
POLICY ESSAY

Julia C. Morse

FULFILLING THE PRAGUE PROMISE: A FRAMEWORK FOR NUCLEAR SECURITY

The lack of an international framework that stipulates specific nuclear security standards poses a significant threat to international security. Terrorist organizations like Al Qaeda have expressed their desire to acquire and use nuclear weapons. Such actors could gain access to the necessary fissile material to produce a bomb at military or civilian nuclear sites throughout the world.¹ Significant quantities of nuclear material are stored and processed under varying degrees of security, making them vulnerable to theft. When states choose to implement weak nuclear security standards, whether because of a low threat appraisal or a lack of capacity, this vulnerable nuclear material poses a global threat.

Governments around the world are aware of this problem. United Nations Security Council Resolution (UNSCR) 1540—which imposes binding but vague requirements on states to establish domestic controls to prevent the proliferation of nuclear material to non-state actors—was widely supported by United Nations (UN) member states. Countries that spoke in favor of the resolution cited the absence of existing international regulations on nuclear security and the urgent need for coordinated action.² However, despite widespread international support, UNSCR 1540 lacks the specific provisions necessary to reassure concerned states that all vulnerable nuclear material is now secure.

With this continued vulnerability in mind, President Barack Obama announced during an April 2009 speech in Prague that the United States would lead an international effort to secure all nuclear material around the world within four years. As the country with the largest nuclear stockpile

Julia C. Morse is a 2010 graduate of the Master in Public Affairs program at Princeton University's Woodrow Wilson School of Public and International Affairs, where she focused on International Relations. She can be contacted at julia.morse@gmail.com.

and the most advanced nuclear security technology, the United States has the resources and expertise to lead this effort. However, fulfilling the Prague promise will require the development of binding international standards on nuclear security, with a core emphasis on adequate physical protection standards for nuclear material.

I. CONTEXT AND OVERVIEW

Physical protection of nuclear material is a core component of nuclear security.³ According to the International Atomic Energy Agency (IAEA), a state's physical protection system should "establish conditions which would minimize the possibilities for unauthorized removal of nuclear material and/or sabotage" and "provide information and technical assistance in support of rapid and comprehensive measures...to locate and recover missing nuclear material and to cooperate with safety authorities in minimizing the radiological consequences of sabotage."⁴ Existing international guidelines on physical protection stipulate different levels of requisite physical protection for three categories of nuclear material; these distinctions are based on the relative difficulty of the processing and handling required to convert such material into a nuclear weapon. Category 1 material requires the highest level of physical protection because it is comparatively the easiest to turn into a nuclear weapon.⁵

Currently, there are three international frameworks that may affect a country's physical protection of nuclear material: the IAEA's guidelines on physical protection, the Convention on the Physical Protection of Nuclear Material (CPPNM), and UNSCR 1540. The IAEA's guidelines, titled "Recommendations for the Physical Protection of Nuclear Material" (INFCIRC/225), were issued in 1975 and have since been revised four times. INFCIRC/225/Rev.4, the most recent version of the guidelines, represents the most detailed set of multilateral physical protection standards for nuclear material, laying out specific recommendations for physical protection against the sabotage of nuclear facilities and nuclear material during use and storage, and for physical protection of nuclear material during transport.

Unlike the IAEA's guidelines, the CPPNM, which was negotiated between 1977 and 1979, is legally-binding but outlines relatively vague standards for security. The Convention provides for certain levels of physical protection for "nuclear material used for peaceful purposes while in international nuclear transport," and also deals with the criminalization of certain types of activity and international cooperation on nuclear security. A 2005 amendment to the Convention extends the physical

protection measures of the CPPNM to nuclear facilities and material in peaceful domestic use, storage, and transport. However, this amendment will not be binding until it is ratified by two-thirds of the states party to the convention.⁶

Almost twenty years after the CPPNM went into force, the UN Security Council passed UNSCR 1540, which affects the physical protection measures of all UN member states. The resolution requires all UN member states to implement and enforce measures to prevent the proliferation of weapons of mass destruction and related materials and their means of delivery. To fulfill this requirement, states are required to establish domestic controls along four different pillars of nuclear security, including the development and maintenance of effective physical protection measures.⁷ UNSCR 1540 also mandates that member states submit reports on national efforts to establish nuclear security to the 1540 Committee, which was established by the Security Council to oversee this process. As of July 2008, four years after the resolution was passed, a total of 155 states had submitted at least one report.

