
Convention on the Physical Protection of Nuclear Material (CPPNM) and Its Amendment Policy Recommendation for Pakistan

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The Convention on the Physical Protection of Nuclear Materials (CPPNM) and its 2005 Amendment serves as the structural base in the area of nuclear security. This paper suggests that the Pakistani government should continue supporting the CPPNM and its Amendment, take a more favorable position on the treaty, and clarify its cooperative stance.

Background

In the early 1970s, there were concerns in the international community regarding nuclear terrorism.^① Eventually, in 1974, US Secretary of State Henry Kissinger appeared at the UN and proposed establishing a convention that defined international regulations for the physical protection of nuclear materials.^②

With the help of IAEA's "Information Circular 225 (INFCIRC/225) – The Physical Protection of Nuclear Material,"^③ a draft materialized into a final agreement, "Convention on the Physical Protection of Nuclear Material."^④ The CPPNM was adopted on 26 October 1979, signed on 3 March 1980, and entered into force on 8 February 1987.^⑤

Post-9/11, however, there was a global concern to update the existing measures that evolved with the rapidly changing international security scenario.^⑥ Eventually, the State Parties to the CPPNM adopted by consensus an "Amendment" to the original agreement on 8 July 2005.^⑦

The "Amendment" strengthened the CPPNM and expanded the scope of obligations set out in the original treaty which eventually came into force on 8 May 2016. To this date, the CPPNM and its

① Wyn Bowen et al., *Nuclear Security Briefing Book*, (London: Centre for Science & Security Studies, 2020), 31.

② Mason Willrich, "Terrorist Keep Out! The problem of safeguarding nuclear materials in a world of malfunctioning people," *Bulletin of Atomic Scientists* 31, no.5 (1975): 16.

③ International Atomic Energy Agency, "The Physical Protection of Nuclear Material - INFCIRC/225," *IAEA*, September 1975. <https://www.iaea.org/sites/default/files/publications/documents/infcircs/1975/infcirc225.pdf> (accessed June 20, 2022).

④ Bowen et al., *Nuclear Security Briefing Book*, 33.

⑤ International Atomic Energy Agency, "The Convention on the Physical Protection of Nuclear Material - INFCIRC/274/Rev.1," *IAEA*, 1980. <https://www.iaea.org/sites/default/files/infcirc274r1.pdf> (accessed June 20, 2022).

⑥ Bowen et al., *Nuclear Security Briefing Book*, 40.

⑦ International Atomic Energy Agency, "Amendment to the Convention on the Physical Protection of Nuclear Material," *IAEA*, 2005. <https://www.iaea.org/sites/default/files/publications/documents/infcircs/1979/infcirc274r1m1c.pdf> (accessed June 20, 2022).

Amendment are the only legally binding international instrument for the physical protection of nuclear and radiological materials.

Content

Convention on Physical Protection of Nuclear Materials (1979)

The CPPNM obligates State Parties to meet the defined standards for international transport of nuclear materials for peaceful purposes. The treaty also criminalizes offenses related to theft, robbery, threats, or unlawful taking of nuclear materials.

Levels of Physical Protection Categorized

Physical protection for nuclear material in storage incidental to international transport	
Category III	Controlled access
Category II	Constant surveillance by guards or electronic devices Physical barrier with limited entry points
Category I	As defined for Category II. Access for trustworthy personnel only Surveillance by guards in communication with response forces
Physical protection for nuclear material during international transport	
Category III	Prior arrangement among sender, receiver, and carrier Prior agreement between natural or legal persons specifying the time, place, and procedures
Category II	
Category I	As defined for Category III and II Constant surveillance by escorts Communication with response forces

Table 1. Physical Protections for Different Categories

Categorization of Nuclear Material

Material	Form	Category		
		I	II	III
Plutonium ^①	Unirradiated	2 kg or more	Less than 2kg but more than 500 g	500 g or less but more than 15 g
Uranium-235	Unirradiated Uranium enriched to 20% 235U or more Uranium enriched to 10% 235U but less than 20% Uranium enriched above natural but less than 10% 235U	5 kg or more	Less than 5 kg but more than 1 kg 10 kg or more	1 kg or less but more than 15 g Less than 10 kg but more than 1 kg 10 kg or more
Uranium-233	Unirradiated	2 kg or more	Less than 2 kg but more than 500 g	500 g or less but more than 15 g
Irradiated fuel			Depleted or natural uranium, thorium, or low-enriched fuel (less than 10% fissile content)	

Table 2. Categorization of Nuclear Material

Amendment to CPPNM

The Amendment broadens the scope of the CPPNM in several ways.

