

**DISCUSSION PAPER: BUILDING AN EFFECTIVE NUCLEAR SECURITY REGIME THROUGH
THE AMENDED CPPNM**

I. INTRODUCTION

In 2016, the Amendment to the Convention on the Physical Protection of Nuclear Material (CPPNM/A) entered into force.¹ This was an important milestone for nuclear security. The Amendment significantly strengthens the international legal framework for nuclear security by expanding the scope of its physical protection requirements to all nuclear materials in transport—both domestic and international—and to nuclear facilities. Additionally, its entry into force triggered Article 16, which requires the International Atomic Energy Agency (IAEA), as depositary, to convene a review conference five years after the Amendment’s entry into force. As a result, the review conference will be held in 2021. In the time remaining before the 2021 CPPNM review conference, States Parties have the opportunity to plan a review conference that is not only robust and substantive, but also establishes the CPPNM and its review process as a much-needed vehicle for continued nuclear security dialogue and impetus for progress. This paper offers ideas for possible outcomes for the 2021 review conference that can build a strong, effective, and sustainable CPPNM regime.

II. WHY THE REVIEW CONFERENCE MATTERS

Without a robust, substantive review conference process, the CPPNM risks becoming a passive treaty, the actual implementation of which is secondary to its signing. Many states, including the United States and Russia, worked hard to garner enough ratifications of the CPPNM Amendment for it to enter into force. Now that the Amendment is in force, universalization will continue to be an important goal. However, universalization of the Amendment will not be sufficient to build the CPPNM into a strong, effective, and sustainable nuclear security regime.

Protecting nuclear materials and nuclear facilities from the threats posed by terrorists or other non-state actors is too important a mission to let slide into complacency and neglect. The threat of nuclear terrorism is not yesterday’s problem. A quick scan of the news reveals continued incidents of illicit trafficking or loss of radioactive materials. The James Martin Center

¹ The official title of the treaty, as amended, is the Convention on the Physical Protection of Nuclear Materials and Nuclear Facilities. Although various acronyms have been used (CPPNM, CPPNM/A, or CPP), for clarity, this paper will use “CPPNM,” “Amended CPPNM,” or “the Amendment” interchangeably to refer to the amended treaty. The unamended version will be referred to as “the original CPPNM” or “the unamended CPPNM.”

for Nonproliferation Studies (CNS) Global Incidents and Trafficking Database, a tool released in June 2018 to track incidents of theft or loss of nuclear and other radioactive materials, contains dozens of incidents between January and June of last year alone. Terrorist attacks still occur regularly across the globe, including by ISIL and other terrorist groups. The CPPNM and its review conference can help prevent complacency by becoming a forum for sustained dialogue and progress, but only if the review conference and accompanying preparatory process have robust, substantive agendas.

Presented with a blank slate upon which to build a CPPNM review conference process, the international nuclear security community should strive for ambition. The CPPNM regime should provide an opportunity for states to engage in regular dialogue on how the treaty is being translated into on-the-ground nuclear security progress and why a strong nuclear security regime contributes to the spread of peaceful nuclear technology. The CPPNM should provide a forum that enables States Party to monitor and identify gaps in implementation, review progress, promote continuous improvement, and discuss emerging nuclear security threats. The CPPNM should be a treaty regime that lives and breathes, is dynamic, and evolves as the security context evolves.

A CPPNM review conference with these characteristics is not a foregone conclusion. It will take vision, ambition, and leadership. Given the limited time between now and 2021, it is imperative that the international nuclear security community start articulating and promoting what an ambitious and effective CPPNM review conference would entail, and start socializing that with all States Parties.

III. REVIEW CONFERENCE OUTCOMES

Unlike other treaties, the CPPNM text (both original and amended) provides almost no guidance for the review or preparatory process. Article 16 merely states that the review conference will “review the implementation of this Convention and its adequacy as concerns the preamble, the whole of the operative part and the annexes in light of the then prevailing situation.” There is no mention at all of any preparatory process. Article 16’s minimal guidance means that States Parties have the unique opportunity to design a review conference and preparatory process with outcomes that are most likely to achieve the objective of a strong, effective, and sustainable treaty regime. States should be ambitious and take advantage of this singular opportunity.