II. ANALYSIS

Three different multilateral frameworks exist to regulate the physical protection of nuclear material, but this complex international architecture is insufficient as each agreement is uniquely flawed. Analysis of these agreements illustrates the difficulties that states will continue to encounter in trying to create, implement, and enforce an international agreement on physical protection that adequately reassures states about nuclear security worldwide.

The IAEA relies on national nuclear security experts from countries around the world to formulate its guidelines. Therefore, the current version of the IAEA's guidelines, INFCIRC/225/Rev.4, in many ways represents a minimum shared baseline for physical protection standards. The diversity of state resources and threat assessments makes it difficult for experts to agree upon the specific stipulations of an ideal agreement on physical protection; the IAEA's guidelines are the closest approximation to achieving consensus. Unfortunately, because these standards are formulated by an international organization, rather than a group of governments, they are not legally binding.⁸ Without the force of international law behind them, states are under no obligation to actually institute these minimum recommended levels of physical protection.

The CPPNM is both an improvement on and a step backward from the IAEA's guidelines. Unlike INFCIRC/225, the Convention was negotiated

by states and has therefore been legally binding since it entered into force in 1987. But the CPPNM suffers from problems typical of multilateral treaties on security-related subjects: it is limited in scope, vague in stipulation, and lacks any type of enforcement mechanism. Until the 2005 amendment enters into force, it is only applicable to civilian-use nuclear material while in international transport.⁹ Even within this subset of nuclear material, the CPPNM lacks the specificity of the IAEA guidelines and instead establishes relatively vague physical protection standards that leave undefined many responsibilities of the state. For example, while the CPPNM requires states to restrict access to Category 1 nuclear material, which requires the highest level of physical protection, to “persons whose trustworthiness has been determined,” it includes no further explanation for how to judge “trustworthiness.” Finally, even if the CPPNM and its amendment stipulated specific security standards, the treaty contains no enforcement provisions or reporting requirements to ensure that states are actually implementing measures to improve nuclear security.

The passage of UNSCR 1540 in April 2004 reflected mounting concern among governments about the possibility of nuclear terrorism and the need for monitoring the implementation of nuclear security measures by states. But reports from individual states to the 1540 Committee have only revealed the continued lack of international resolve on nuclear security. Resolution 1540 calls upon states to develop and maintain effective physical protection measures but fails to define this requirement further. The CPPNM should represent a minimum standard for fulfilling this provision, yet of the 138 UN member states that were party to the CPPNM in 2008, only 94 had established a national authority responsible for the implementation of the agreement.¹⁰ Of these 94 states, many have not fulfilled other obligations under the treaty, suggesting that some states are picking and choosing which requirements to implement. For example, despite provisions in both the CPPNM and its 2005 amendment requiring states to implement the treaty through domestic law, only 61 states reported having a national legal framework stipulating regulations for the physical protection of nuclear facilities, materials, and transport. Assuming that all 61 states with legal frameworks are actually parties to the CPPNM, this represents a 44 percent compliance rate. Such low numbers clearly indicate that the UNSCR 1540 framework is not strong enough to ensure state-level physical protection of nuclear material.

III. POLICY RECOMMENDATIONS

If the 47 countries that met in April 2010 at the Nuclear Security Summit are accurate in their assessment that the acquisition of nuclear material by terrorist organizations poses one of the most significant threats to international peace and security, then immediate multilateral action on physical protection standards is necessary to meet this challenge. The analysis of the IAEA guidelines, the CPPNM, and UNSCR 1540 reveals a number of flaws with the current interstate approach to establish binding requirements for the physical protection frameworks. The policy recommendations included below are intended to overcome some of these difficulties.

The Need for UN Security Council Action

The case study of the CPPNM illustrates how multilateral treaties take years to negotiate and even longer to go into force, particularly if there are many states party to the agreement. Furthermore, negotiated standards tend to lack verification or enforcement mechanisms, providing state parties with little incentive to actually comply with the agreement.

The UN Security Council should pass a resolution that requires states to meet certain minimum standards for the physical protection of nuclear material in order to comply with UNSCR 1540. The Security Council, because of its limited membership and expansive mandate, is well-positioned to act on this issue and such action is likely to be viewed as legitimate. Importantly, the Security Council's long-standing institutional framework and bureaucracy should enable it to act more quickly than if similar standards were established under a multilateral treaty. The Security Council is most likely to be successful if the 1540 Committee operates primarily as a technical body to help build domestic capacity—an approach that should help it overcome some of the opposition from states that will resist the establishment of minimum physical protection standards.