- It broadens the scope of the original treaty to cover the physical protection of nuclear facilities and nuclear material used for peaceful purposes in domestic use, storage, and transport via Article 2.
- It provides for strengthened international cooperation to recover nuclear materials by the addition of Article 2A.

^① All plutonium except that with isotopic concentration exceeding 80% in plutonium-238.

- The Amendment further criminalizes offenses related to illicit trafficking and sabotage of nuclear material or nuclear facilities by revising Article 5 and Article 7.^①

Status

CPPNM 1979

The Convention was opened for signature on 3 March 1980 and entered into force on 8 February 1987.

- The total number of Parties to the CPPNM is 164, with 44 signatories.^②
- 41 Parties declared their reservations on being bound by the provisions of Article 17 paragraph 2 regarding international arbitration in case of a dispute.^③
- 17 Parties expressed their objections to the declaration of Pakistan of not being bound by Article 2 paragraph 2.^④

Amendment to CPPNM 2005

The Amendment was adopted on 8 July 2005 and entered into force on 8 May 2016.

- The total number of Parties to the Amendment is 129.^⑤
- 13 Parties made declarations/reservations and objections thereto after accepting, acceding, or ratifying the Amendment.^⑥

CPPNM and Amendment Benefits for Pakistan

In this liberal world order, international treaties and conventions act as the foundation for establishing the global norms for modern international relations. The CPPNM and its 2005 Amendment are no different. It is a binding agreement that aims to bring the world closer to global nuclear security issues. Together, the Convention and its Amendment allow countries to collaborate and build mutual trust.^⑦

① Article 5 and Article 7 primarily deal with the nuclear protection framework and criminal definitions related to nuclear materials. The Amendment expanded the scope of these Articles to include illicit trafficking and sabotage of nuclear materials and facilities with an increased cooperative framework.

② International Atomic Energy Agency, “CPPNM Status,” *IAEA*, September 20, 2021. http://www-legacy.iaea.org/Publications/Documents/Conventions/cppnm_status.pdf (accessed May 8, 2022).

③ International Atomic Energy Agency, “CPPNM - Declaration/Reservations and Objections Thereto,” *IAEA*, http://www-legacy.iaea.org/Publications/Documents/Conventions/cppnm_reserv.pdf (accessed June 20, 2022).

④ IAEA, “CPPNM – Reservations.”

⑤ International Atomic Energy Agency, “Amendment to CPPNM Status,” *IAEA*, http://www-legacy.iaea.org/Publications/Documents/Conventions/cppnm_amend_status.pdf (accessed June 20, 2022).

⑥ International Atomic Energy Agency, “Amendment to CPPNM - Declarations/Reservations and Objections Thereto,” *IAEA*, http://www-legacy.iaea.org/Publications/Documents/Conventions/cppnm_amend_reserv.pdf (accessed June 20, 2022).

⑦ Kathryn Crummitt, “A Treaty That Helps Protect Nuclear Material,” *United States Department of State*, March 24, 2022. <https://www.state.gov/a-treaty-that-helps-protect-nuclear-material/> (accessed June 20, 2022).

Pakistan has remained under global scrutiny for potential risks to nuclear security and its associated challenges since the inception of its clandestine nuclear program.^① Although it has a clean record of operating its civil nuclear facilities safely, Pakistan's nuclear plants are still considered a potential proliferation risk.^② By acceding and ratifying the CPPNM and its Amendment, Pakistan takes a necessary step towards building global trust in its status as a responsible nuclear state.

The Convention and its Amendment recognize that nuclear security within a state remains a sovereign national responsibility implemented through that country's laws. Without any intrusive verification mechanism, Pakistan stands to gain immensely in terms of trust with the global community without compromising its nuclear deterrence.

The Convention also provides a basic framework for Pakistan to ensure internal nuclear security. It has helped Pakistan establish the Pakistan Nuclear Regulatory Authority (PNRA), an independent, autonomous oversight body that ensures internal nuclear regulations.^③ It is significant since the regulatory body was established in 2001, well ahead of other advanced states such as India and Japan, meaning that the Convention has directly helped Pakistan develop faster than its peers.

