2009-01-01

Legal Instruments to Prevent Nuclear WMD Use by Non-State Actors; Strategic Insights, v. 8, issue 1(January 2009)

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Strategic Insights, v.8, issue 1 (January 2009)
https://hdl.handle.net/10945/11427

Legal Instruments to Prevent Nuclear WMD Use by Non-State Actors

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Strategic Insights is a quarterly electronic journal produced by the Center for Contemporary Conflict at the Naval Postgraduate School in Monterey, California. The views expressed here are those of the author(s) and do not necessarily represent the views of NPS, the Department of Defense, or the U.S. Government.

Introduction

Data collected since 1991 indicate that some groups involved in terrorist activities have been interested in acquiring fissile material to terrorize society with nuclear weapons of mass destruction (WMD).[1] Non-state actors have three possibilities to actually carry out such a threat: (a) theft or purchase of a functioning nuclear device (e.g., from a military source); (b) provision of a nuclear device from a rogue state in possession of nuclear weapons technology; or (c) access to an adequate amount of weapons-grade HEU in order to build a crude nuclear device.[2]

The world community faces the challenge whether the legal instruments are adequate to prevent proliferation of nuclear materials and technologies leading ultimately to the deployment of nuclear weapons and WMD use by non-state actors. International law and decision-making mechanisms are—besides covert intelligence or military operations—one of the possibilities to address this global challenge.

The current international nuclear WMD non-proliferation regime originated about forty years ago. Over the past four decades it encompassed a multitude of treaties, conventions and recommendations. These rules cover a wide range, such as the Treaty on the Non-Proliferation of Nuclear Weapons, the Missile Technology Control Regime, and UN-induced initiatives, such as declarations of nuclear-free zones in different regions. The major components of these international legal efforts will be discussed below with regard to their ability to prevent nuclear WMD use by non-state actors.

United Nations Security Council Resolution 1540 (UN 1540)

The United Nations (UN) Security Council Resolution 1540 aims at the protection of nuclear material located in UN member states in order to prevent *inter alia* the proliferation of nuclear weapons.[3] The UN 1540 requests its member states to *"…develop and maintain appropriate effective physical protection measures"* in order to ensure physical protection of their locations housing nuclear material and of their nuclear facilities.

UN 1540 has a significant deficiency which can have major implications with regard to preventing non-state actors from gaining access to nuclear material: since *appropriate effective physical protection measures* are not specifically defined, this leaves it up to member states to decide on the actual level of physical protection. An international analysis indicates a wide range of

interpretations of the adequacy of physical protection in different member states, respectively of means available to do so.[4, 5]

Although the UN appointed a committee for the interpretation of UN 1540, the role of this group is rather limited, e.g., requesting reports from member states on national actions taken. The only preventive actions of the committee consist in three tasks:

- Review of national reports received from member states
- Providing a public record of national efforts to implement UN 1540
- Assistance (upon request only) for member states in preparing the reports, basically through services offered by the International Atomic Energy Agency (IAEA).

Although UN 1540 foresees physical protection as a major security issue, the logical actor for implementation, i.e. the IAEA, has not been appointed but rather the Security Council with neither technical nor logistical infrastructure. The issue of possible legal consequences for unsatisfactory reports provided by member states or not delivering any report at all remains unresolved.

IAEA Convention on the Physical Protection of Nuclear Material (CPPNM)

The CPPNM entered into force in 1987, ratified by 112 member states. It recognizes that physical protection is the responsibility of sovereign states, i.e. the IAEA member states are required only to implement measures deemed necessary in accordance to national security requirements.[6] Furthermore, the CPPNM requests from member states to criminalize certain acts (e.g., unlawful receipt, use, transfer, alteration, disposal or dispersal of nuclear material; threat to use nuclear material to cause death or serious injury).

In 2005 state parties adopted a legally binding amendment to the treaty, requiring them to protect nuclear facilities and nuclear material in peaceful domestic use, storage and during transport. Furthermore, the amended treaty foresees cooperation locating and recovering diverted nuclear material, mitigating radiological consequences of sabotage, and preventing/combating related offences.

