (being recognized as Nuclear-Weapon States [NWS] signatories to the Non Proliferation Treaty [NPT]) have cooperated continuously to enhance export control measures and other components of the international regime in order to combat proliferation and nuclear terrorism. Such cooperation began in a major initiative known as the 1992 Russian-U.S. formal agreement to ban the production of fissile materials which was expanded to create the concept of a multilateral FMCT (Hafemeister 2003) and included guaranteeing negotiations and its enforcement with widespread (ideally universal) application (Brooks 2010). In addition, Non-Nuclear-Weapon States (NNWS), as signatories of the NPT, have already pledged to abstain from manufacturing fissile material for nuclear and other explosive weapons. These States are closely monitored and verified by the IAEA to ensure compliance (IPFM 2006). In other words, a FMCT would not have much practical effect on NNWS party to the NPT that decided to join. Under the NPT, those states are *already* prohibited from producing fissile materials for nuclear weapons and are obliged to accept comprehensive IAEA safeguards to verify that they are abiding by that prohibition. The FMCT, therefore, would not add to their existing obligations (Einhorn 2008). On the other hand, the practical effects of a FMCT would be more noticeable to NWS party to the NPT – should they decide to join – within the context of nuclear non-proliferation. This is an important aspect given that nuclear proliferation, among other risks included, enables the possibility of nuclear terrorism as a serious threat to worldwide nations (Jonas 2006). In particular, a FMCT could strengthen the non-proliferation regime in several ways, among which it would prohibit the five recognized NWS (Russia, the U.S., the U.K., France and China) from increasing their stocks of weapons

material, as well as demonstrate further movement toward meeting their arms limitation and reduction requirements under Article VI of the NPT and the agreed goals of both the 1995 NPT Extension Conference and the 2000 NPT Review Conference (Chyba et al. 2006). Thus, according to experts' beliefs, an international agreement of the likes of the proposed FMCT, besides the Comprehensive Nuclear-Test-Ban Treaty (CTBT), the Treaty on the Prohibition of Nuclear Weapons (TPNW) and the NTP, could lower the chances of a nuclear terrorist attack, even though the objectives of the aforementioned treaties are not specifically aimed towards combating nuclear terrorism (Fidler 2020), which may be additionally confirmed when reviewing the main objectives of the FMCT:

- (1) To secure a comprehensive ban on any further production of fissile material for any nuclear explosives;
- (2) To bring all production facilities that are not subject to any international inspections under a strict verification and monitoring regime;
- (3) To make the world safer from nuclear weapons; and
- (4) To make it obligatory for the parties to the FMCT not to produce fissile material for any nuclear devices and give any undertaking to accept verification and monitoring regime (Chatterjee 2010).

While international disarmament talks are expected to include topics such as complete nuclear disarmament, the arms race in outer space, and security guarantees for non-nuclear states, as well as to involve full "negotiations" on an international prohibition on the manufacture of new nuclear bomb-making material (France-Press 2009), negotiations on a FMCT have not yet officially begun due to some States increasing their production of fissile materials and consequently opposing such negotiations (Holloway 2013). According to the latest statistics provided by the

International Panel of Fissile Materials (IPFM), as of the beginning of 2023 (see: T-1) the global stockpile of unirridated HEU was estimated to be about 1,245 metric tons. Most of this material – about 1,100 metric tons – is in weapons or available for use in weapon programs. The global stockpile of separated plutonium was about 560 metric tons. Of this material, 420 metric tons were produced outside of weapon programs, covered by obligations not to use it in weapons, or not directly suitable for weapons. This leaves about 140 metric tons of plutonium in weapons or available for weapons (IPFM 2024).