Article 16’s reference to the preamble clearly envisions a broad, substantive discussion that captures not only a review of the legal obligations contained in the treaty, but many of the topics that are referenced in the preamble. Given the flexibility inherent in the text, this paper

offers five potential review conference outcomes for States Parties to consider as they begin planning the review conference agenda:

1. Continuity and Universality

First, continuity of the review process and universality of the treaty will be vital to building a strong, effective, and sustainable treaty regime. Therefore, the most important outcome of the 2021 review conference should be a decision by States Parties to hold review conferences every five years as a standing arrangement, instead of waiting for a request of a majority of States Parties to do so on an ad hoc basis. If this outcome is not achieved, there is a risk that the 2021 review conference will be the last, as was the case with the 1992 review conference held after entry into force of the original CPPNM. Continuity of the review process—and opportunities for regular dialogue on nuclear security—will enable the treaty to maintain its relevance as threats evolve over time. It will also be vital to keeping nuclear security high on international and national agendas. Note that the IAEA Action Plan from the 2016 Summit endorsed the approach of review conferences every five years.

In addition to continuity of the review process, continued efforts to universalize the Amendment are also important. The review conference could incorporate a focused session to promote ratification of the Amendment that is designed for states not party to the Amendment. In order to accomplish this, states not party to the Amendment would need to be allowed to participate in the review conference as observers, with the only restriction that they cannot participate in decisions that require a vote of States Parties.

2. Substantive Agenda

A second important outcome should be to have a robust, substantive review conference agenda. The agenda should be designed to allow for an in-depth dialogue on a variety of issues related to implementation of the treaty, rather than taking a more narrow provision-by-provision approach. There is precedent in other review conferences for both approaches, but a provision-by-provision review is unlikely to result in a robust dialogue. Instead, the more effective approach should be to organize the agenda by themes or topics derived from the treaty's operative text and preamble. In addition to discussing measures to implement specific provisions on physical protection or on criminalizing and punishing nuclear offenses, States Parties could consider other themes:

- Role of the IAEA: The role of the IAEA in nuclear security could be a productive theme and also appropriate given the IAEA's role as the treaty depositary and convener of the review conference. A session on the IAEA's role would be an opportunity to build awareness of the IAEA's resources, including the Nuclear Security Series and its review

services, such as IPPAS and INSServ missions. Promoting implementation of IAEA guidance (which would be consistent with the reference to “internationally formulated recommendations” in the preamble) and the Fundamental Principles (referenced in the operative text) would be a positive step toward a regime in which states follow common, international nuclear security standards. Promoting INFCIRC/869 and encouraging states to sign on could also be a component of this session. Finally, this session could encourage additional financial and political support for the IAEA’s nuclear security mission.

- Emerging Technology and Cyber: Emerging technology is another theme that warrants significant attention in the context of both offensive use of technology that could lead to theft or sabotage and defensive use of new technology to protect materials and facilities. As technology evolves, so must our assessment of those technologies as both enablers of security and threats to security. Two major examples come to mind. First, drones have enormous potential to enhance security by providing additional eyes and ears to supplement guard force capabilities at facilities and in transport convoys. Yet, drones can also be used by bad actors to carry out surveillance or attacks. A second example is cyber. Cyber tools can be used to enhance security as technology improves and becomes more sophisticated and reliable. But cyber tools can also be used to defeat digital security systems designed to protect nuclear materials and facilities. A discussion to build awareness of the cyber threat and the need to develop measures to prevent or mitigate cyber-mediated theft and sabotage would be a significant contribution to nuclear security. A discussion on cyber could also consider whether the CPPNM’s reference to “physical protection” should be interpreted to include cyberattacks. Cyber is just one of many types of weapon or tool that can be deployed to defeat physical security measures (just like guns, bombs, or other weapons), and therefore cybersecurity should be considered an element of physical protection. Using a flexible definition of “physical protection” also means that the CPPNM can remain relevant as the threat continues to evolve and adversaries adapt their tools to defeat security.
- Understanding the Evolving Risk Environment: The review conference should not occur in a vacuum. Consistent with Article 16’s reference to reviewing implementation “in light of the then prevailing situation,” a session that provides a forum for discussion on the current risk environment and contemporary and emerging threats would provide an opportunity to discuss how implementation and interpretation of the CPPNM need to adapt to an evolving security context. This discussion would be important to maintain the CPPNM’s relevance as a long-term tool for nuclear security.