Concerning the issue of controlling non-state actors from gaining access to nuclear material the CPPNM and its amendment have a major deficiency: the level of physical protection necessary to prevent such access is decided by the national authority and its assessment of the threat level. There is no realistic possibility for other member states, disagreeing with this assessment, to demand strengthening of the physical security. The CPPNM and its amendment have the following inherent security deficiencies:

- The views on security threats due to non-state actors differ widely among member states, therefore the actions taken to counter the security risks reflect these divergent threat assessments
- Measures taken to strengthen physical security are considered confidential and therefore are not subject to an objective external assessment
- There is no internationally legally binding minimum standard for physical security
- The financial means available for physical security of nuclear material and facilities are inadequate in a number of member states (e.g., developing countries housing research reactors fuelled with HEU; some CIS-countries with extensive nuclear infrastructure inherited from the former USSR).

This leads to potentially elevated security risks from non-state actors obtaining nuclear material or carrying out a successful attack on a nuclear installation. This dissatisfactory situation is not going to be improved soon, since only a small number of member states have ratified the CPPNM

amendment and it will only come into effect once it has been ratified by two-thirds of the 112 States Parties of the CPPNM.

IAEA Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities (INFCIRC 225)

The effectiveness of physical protection in one State is not a matter of indifference to other States. Although the responsibility for physical protection rests with the Government of that State, the IAEA has provided guidance on adequate measures to deter or defeat hostile actions against nuclear facilities and prevent the divergence of nuclear material already in recommendations released in 1972. These recommendations later became the INFCIRC series, with INFCIRC/225 becoming the most prominent such document. Currently the version INFCIRC/225/rev 4 (Corrected) reflects state-of-the-art in terms of practices and provides specific recommendations related to sabotage. The document describes both administrative and technical measures. The major weakness of this document is its character as *recommendations* only and not a legally binding treaty like the CPPNM, i.e. the IAEA has no mechanism to enforce their actual implementation at the national level. The IAEA can only offer technical assistance through dedicated programmes (e.g., IPPAS missions), provided the member state requests such service. In practice member states can require recipients of nuclear material to adhere to INFCIRC 225 physical protection security specifics. Thereby the INFCIRC 225 provides only a limited level of security against WMD use by non-state actors.

Global Initiative to Combat Nuclear Terrorism

The *Global Initiative to Combat Nuclear Terrorism* was launched in St. Petersburg, Russia in 2006.[7] The legal basis for the work of the Initiative are the *International Convention on the Suppression of Acts of Nuclear Terrorism*,[8] the CPPNM, UN Security Council Resolutions 1373 and 1540, and national legal authorities.

The purpose of this initiative is: (a) Expansion of the partnership to combat the threat of nuclear terrorism; (b) Acceleration to develop the capacity of the partnership to achieve this goal on a determined and systematic basis. The Initiative aims for agreed principles, including the improvement of domestic measures to account for and secure nuclear materials and to enhance physical security at civilian nuclear facilities.

As of May 16, 2008, 71 nations have become partners in this initiative. However impressive this number may seem at first glance, it is noticeable that two countries already possessing nuclear weapons, i.e. India and North Korea, are absent. Also, several countries with a certain level of nuclear infrastructure, are not participating so far, e.g., Egypt, South Africa, and Syria. IAEA and EU have taken observer status. Furthermore, this Initiative will have to overcome the following inherent problems:

- All the activities at the national level among the participating countries will be conducted subject to available resources, i.e. participating countries with financial problems possessing nuclear materials should seek to ensure adequate provision of resources within their means—all too often considered inadequate by themselves[9]
- The advisory body of partner nations (IAG), coordinating and organizing activities necessary for implementation of the Initiative, is informal only and has no legal authority, i.e. participants are *expected* to take proactive steps to combat the threat of nuclear terrorism but there is no IAG capability foreseen to enforce any such action—all actions by partner nations are v oluntary only
- The membership of nations participating reflect *most* of the world's nuclear materials and facilities, but some essential countries are missing so far

- There is no mechanism foreseen which would enable an objective assessment of the actual improvement achieved by the Initiative, provided participating nations can reach a consensus on minimum standards on physical protection standards for nuclear material and facilities.

All of the above issues need to be resolved in order for the Initiative to ensure that the use of nuclear WMD by non-state actors can be prevented in the future.

Nuclear Non-proliferation Treaty (NPT) and the Zangger Committee

The 1968 Nuclear Non-proliferation Treaty (NPT) entered into force in 1970, with 188 States as parties. This treaty is without a dedicated secretariat but tasks the IAEA with verifying compliance with the Treaty. Parties are required to accept nuclear safeguards and enact export controls;[10] however, physical protection is not a requirement of the NPT.

