

# Convention on the Physical Protection of Nuclear Material and the 2005 Amendment: Past, present, and future

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## I. INTRODUCTION

The risk of a terrorist attack involving nuclear material is as important now as it ever has been. As early as the 1970's, states recognized the threat of misuse of nuclear material by non-state actors, and have been actively working to prevent that threat from being realized. The Convention on the Physical Protection of Nuclear Material (CPPNM) and its 2005 Amendment (A/CPPNM) is an important component of these efforts. It is part of the international legal framework for nuclear security, and provides an international legal basis for protection of nuclear material in domestic use, storage and transport, as well as nuclear facilities.

The purpose of this paper is to provide an historical overview of the CPPNM and its Amendment to raise awareness of this legal instrument amongst young professionals and encourage their engagement on the implementation of this important convention. This will be done by examining the history and global context of the development and implementation of the CPPNM and its Amendment in order to better understand the current state of affairs and look forward to future challenges and opportunities. The first part of the paper will be an historical review of events leading up to the adoption of the CPPNM and then the A/CPPNM. The second part of the paper will survey the current state of affairs and identify possible challenges and opportunities for the future, looking forward to a conference of States Parties to be held in 2021.

## II. CPPNM: SECURING NUCLEAR MATERIAL IN INTERNATIONAL TRANSPORT

### A. *Development of the CPPNM*

During the 1970's, the international community recognized the need for guidance on physical protection. Following a number of airline hijackings and other terrorist attacks, members of the nuclear community became concerned about the potential theft and use of nuclear material by terrorist organizations. [1] At the same time, physical protection as a field was growing, and good practices were being developed in many states. In 1972 a booklet was circulated by the International Atomic Energy Agency (IAEA) entitled "Recommendations for the Physical Protection of Nuclear Material." In 1975, the recommendations were reviewed, updated, and published as INFCIRC/225: The Physical Protection of Nuclear Material. [2] INFCIRC/225 provides recommendations on the physical protection of nuclear material in use, transit, and storage, however it is not legally binding.

Following the publication of INFCIRC/225, Member States of the IAEA recognized the need for a legally binding regime to protect nuclear material in international transport. [3] This led to the negotiation and adoption of the Convention on the Physical Protection of Nuclear Material in 1979. It entered into force in 1987, providing an international legal basis for the physical protection of nuclear material used for peaceful purposes while in international transport.

### B. *1992 Review Conference*

Five years after the entry into force of the CPPNM, a review conference was held in accordance with Article 16 of the Convention in 1992. At the review conference, States Parties expressed their satisfaction with the Convention as it was written. [4] Only a few years later, however, efforts began to amend the Convention. What led to this shift in position regarding the CPPNM? It was likely influenced by a number of different events happening both in nuclear security and nuclear policy more broadly. There was interest and appetite to update INFCIRC/225, which has been updated 5 times since 1975. The effort to update INFCIRC/225 may have reduced any political momentum to change the CPPNM. Furthermore, during the early 1990's there was more concern about the acquisition of nuclear weapons by states than about the acquisition of nuclear material by terrorists. [5] This was reflected in the launch in 1993 of the Program 93+2, an IAEA initiative to strengthen safeguards implementation, which took place the year after the CPPNM Review Conference. Although the 1992 Review Conference concluded that the CPPNM was adequate, before the end of the decade a movement started to make the CPPNM more comprehensive and cover domestic nuclear material and facilities.

## III. A/CPPNM: SECURING DOMESTIC NUCLEAR MATERIAL AND FACILITIES

### A. *Development of the A/CPPNM*

By the mid- 1990's physical protection was once again the subject of attention and interest following several well publicized illicit trafficking incidents. [6] After the fall of the Soviet Union, securing nuclear material in successor states became an issue of concern for many Member States, and drew renewed attention to physical protection more broadly. In September 1997, the IAEA Board of Governors discussed the possibility of an amendment conference for the CPPNM. Following that discussion, the IAEA noted that as the depository it would convene an amendment conference if requested by the majority of CPPNM States Parties. [7] The Director General then convened a group of legal and technical

experts to discuss revising the CPPNM. The Final Report of the Informal Open-Ended Expert Meeting to Discuss Whether there is a Need to Revise the Convention on the Physical Protection of Nuclear Material concluded that there was “a clear need to strengthen the international physical protection regime.” [8] An opened ended expert group met from 2001 to 2003 to prepare recommendations for an amendment, and adopted a final report with a draft amendment in 2003. In 2004, Austria approached the IAEA to request a diplomatic conference to consider the proposed amendments. [9] The diplomatic conference was held in 2005, and the Amendment to the CPPNM was adopted at the conclusion of the conference. The Amendment expanded the scope of the CPPNM to include the physical protection of nuclear material in domestic use, storage and transport, as well as nuclear facilities. It additionally introduces new information sharing measures as well as the criminalization of certain acts, such as sabotage or illicit trafficking.