**T-1: Fissile Material Stockpile (HEU and Plutonium [Pu]) at the Beginning of 2023**

Country	Total HEU, MT	Of this, HEU available for weapons, MT	Total Pu, MT	Of this, Pu available for weapons, MT	Undefined
<b>Russia</b>	680	672	193	88	873
<b>U.S.</b>	483	361	87.6	38.4	570.6
<b>U.K.</b>	23	22	119.6	3.2	142.6
<b>France</b>	29	25	98	6	127
<b>China</b>	14	14	3	2.9	17
<b>Pakistan</b>	5	5.1	0.54	0.54	5.54
<b>India</b>	5	/	10	0.7	15
<b>Israel</b>	0.3	0.3	0.9	0.9	1.2
<b>DPRK</b>	0.7	0.7	0.04	0.04	0.74
<b>Others</b>	4	/	47.6	/	/
<b>Total:</b>	<b>1245</b>	<b>1100</b>	<b>560</b>	<b>140</b>	<b>/</b>

More importantly, while recognized NWS have expressed their support toward a FMCT, newer NWS have expressed strong reservations. For instance, although North Korea signed on to the CD agenda to discuss a FMCT, it announced a step-up in plutonium production and threatened to enrich uranium amid international criticism for its missile tests. Further, Pakistan's opposition has also blocked FMCT negotiations for several years and has renewed its opposition, citing concerns about India's fissile material stockpile (CACNP 2013). With varying perceptions on a global level, the ongoing nuclear negotiations have expectedly come to a halt, causing a growing perception of the NTP being at its weakest point in history. This worrisome situation raises concerns about the potential acquisition of nuclear weapons by non-state actors. Namely, unlike state actors, these external partners are not deterred by nuclear capabilities and often hold radical political ideologies, making them more prone to engaging in nuclear terrorism (Shkolnikov 2023). Implicit yet never stated explicitly in the drive for FMCT negotiations to advance is the intention behind the illusion of progress. Many fear that not much is being done on the front of nuclear non-proliferation when there are no planned FMCT negotiations and no anticipated advancements on other significant arms control and non-proliferation programs. Stated differently, a new international agreement in the area of nuclear non-proliferation could allow for the feasible assertion that, at the very least, some progress has been made recently or is being discussed to safeguard the public from the threat of nuclear weapons, and that, by endorsing such an agreement, the U.S. is proving its adherence to the NPT Article VI. This is especially relevant in light of the current threat posed by nuclear terrorism (Jonas 2009), given that under the NPT Article VI, Nuclear-Weapon States (NWS) pledged to make "good faith" efforts in eliminating nuclear weapons due to their possession increasing the likelihood of their utilization, thus endangering the planet (Lendman and Asongu 2007). By

lowering the possibility of nuclear terrorism and encouraging “international responsibility” in society, the nuclear industry has duties to the IAEA in NNWS. Precise material accounting allows for constant presentation to the IAEA. Every factory has security and safety equipment installed, and global obligations foster an environment of accountability and openness. In contrast, the nuclear industry is seen as a subject of solely national concern in some NWS and governments that are not members of the NPT. The introduction of adequate discipline and accountancy standards would be possible through the verification of the FMCT and implement the notion of “international responsibility” concerning nuclear weapons (Schaper 2011). For many years, scenarios for a FMCT have been discussed in various academic and diplomatic forums. While the details of a future treaty are not clear, most states emphasize the benefits of verification due to its highly symbolic value for a paradigm shift – for the first time the NWS would accept international verification on fissile materials and production sites on their territories and report to the international community (Schaper 2010).

## **Conclusions and Recommendations**

The establishment of a FMCT would entail an agreement among the NWS to adhere to the fundamental principle of refraining from the development of fissile material for nuclear and other explosive weapons with the NNWS. The verification mechanisms for such agreement could resemble those already acknowledged by the NNWS under the NTP, albeit with certain limitations. Notably, any plutonium and HEU produced prior to the Treaty’s implementation would not be subject to inspection by the IAEA (CISAC 2005). Investing in inspections of the NWS is an important step in shifting nuclear mentalities toward more accountability and a small price for achieving a high non-proliferation payoff from the FMCT. Without a proper