The Zangger Committee[11] ("NPT Exporters Committee") serves as interpreter of NPT Article III, paragraph 2, to harmonize nuclear export control policies for NPT Parties.[12] As of Feb 2008, only 36 countries are Member States, including all of the declared nuclear weapon states. Important potential nuclear suppliers, such as India, Israel, North Korea, and Pakistan, are not participating.

For this purpose the Committee maintains a *Trigger List*[13] of nuclear-related strategic goods, preventing the diversion of exported nuclear items from peaceful purposes to nuclear weapons or other nuclear explosive devices. The Trigger List and the Zangger Committee's interpretation are published by the IAEA in the INFCIRC/209 series. The Committee faces several challenges, potentially impeding its capability to contribute effectively in the prevention of non-state actors obtaining access to nuclear WMD through countries with adequate technology:

- It represents only an informal group of nuclear supplier countries that are party to the NPT without any legal authority
- Advances in technology necessitate a continuous and timely improvement of the Zangger-Trigger List and its interpretations
- It can only invite States to consider applying its understandings.

Conclusion

Over the past forty years the global community has created a multiplicity of legal tools aimed at preventing nuclear WMD use by non-state actors. These range from legally binding treaties to recommendations and voluntary agreements. Since 1991 non-state actors have been threatened the use of nuclear WMD but have not been able to demonstrate their actual capability to deploy such a weapon. This can be interpreted as adequacy of the current system of legal tools, designed to provide adequate physical protection of nuclear material and nuclear installations. However, this should not lead to complacency, since none of the tools is flawless, i.e. each has inherent security weaknesses which can be misused by non-state actors to undermine the present level of nuclear security.

Therefore major internationally accelerated efforts should be undertaken to eliminate these security deficits in a coordinated manner. There is no lack of individual "security initiatives" and dedicated groups aiming directly or indirectly to the prevention of nuclear threats by non-state actors, such as US-Nuclear Threat Initiative, U.S. National Strategy to Combat WMD, G-8 Initiative, Container Security Initiative, and Missile Technology Control Regime. Regrettably there is a pronounced lack of international coordination of related activities, generally inadequate means for strengthening physical security in financially disadvantaged countries, widespread

unwillingness to adhere to an internationally accepted minimum level of physical protection, coupled with a frequent deficit of legal means to enforce compliance with security-related technical and operational requirements. If the global community is serious about the nuclear WMD threats posed by non-state actors, these vulnerabilities need to be addressed sooner rather than later. The level of threat posed by the use by terrorists of WMD requires that no easy solutions, reflecting the smallest common denominator, are taken. A WMD attack by non-state actors is possible, either sooner or later. The ability of targeted countries to survive such an attack will be determined by the steps that are taken collectively now.

References

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3. It also covers biological, and chemical weapons.

4. Bunn, G., Rinne, R., and F. Steinhausler, *Strengthening Global Physical Protection Practices: Gaining Better Information on National Practices For Protection of Nuclear Material*, Proc. IAEA Int. Conf. on Security of Material: Measures to Prevent, Intercept and Respond to Illicit Uses of Nuclear Material and Radioactive Sources, Stockholm, 7-11 May 2001, International Atomic Energy Agency, Proceedings, C&P Papers Series 12/P, Vienna, August 2002.

5. Kondratov, S. and F. Steinhäusler, "Why there is a need to revise the Design Basis Threat concept," *International Journal of Nuclear Law* I, no. 2 (2006): 182-188.

6. IAEA INFCIRC/274.

7. By President Bush (USA) and President Putin (Russian Federation).

8. Aiming for international cooperation in investigating, prosecuting, and extraditing terrorists deploying or threatening to use nuclear weapons or material.

9. Kondratov, S. and F. Steinhäusler, "Why there is a need to revise the Design Basis Threat concept," *International Journal of Nuclear Law* I, no. 2 (2006): 182-188.

10. To ensure that exported materials are safeguarded in the recipient state.

11. It was formed following the coming into force of the NPT and named after its first Chairman, Prof. Claude Zangger.

12. Article III, paragraph 2 states: "Each State Party to the Treaty undertakes not to provide: (a) source or special fissionable material, or (b) equipment or material especially designed or prepared for the processing, use, or production of special fissionable material, to any non-nuclear-weapon State for peaceful purposes, unless the source or special fissionable material shall be subject to the safeguards required by this article."

13. Triggering safeguards as a condition of supply.