#### B. Entry into Force

The 2005 Amendment required the ratification of two thirds of the States Parties to the CPPNM before entry into force. States started depositing ratifications with the IAEA in the same year as the Amendment was adopted, however the pace of ratification proved to be much slower than was originally anticipated. In 2010, IAEA held a topical meeting on Facilitating Adherence to the 2005 Amendment to the CPPNM. At the time, only 42 States Parties had ratified the Amendment, and the IAEA Director General noted that it would take 5 years for the entry into force of the Amendment at that pace. [10] Following 2010, the IAEA hosted a number of promotional events to facilitate the entry into force of the CPPNM Amendment. The Nuclear Security Summits from 2010 to 2016 also drew attention to the A/CPPNM at a high level, issuing calls to universalize the CPPNM as amended in in each of the Communiqués issued by the participating heads of state and government. In the lead up to the 2016 Nuclear Security Summit, there was a significant momentum from the international community to achieve entry into force. By April 8, 2016, the IAEA received the requisite number of ratifications, and the CPPNM Amendment entered into force in May 2016.

#### IV. LOOKING TO THE FUTURE

The entry into force of the Amendment brings both challenges and opportunities for States Parties and the depository. One challenge will be universalization of the Amendment. At time of writing, only 115 of the 155 Parties to the CPPNM have ratified the Amendment. As the entry into force process demonstrated, ratification can be a lengthy process. Changing national law and regulations to meet the obligations of the A/CPPNM requires buy-in from multiple stakeholders in the government, coordination throughout the drafting and finalization process, and support from national legislative bodies to amend or pass implementing legislation. Patience, persistence, and continued encouragement from the international community are needed to bring about full ratification of the Amendment by States Parties. Beyond that, the intent of the A/CPPNM is to ensure no safe haven for terrorists or other actors trying to use nuclear material for

malicious purposes. For that to be true, however, it needs to be adopted by all states, and 38 States have yet to join the CPPNM and the Amendment. Universalization of the Amendment with both CPPNM States Parties and non-parties will be important to strengthen the global nuclear security framework, and could be the next goal for the A/CPPNM community.

Full implementation of obligations should also be a goal for States Parties. Leading up to the entry into force in 2016, there was a strong focus on promoting ratification, acceptance or approval of the Amendment. Now, Parties should be encouraged to strengthening their national legal framework to be fully in line with the obligations in the A/CPPNM in all Parties to the A/CPPNM. Implementation will also be important going forward. For states with nuclear material, the A/CPPNM provides an international legal basis for their physical protection activities, and sets out obligations for security of nuclear material in transport, sharing of information and criminalization of certain acts. For states without nuclear material, implementation would entail enacting the relevant provisions into law and establishing information sharing mechanisms internally and with other countries. This will be particularly important for states embarking on nuclear power programs, as it provides an opportunity for them to lay a strong foundation for nuclear security from the start. For all States Parties, the IAEA stands ready to provide assistance on these issues upon request.

One important opportunity for reflecting on these goals will be the conference of States Parties to review the implementation of the Amendment to be held in 2021. What that conference will entail is a question that States Parties will need to answer. States Parties will need to consider what issues should be discussed, how to conduct the review, and what preparatory steps will need to be made. The international security environment has changed since the Amendment was developed, and new technologies are posing new challenges and opportunities for nuclear security. These and many other factors will need to be taken into consideration in preparation for the A/CPPNM Conference of States Parties. As States Parties prepare for the review process, there will likely be opportunities for young professionals to support and contribute to nuclear security efforts, so it will be important to understand the history behind the A/CPPNM to help move nuclear security efforts forward. Nuclear security remains a pressing need, and the A/CPPNM remains an important instrument within the international legal framework for nuclear security.

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#### REFERENCES

- [1] H. Kurihara, “Strengthening Physical Protection of Nuclear Material: National systems versus multinational systems,” *Proceedings of the 1997 International Conference on Physical Protection*, IAEA-CN-68/43 (1997).
- [2] IAEA, “The Physical Protection of Nuclear Material,” *INFCIRC/225* (1975).
- [3] M. El Baradei, “Physical Protection of Nuclear Material,” *IAEA Bulletin*, 39/4 (1997).

- [4] Ibid.
- [5] G. Bunn, "Strengthening International Norms For Physical Protection of Nuclear Material," *Proceedings of the 1997 International Conference on Physical Protection*, IAEA-CN-68/70 (1997).
- [6] M. El Baradei, "Physical Protection of Nuclear Material," *IAEA Bulletin*, 39/4 (1997).
- [7] B. Jenkins, "Establishing International Standards for Physical Protection of Nuclear Material," *The Nonproliferation Review*, Spring-Summer (1998).
- [8] IAEA, "Nuclear Verification and Security of Material Physical Protection Objectives and Fundamental Principles," GOV/2001/4 (2001).
- [9] D. Flory, "Towards A Strengthened Convention on the Physical Protection Of Nuclear Material: The Path to New Responsibilities," *Proceeding of the International Conference on Nuclear Security: Global Directions for the Future* (2005).
- [10] Y. Amano, Opening remarks to Facilitating Adherence to the 2005 Amendment to the CPPNM, 18 November 2010, Vienna, Austria. Retrieved from <https://www-ns.iaea.org/conventions/presentations-cppnm-topical-meeting-2010.asp?s=6&l=42>.