For a long time, how nuclear facilities were protected from terrorists and thieves has been largely the prerogative of the facilities themselves or individual governments. But the September 11 terrorist attacks and statements by Osama bin Laden have raised new concerns about preventing terrorists from stealing or attacking nuclear material that is often not well protected. As a result, new international standards have been adopted, calling on states to provide stronger protection for nuclear material.

So far, however, these standards are very general and lack effective enforcement. To remedy these shortcomings, the UN Security Council should consider such measures as providing a greater role for the International Atomic Energy Agency (IAEA).

Since 1977, the IAEA through Information Circular 225 has provided recommended standards for protection of nuclear material. The agency also has long supplied technical assistance to states desiring help. Unlike the nuclear Nonproliferation Treaty’s (NPT) requirement of safeguards for nuclear reactors, however, these physical protection standards are voluntary, unless required by a state supplying the nuclear material. No treaty yet gives the IAEA authority to adopt required physical protection standards, and many states have long resisted such standards.

Then-IAEA Director-General Hans Blix, in a preface to the 1993 version of the IAEA’s recommendations for physical protection of nuclear reactors and materials, implied it would be preferable to have required rather than discretionary international standards:

Physical protection against theft or unauthorized diversion of nuclear materials and against the sabotage of nuclear materials by individuals or groups has long been a matter of national and international concern. Although responsibility for establishing and operating a comprehensive physical protection system for nuclear materials and facilities within a State rests entirely with the Government of that State, it is not a matter of indifference to other States whether and to what extent that responsibility is fulfilled.

Yet, neither the NPT nor the 1980 Convention on Physical Protection of Nuclear Material (CPPNM) required states to provide protection for nuclear material within their territories. As a result, deciding what protection should be provided within a country was generally left up to the nuclear facility or the national...
Some nuclear supplier states, such as the United States, have asked recipient states to provide fences, walls, or other protections against theft and sabotage, but protection has varied considerably from country to country. By contrast, there were required international standards in the CPPNM for nuclear material transported from one country to another.

**New, Required International Standards**

Since September 11, 2001, heightened concern about terrorists has begun to produce efforts to improve standards for such protection. In 2004 the UN Security Council adopted a new global requirement for protecting nuclear material within countries as part of new Security Council standards to prevent the proliferation of nuclear, biological, and chemical weapons. The new physical protection requirement for nuclear material is set forth in Resolution 1540, which calls on states to “develop and maintain appropriate effective physical protection measures” to guard their nuclear material and nuclear facilities.

The Security Council did not prescribe the characteristics of the measures the states were to adopt except to require that they be appropriate and effective for implementing the states’ responsibilities under Resolution 1540. Nor did it define what it meant by “appropriate” or “effective,” but it did create a committee to interpret and implement Resolution 1540. This committee’s role so far has been to urge states to supply the reports sought by the council on what the states have done to implement the resolution, to review those reports, and to call on those states that have not answered questions adequately or have not yet submitted a report to do so.

When the 1540 Committee was created by the council, the committee’s life was limited to two years, although Resolution 1540 was to continue in effect indefinitely. The two-year limit for the committee was adopted apparently because council members were in disagreement as to the time needed to get countries around the world to respond to the council’s questions and requirements. That job has not been easy, and the council renewed the committee in 2006. It now has acquired a staff and consultants, and it communicates regularly with member states who have not supplied other requested information.

The legal authority of the Security Council to demand Resolution 1540 reports from UN member states has been questioned by some analysts. Resolution 1540 was adopted unanimously, however, and its committee continues to request that states that have not reported adequately do so. So far, the Security Council itself has not adopted resolutions demanding responses from states, and it has not attempted to adopt new council standards for physical protection of nuclear materials. The 1540 Committee’s second term will expire in less than two years. It is not clear who then will shoulder the administrative responsibility for implementing Resolution 1540, particularly its provisions on physical protection of nuclear material.

In 2005, more than 80 CPPNM states-parties agreed to some new standards for protection of nuclear material within each of their countries, but the CPPNM amendment to which they agreed provides standards that are mostly discretionary. For example, the amendment says that the physical protection required of states that agree to the amendment “should be based on the state’s current evaluation of the threat.” What then is required of CPPNM members that do not feel that their nuclear materials and facilities are threatened by terrorists or thieves? In addition, the CPPNM amendment will not go into effect until ratified by two-thirds of CPPNM members, who now total 112 states. By September 2006, only five had done so.