Pakistan's borders are one of the most unstable in the world. As a nuclear-armed state operating seven commercial nuclear plants and several related facilities, Pakistan must prioritize nuclear security above other concerns. From global trust to internal security and development, Pakistan stands to gain immense benefits by acceding and ratifying the Convention and its Amendment.

CPPNM and Amendment Costs for Pakistan

The original CPPNM was carefully drafted under legitimate nuclear security concerns. After two years of careful deliberations with the Member States, the IAEA drafted an agreement to minimize most states' objections.^④ However, some costs are still attached, particularly to a state like Pakistan.

Even though Pakistan ratified the Amendment in 2016, the Convention holds the potential to slow down any rapid nuclear arsenal build-up by regulating domestic nuclear transport. This concern was evident when Pakistan objected to paragraph 2 of Article 2 of the original CPPNM in 2000.^⑤

The Convention also tends to favor the International Court of Justice instead of bilateral settlement in cases of dispute arising from the agreement, according to paragraph 2 of Article 17. Nuclear cases settling

① Sitara Noor, "Strengthening Pakistan's Nuclear Security Regime," *Pakistan Politico*, August 7, 2018. <https://pakistanpolitico.com/strengthening-pakistans-nuclear-security-regime/> (accessed June 20, 2022).

② Irfan Haider, "IAEA praises Pakistan's nuclear security record," *Dawn*, September 27, 2015. <https://www.dawn.com/news/1209311/iaea-praises-pakistans-nuclear-security-record> (accessed June 20, 2022).

③ Waseem Qutab, "Pakistan's nuclear security resolve," *The Express Tribune*, March 15, 2016. <https://tribune.com.pk/story/1066164/pakistans-nuclear-security-resolve> (accessed June 20, 2022).

④ Bowen et al., *Nuclear Security Briefing Book*, 33.

⑤ IAEA, "CPPNM – Reservations."

outside its borders holds the prospects for Pakistan losing its nuclear sovereignty. Pakistan shared its reservation regarding this provision with 41 other Parties when acceding to the Convention.^①

Policy Recommendations

Pakistan's conflicting relations amplified by its nuclear weapons program have the possibility of alienating itself from a world with liberal, democratic norms. It has managed to stay just shy of being declared a rogue state.^② The CPPNM and its Amendment offer a chance for Pakistan to reintegrate into the world order. Through careful consideration, this paper recommends three actions.

First, for any future Amendments to the Convention, Pakistan should support a clause that enables ratifying Parties to host an obligatory International Physical Protection Advisory Service (IPPAS) mission. While the mission helps the host country strengthen its nuclear security measures, supporting such a clause would help Pakistan stand out as a responsible and trustworthy nuclear state.

Second, Pakistan should withdraw its declaration that "It does not consider Article 11 of the Convention to be the legal basis for extradition." While this declaration can be easily misunderstood as an attempt by the state to protect AQ Khan's past proliferation network,^③ Pakistan must take steps to elevate itself above any suspicions of possible proliferation risks.

Finally, Pakistan should send a formal letter to the IAEA to remove its former objection to paragraph 2 of Article 2. At the time of accession to the CPPNM in 2000, 17 Parties voiced their objections to Pakistan's reservations.^④ Although that reservation becomes null and void after ratifying the Amendment,^⑤ Pakistan should clear the record as a symbol of support.

Pakistan must understand that nuclear security is not a goal, but a process, and must be ready for future related treaties. The CPPNM and its Amendment is a path for Pakistan to show its sincerity towards nuclear security and close its trust gaps with the world.

① Ibid.

② Jovito Katigbak and Don Gill, "Pakistan and the Rogue State Narrative," *RUSI Newsbrief* 40, no.5 (2020) <https://rusi.org/explore-our-research/publications/rusi-newsbrief/pakistan-and-rogue-state-narrative> (accessed June 20, 2022).

③ Aaron Arnold and Darya Dolzikova, "AQ Khan is Dead - Long Live the Proliferation Network," *Royal United Services Institute*, October 15, 2021. <https://rusi.org/explore-our-research/publications/commentary/aq-khan-dead-long-live-proliferation-network> (accessed June 20, 2022).

④ IAEA, "CPPNM – Reservations."

⑤ Noor, "Nuclear Security Regime."

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