verification regime the FMCT would lose many of its virtues (Grand 2000). Yet, numerous NNWS, particularly those affiliated with the Non-Aligned Movement have displayed hesitancy in endorsing counter-nuclear terrorism endeavors. This includes initiatives aimed at reducing HEU within the framework of the NPT review process and the IAEA, where it could be said that their reluctance stems from the belief that focusing on incremental measures detracts attention from the more urgent goal of nuclear disarmament (Potter 2008). Many scholars of international law agree that a FMCT should be discussed and negotiated in a short time, as far as overproduction of weapons-grade fissile materials in the world is obvious and extremely dangerous in view of the risk of nuclear terrorism (Nikitin and Oznobishchev 2008). Given the urgent imperative to lessen the risks of nuclear terrorism, the stalemate in the CD is no longer acceptable by the international community. Removing the linkages between various items on the CD's agenda is crucial to overcoming barriers that are hindering the start of productive work. Hence, it is suggested for the CD to promptly establish an *ad hoc* committee on a FMCT and delve into the matter of nuclear weapons-related issues without further delay (Lüdeking 2003). In summary, while it may not be possible to completely eliminate nuclear dangers and threats in the near future, they can be successfully mitigated through collaborative efforts on a global scale (Sun 2018). For the FMCT, effective verification is technically feasible. The obstacles are political in nature (Maerli 2006). The question is now whether start of negotiations on this long-stalled treaty is – at best – likely to be further delayed, or not abandoned altogether. Or, whether political de-emphasis of verification may in fact revive the interest in a FMCT as a norm-making institution and an operational tool amongst the treaty's key parties – most of whom have been well accustomed to nuclear autonomy (Schaper and Maerli 2007).

## Bibliography

- Brooks L (2010) "Leadership through Partnership: A Vision for the 2015 Nuclear Security Relationship between the United States of America and the Russian Federation." In: Sarkisov A and Gottemoeller R (eds.) *Future of the Nuclear Security Environment in 2015: Proceedings of a Russian-U.S. Workshop*. Washington: The National Academic Press, pp. 3-12.
- Center for Arms Control and Non-Proliferation (CACNP). *Factsheet on the Fissile Material Cutoff Treaty (FMCT) – 2009*. Available at: <https://armscontrolcenter.org/factsheet-on-the-fissile-material-cutoff-treaty-fmct/> (accessed 3 June 2024)
- Center for Arms Control and Non-Proliferation (CACNP). *Factsheet on the Fissile Material Cutoff Treaty – 2013*. Available at: <https://armscontrolcenter.org/fact-sheet-on-the-fissile-material-cutoff-treaty-fmct/> (accessed 3 June 2024)
- Center for Arms Control and Non-Proliferation (CACNP). *Thwarting nuclear terrorism through data-sharing*. Available at: <https://armscontrolcenter.org/thwarting-nuclear-terrorism-through-data-sharing/> (accessed 3 June 2024)
- Center for International Security and Cooperation (CISAC). *Preventing Nuclear Proliferation and Nuclear Terrorism: Essential steps to reduce the availability of nuclear-explosive materials*. Available at: [https://www.files.ethz.ch/isn/35463/2005\\_03\\_Preventing\\_Nuclear\\_Proliferation\\_and\\_Nuclear\\_Terrorism.pdf](https://www.files.ethz.ch/isn/35463/2005_03_Preventing_Nuclear_Proliferation_and_Nuclear_Terrorism.pdf) (accessed 1 June 2024)
- Chatterjee A (2010) *International Relations Today: Concepts and Applications*. New Delhi: Dorling Kindersley.
- Chyda C, Braun C and Bunn G (2006) "Strategies for Tackling Proliferation Challenges." In: *U.S. Nuclear Weapons Policy: Confronting Today's Threats*. Washington, DC: Brookings Institution Press, pp. 126-160.
- DefenseTalk. *Pakistan feels heat from nuclear powers over talks block*. Available at: <https://www.defencetalk.com/pakistan-nuclear-talks-block-21243/> (accessed 1 June 2024)
- Einhorn R (2008) "Controlling Fissile Materials Worldwide: A Fissile Material Cutoff Treaty and Beyond." In: Shultz G, Andreasen S, Drell S and Goodby J (eds.) *Reykjavik Revisited – Steps Toward a World Free of Nuclear Weapons: Complete Report of 2007 Hoover Institution Conference*. Stanford, CA: Hoover Institution Press, pp. 279-312.
- Fidler D (2020) "Nuclear, chemical and biological terrorism in international law." In: Saul B (ed.) *Research Handbook on International Law and Terrorism*. Cheltenham/Northampton: Edward Elgar Publishing Limited, pp. 80-96.
- Futter A (2015) *The Politics of Nuclear Weapons*. London: Sage Publications Ltd.
- Grand C (2000) "A Fissile Material Cut-Off Treaty and the Future of Nuclear Arms Control." In: Cirincione J (ed.) *Repairing the Regime: Preventing the Spread of Weapons of Mass Destruction*. Oxon/New York: Routledge, pp. 233-282.
- Hafemeister D (2003) "US nuclear security cooperation with Russia and transparency." In: Zarimpas N (ed.) *Transparency in Nuclear Warheads and Materials: The Political and Technical Dimensions*. Oxford: Oxford University Press, pp. 80-111.