For a number of years before this amendment was agreed upon, CPPNM members debated whether to accept any international standards for protecting their domestic nuclear activities. They had already accepted standards for nuclear material in international transport by joining the CPPNM, but it took years to persuade most CPPNM members that new provisions should be accepted for protecting nuclear materials within their territories. The amendment that was adopted did not provide high standards for such protection, and CPPNM members do not seem to be in a hurry to ratify the amendment. Perhaps they are waiting for the outcome of the 1540 Committee’s efforts affecting physical protection of nuclear material.
In addition, Presidents George W. Bush and Vladimir Putin in July proposed a “Global Initiative to Combat Nuclear Terrorism.” They called for a meeting of “willing partner nations” to agree on methods for cooperation to implement the initiative. In October, a first meeting of the states involved in this voluntary initiative took place in Morocco. Those attending the so-called Group of Eight (G-8) Plus Five meeting included G-8 countries Canada, France, Germany, Italy, Japan, Russia, the United Kingdom, and the United States as well as Australia, China, Kazakhstan, Morocco, and Turkey. According to Undersecretary of State for Arms Control and International Security Robert Joseph, the participants agreed on the goals, principles, and methods for the initiative.

Among the agreed goals was improving the “physical protection systems for nuclear and other radioactive materials and substances.” The agreed principles also included improving domestic measures to account for and secure these materials. Joseph said that “the initiative will help prevent terrorists from acquiring the nuclear and radiological materials needed to set off a nuclear or radiological device” and “will go a long way toward improving the physical security at civilian nuclear facilities.”

The next day, the White House issued a “Statement of Principles by Participants in the Global Initiative to Combat Nuclear Terrorism,” stating that the purpose of the initiative was:

to develop partnership capacity to combat nuclear terrorism on a determined and systematic basis, consistent with national legal authorities and obligations they have under relevant international legal frameworks, notably the Convention for the Suppression of Acts of Nuclear Terrorism [which calls for cooperation between states in investigation, prosecution, and extradition of nuclear terrorists], the Convention on the Physical Protection of Nuclear Material and its 2005 Amendment, United Nations Security Council [Resolution 1540].

Participants also agreed to develop physical protection systems for nuclear and radioactive materials, enhance the security of civilian nuclear facilities, and prevent the provision of safe haven to terrorists, the statement said.

It remains to be seen what effect this initiative will have. The G-8 Plus Five have within their territories most, but not by any means all, of the world’s nuclear materials and facilities. If they could reach a consensus on more exacting nuclear physical protection standards for the future, that would be a step forward. It is as yet unclear, however, whether states will adopt new requirements as a result of the initiative and whether the recommendations will produce significant improvements within the territories of the participants and those of other states.

**Implementation of Resolution 1540**

Of the new international standards for protecting nuclear materials within each country, only Resolution 1540 has any public record of implementation efforts. So far, these efforts have focused on collecting and reviewing the many reports that states submitted in compliance with the resolution’s requirements. By December 2006, 133 UN member states had submitted responses, but 58 still had not. The committee has asked those that have not submitted Resolution 1540 reports to do so, and it has raised questions about reports it considered incomplete. The committee continues both to review reports from states and to assist states requesting help in preparing the reports. The committee has not yet asked the council to issue a mandatory order to any state that has not submitted a report.

How far will the 1540 Committee or the Security Council go to enforce Resolution 1540 requirements on noncompliant states? The 1540 Committee is now the place to turn for enforcement of the resolution’s requirement that states provide “appropriate effective” physical protection of nuclear material against terrorists and thieves. The committee has asked the IAEA in turn to advise the committee on what physical protection services the agency provides to its members. The IAEA’s initial response was to provide information on what the agency was already doing to help its members improve the physical protection of their nuclear facilities:
Since 2001, the IAEA has moved rapidly to review and strengthen its programs and activities to provide states with the means of preventing, detecting and responding to sabotage, theft and unauthorized access to, or illegal transfer of, nuclear material and other radioactive substances, as well as their associated facilities. To prevent such events, we must have a comprehensive global approach to nuclear security, based on internationally accepted instruments, and which is implemented worldwide. Resolution 1540 addresses many of these requirements. The IAEA stands ready to assist states in their efforts to implement the resolution.\[14\]