The Need for the Articulation of Specific Standards

Technical agreements formed through multilateral channels are sometimes so vague that they allow widely differing interpretations by states, as is the case with the CPPNM and UNSCR 1540. During negotiations, states are required to sacrifice substance in order to reach consensus. Moreover, the final decisions during the negotiating process tend to be made by diplomats rather than technical experts, increasing the possibility that the resulting agreement will lack certain important specifications.

The UN Security Council should adopt the IAEA's "Recommendations

on the Physical Protection of Nuclear Material and Nuclear Facilities” (INFCIRC/225), either in its current form or with the soon-to-be-released revisions to the document. While the guidelines are not perfect, they represent a realistic minimum standard for physical protection that was agreed upon by a combination of experts and state representatives.

The Need for Improved Implementation and Compliance

Under the CPPNM, states are legally bound to fulfill their treaty obligations but no mechanisms exist for ensuring implementation or verifying compliance. As discussed earlier, while 70 percent of state parties have satisfied the CPPNM’s requirement of appointing a national authority responsible for implementing the agreement, less than 50 percent have actually developed the necessary legal framework and enforcement mechanisms.

The 1540 Committee should continue to require states to provide information detailing specific steps that they have taken toward meeting the physical protection standards established by the IAEA. Although it is impossible to ensure compliance without significant punitive measures, forcing states to conduct self-appraisals may generate internal support for improvement and bilateral pressure from other countries that are concerned about nuclear security. The 1540 Committee can also use these reports to provide technical assistance to states, matching up countries with extensive physical protection systems with those that need additional help to fulfill the requirements. Governments will be more likely to submit implementation reports if they know that the Security Council will provide tools to help countries build physical protection infrastructure.

IV. CONCLUSION

In the current environment of weak multilateral agreements on physical protection standards, it will be impossible to achieve President Obama’s four-year goal to secure all nuclear materials. More significantly, nuclear materials will continue to be vulnerable to terrorist acquisition. But the current international system contains the tools to meet this challenge. The UN Security Council must take action by requiring states to employ the IAEA’s guidelines on physical protection. The Security Council’s peace and security mandate enables it to pass resolutions that guide the actions of all UN member states. As a multilateral body established in the wake of the only nuclear attacks to date, the Security Council should lead the fight against nuclear terrorism.

NOTES

- ¹ The 2009 Global Fissile Material Report of the International Panel on Fissile Materials points out that highly-enriched uranium, which can be used to manufacture a Hiroshima-type bomb, is used in more than one hundred civilian reactors worldwide (p.1).
- ² Bianchi, Andrea. 2006. Security Council's Anti-Terror Resolutions and their Implementation by Member States. *Journal of International Criminal Justice* 4.5: 1044-1073.
- ³ The IAEA defines nuclear security as "the prevention and detection of and response to theft, sabotage, unauthorized access, illegal transfer or other malicious acts involving nuclear material, other radioactive substances, or their associated facilities."
- ⁴ IAEA, INFCIRC/225/Rev.4, Section 3.1 (Objectives), available at: http://www.iaea.org/Publications/Documents/Infircs/1999/infirc225r4c/rev4_objective.html.
- ⁵ For more information on what types and quantities of material qualify as Category 1, 2, or 3, see the CPPNM or INFCIRC/225.
- ⁶ According to the IAEA, as of April 2010, only 35 of the 140 states party to the CPPNM had ratified or officially accepted it.
- ⁷ UNSCR 1540 requires states to take four types of measures to prevent the proliferation of WMD and their means of delivery:
 - (1) the development and maintenance of effective measures to account for and secure such items in production, use, storage, or transport;
 - (2) the development and maintenance of effective physical protection measures;
 - (3) the development and maintenance of effective border controls and law enforcement efforts to detect, deter, prevent, and combat illicit trafficking; and
 - (4) the establishment, development, and maintenance of effective national export and trans-shipment controls over such items.
- ⁸ Although countries do not negotiate the guidelines, the IAEA does consult with member states during the formulation and revision of its guidelines.
- ⁹ This means that all military-use fissile material and all civilian-use fissile material that is not in the process of being transported internationally is exempt from the original version of the treaty.
- ¹⁰ Article 2A of the CPPNM Amendment requires that each State Party designate "a competent authority responsible for the implementation of the legislative and regulatory framework."