In addition to the three themes proposed above, the substantive agenda could be enhanced by smaller thematic or regional breakout sessions. This would allow for in-depth discussion of topics that are more relevant to some states than others and based on states' national or regional contexts. Topics that are important, but that may have varied interest, include: nuclear transport, protecting nuclear materials from theft, protecting nuclear facilities such as power plants from sabotage, materials minimization, and topics relevant for nuclear energy newcomers.

3. Confidence-Building through Information Sharing

A third outcome of the review conference should be strengthened information sharing and reporting under the Amendment. Information sharing on nuclear security practices provides valuable opportunities for states to learn from one another and build confidence in the security of their nuclear materials. The required submission of information under Article 14 by all States Parties prior to the review conference should be a goal. There could also be a dedicated session on Article 14 reporting to discuss the usefulness of a template and best practices in reporting, and to encourage states to make their Article 14 submissions public, as some countries have already done. For states that already feel a heavy reporting burden, the Consolidated National Nuclear Security Report offered as a reporting template by the Dutch government at the 2016 Nuclear Security Summit can be a useful tool and highlighted in discussions.

States have an opportunity to go beyond reporting on “the laws and regulations which give effect to” the CPPNM and instead voluntarily provide broader information on their nuclear security programs and the steps they are taking to continuously improve security. Additional reporting not only builds confidence of others, but offers a chance to share best practices or identify areas where assistance from the IAEA or other nations might be useful. States can learn from one another and provide value by sharing their practices, while protecting sensitive information. In fact, Article 5 of the CPPNM encourages information sharing among States Parties for the purpose of “obtaining guidance on the design, maintenance, and improvement of its national system of physical protection of nuclear material.”

A practice that states might consider adopting at the CPPNM review conference is one used within the review process of the Convention on Nuclear Safety and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. Under both conventions, states submit national implementation reports which are then reviewed in country groups at the review conference. Although the CPPNM text does not mandate a similar approach, states could consider this report review process as an appropriate option for implementing Article 5.

4. Culture of Deliverables

The fourth important outcome should be to promote a culture of deliverables at the review conference. The culture of deliverables at the Nuclear Security Summits was one of the driving factors for the significant progress that was made during those years, including the entry into force of the Amendment itself. Maintaining this culture is important for continuing nuclear security ambition across the globe, sustaining momentum, and building upon the progress that has already been made. The review conference should be a place for states to demonstrate their commitment to nuclear security by identifying areas where they have made progress and committing to additional measures to improve security. This could include committing to:

- Implement IAEA nuclear security guidance, including signing on to INFCIRC/869.
- Host regular IAEA IPPAS and INSServ missions, including follow-up missions.
- Engage in workshops on nuclear security best practices or in training offered by the IAEA, WINS, and other organizations or states.
- Participate in regional or national Centers of Excellence or Nuclear Security Support Centers.
- Provide extra-budgetary funding to the IAEA Nuclear Security Fund and/or providing in-kind support to the IAEA Division of Nuclear Security.
- Further HEU/plutonium reductions and reactor conversions.

5. Interactive Sessions

A final proposed outcome is the use of interactive sessions. Getting away from the approach at other review conferences of simply reading prepared remarks will make the CPPNM review conference much more valuable, informative, and interesting for participants, particularly if there is a ministerial component. One way to generate interesting dialogue is through a scenario-based policy discussion. This type of tool could be useful to aid a discussion of new and emerging topics, such as the impact—both positive and negative—of technology on nuclear security.

IV. CONCLUSION

Article 16 invites states to be ambitious by providing a broad, flexible basis upon which to design a robust agenda for nuclear security dialogue. Such a dialogue is vital to sustain momentum and build upon nuclear security progress that has already been made, and not let

efforts to prevent nuclear terrorism slide into complacency. This can be achieved with a robust preparation process and a meaningful, outcome-oriented review conference in 2021. The 2021 review conference is a unique—and perhaps will be the only—opportunity to put in place what is needed to build a strong, effective, and sustainable CPPNM regime for combatting nuclear threats, now and in the future. To seize this opportunity requires vision, ambition, and strong leadership. This is too great a chance to squander when our collective mission of preventing nuclear terrorism is so consequential.