The IAEA described its programs designed to assist states in improving physical security at their nuclear facilities. For example, the agency helps develop “internationally accepted recommendations and guidelines for the physical protection of nuclear material.” On request, it sends experts to evaluate the national physical protection systems of IAEA member’s nuclear facilities.\[15\]

In considering the adequacy of Resolution 1540 reports of UN members, the 1540 Committee has thus enlisted the help of the IAEA, as is appropriate given the agency’s authority and experience in recommending better protection of nuclear facilities and materials from theft and sabotage. The IAEA now provides to its members recommended standards for physical protection of nuclear facilities; training for those whom its members employ to deal with physical protection; and, on request, an “inspection” and review of members’ efforts to provide physical protection of their nuclear facilities.\[16\]

The IAEA’s review of physical protection at the nuclear facilities of its members is different from its implementation of IAEA safeguards to prevent diversion of nuclear materials at these facilities. Unlike safeguards, physical protection is not a requirement of the NPT. The NPT calls for inspections to assure that safeguards standards are met and that the inspected state’s nuclear material is not diverted to nuclear weapons. There is no similar NPT requirement for IAEA review of physical protection to prevent theft and sabotage of nuclear material. Resolution 1540 now requires physical protection for those purposes, but so far, that requirement has been implemented by the Security Council, not the IAEA.

**Conclusion**

The Security Council would be well advised to consider giving the IAEA a greater role in ensuring that the physical protection requirements of Resolution 1540 are satisfied. The 1540 Committee has acquired expert advisers on necessary physical protection measures. They can hardly be expected, however, to go from country to country as IAEA inspectors do to check that such measures are in place. Nor does it make sense to have two sets of international inspectors for these facilities. It seems worthwhile to consider whether IAEA inspectors could be trained and tasked with checking the adequacy of physical protection at the reactors and other nuclear facilities when they conduct routine inspections. The IAEA inspectors could notify the facilities of any problems and provide the 1540 Committee with copies of their reports.

What more can be done to raise both international standards for physical protection of nuclear materials and compliance with those standards? The pending CPPNM amendments may not do a great deal to raise international standards for physical protection of domestic nuclear facilities because these amendments leave so much to the discretion of each national government. Moreover, they may not go into effect for a few years because of the slow rate of ratification. The general standards for physical protection in Resolution 1540, however, are now in effect. Moreover, the Security Council and its 1540 Committee may have the potential for requiring changes in the physical protection provided for nuclear materials around the world. At the same time, however, the IAEA has greater experience in dealing with physical protection than the 1540 Committee.

The Security Council, backed up by its 1540 Committee, should move ahead to establish effective standards for physical protection of nuclear facilities around the world. It should consider assigning to the IAEA the task of conducting a series of inspections to see whether these standards are being met. Given the current state of physical protection efforts around the world, having the Security Council involved in raising standards to prevent terrorists and thieves from acquiring nuclear material at peaceful nuclear
facilities such as power and research reactors could be a useful next step for the protection of these facilities.

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ENDNOTES


3. Ibid.

4. See UN Security Council Resolution 1673 (2006) (providing for a new Resolution 1540 subcommittee when the term of the first two-year subcommittee had expired).

5. For a description of the 1540 Committee’s actions, see “Briefing by the Chairman of the Security Council Committee Established Pursuant to Resolution 1540,” May 2006.


7. See Paul Kerr, “States Vow to Update Nuclear Materials Pact,” Arms Control Today, September 2005, pp. 42-43. The 2005 agreed text to amend the CPPNM asks states-parties to establish and maintain physical protection measures for nuclear material within the state’s territory, and it lists “fundamental principles” for physical protection that should be applied “insofar as reasonable and practicable.” These include “[t]he responsibility for the establishment, implementation and maintenance of a physical protection regime within a state rests entirely with that State,” and “[t]he State’s physical protection should be based on the State’s current evaluation of the threat.” See IAEA Board of Governors General Conference, GOV/INF/2005/10-GC(49)/INF/6 (September 2005).

8. See CPPNM Amendment of 2004, Arts. 2A and 3G.


14. IAEA Secretariat, “IAEA Activities Relevant to UN Security Council Resolution 1540,” 2005/Note 22. In September 2005, the IAEA General Conference adopted a long resolution listing the steps that the agency and its members had taken “to improve nuclear security and protection against nuclear and radiological terrorism” and commended the IAEA director-general and Secretariat for their “continued efforts to improve nuclear and radiological security and prevent nuclear and radiological terrorism.”

15. Ibid.


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