- Holloway D (2013) "Nuclear Weapons and International Relations Since the End of the Cold War." In: Lundestad G (ed.) *International Relations Since the End of the Cold War: Old & New Dimensions*. Oxford: Oxford University Press, pp. 149-166.
- International Panel on Fissile Materials (IPFM). *Fissile material stocks*. Available at: <https://fissilematerials.org/> (accessed 9 June 2024)
- International Panel on Fissile Materials (IPFM). *Global Fissile Material Report 2006*. IPFM. Available at: <https://fissilematerials.org/library/gfmr06.pdf> (accessed 3 June 2024)
- Jonas D (2006) "The New U.S. Approach to the Fissile Material Cutoff Treaty: Will Deletion of a Verification Regime Provide a Way Out of the Wilderness?" *Florida Journal of International Law* 18(2): 597-678.
- Lendman S and Asongu J (2007) *The Iraq Quagmire: The Price of Imperial Arrogance*. Lawrenceville, GA: Greenview Publishing Company.
- Lüdeking R (2003) "Nuclear terrorism and nuclear arms control." In: Vingard K (ed.) *Disarmament Forum: Nuclear Terrorism*. Geneva: United Nations Institute for Disarmament Research (UNIDIR), pp. 3-6.
- Maerli M (2006) "Preventing nuclear terrorism by means of supply-side security." In: Dalgaard-Nielsen A and Hamilton D (eds.) *Transatlantic Homeland Security: Protecting society in the age of catastrophic terrorism*. Oxon/New York: Routledge, pp. 40-64.
- Nikitin A and Oznobishchev S (2008) "The Present and Future of Nuclear Doctrines." In: Nikitin A, Fitzpatrick M and Oznobishchev S (eds.) *Nuclear Doctrines and Strategies: National Policies and International Security*. Amsterdam: IOS Press, pp. 144-151.
- Peace Research Institute Frankfurt (PRIF). *A Treaty on Fissile Material: Just Cutoff or More?* (PRIF-Report No. 109). Available at: [https://www.prif.org/fileadmin/HSFK/hsfk\\_downloads/prif109.pdf](https://www.prif.org/fileadmin/HSFK/hsfk_downloads/prif109.pdf) (accessed 4 June 2024)
- Potter W (2008) "Countering the Threat of Nuclear Terrorism." In: Preez J (ed.) *Nuclear Challenges and Policy Options for the Next U.S. Administration*. Monterey, CA: James Martin Center for Nonproliferation Studies (CNS), pp. 31-36.
- Schaper A (2010) "Verifying the Nonproduction and Elimination of Fissile Material for Weapons." In: Hinderstein C (ed.) *Cultivating Confidence: Verification, Monitoring, and Enforcement for a World Free of Nuclear Weapons*. Stanford, CA: Hoover Institution Press, pp. 67-122.
- Schaper A and Maerli M (2007) "The Fissile Material Cut-off Treaty as a nuclear security policy driver." In: Maerli M and Lodgaard S (eds.) *Nuclear Proliferation and International Security*. Oxon/New York: Routledge, pp. 234-251.
- Sun X (2018) "Promoting Nuclear Disarmament and Non-proliferation in Parallel." In: Maiani L, Abousahl S and Plastino W (eds.) *International Cooperation for Enhancing Nuclear Safety, Security, Safeguards and Non-proliferation – 60 Years of IAEA and EUROATOM: Proceedings of the XX Edoardo Amaldi Conference, Accademia Nazionale dei Lincei, Rome, Italy, October 9-10, 2017*. Berlin: Springer, pp. 213-220.