

**THE INTERNATIONAL ATOMIC ENERGY AGENCY IN THE
CHANGING STRUCTURE OF INTERNATIONAL ORGANIZATION
LAW: A COLD WAR INSTITUTION FACING AN AGE OF TERROR**

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The International Atomic Energy Agency (the IAEA) is the child of the Cold War, and now having grown to adulthood, it faces the rigors and challenges of adulthood, a less hierarchical world, yet one filled with the possibilities and fears that now characterize a post-Cold War world in an age of terror. This, in brief, is the thesis I wish to advance in the course of these two lectures on the IAEA as an international organization and its significance for the law of international organizations. The story can be told in two parts: the first addresses the origins of the IAEA as a organization related to the UN, though not strictly one of its specialized organizations, but more closely related to the rise of the Cold War international system, in which states possessing nuclear weapons exercised hegemony not only through political, military and economic supremacy but also through policies designed to ensure that nuclear weapons would not be acquired by other states in return for which benefits flowing from the peaceful use of the atom could be shared with all nations. The IAEA Statute¹ is thus a product of a different time and perhaps a different world from the one in which we now live.

The second part of the story addresses how, with the fall of the Cold War system and the rise of new transnational threats and opportunities, the IAEA became more deeply enmeshed in the multilateral system, more deeply and actively cooperating with the UN but at the same time acquiring its own voice and, to a certain extent, autonomy as an international organization. In brief, therefore, one can view the evolution of the IAEA as a mirror the international system, both with respect to its changing structure and the relevant set of threats the system faces. The relative degree of independence of the IAEA flows then, not only from its own internal dynamic, but also from the interaction of the IAEA with the changing demands of the international system and the degree to which IAEA autonomy is tolerated. Of special relevance to Inter-American institutional context is that the rise and apparent decline of the regional system of nuclear control appears to be related inversely to the trajectory of the IAEA, arguably supplying evidence that regional and global organizations are in substantial competition, not only in traditional areas of international governance, such as private international law and trade, but also even in the management of international security.

I. The cold war IAEA

The origins of the IAEA are found in the multi-lateralization of unilateral U.S. policy at the beginning of the Cold War, a policy designed to further non-proliferation, ensure dependency on U.S. and other major nuclear suppliers, and enhance the legitimacy of the norm that certain states could possess nuclear weapons as part of the structure of Cold War governance. The IAEA safeguards system, as it evolved, was structurally bounded by the Treaty on Non-Proliferation of Nuclear Weapons (the NPT),² as well as the Treaty for the

¹ Statute of the International Atomic Energy Agency, opened for signature Oct. 26, 1956, 8 U.S.T. 1093, 276 U.N.T.S. 3 (entered into force July 29, 1957) ["the IAEA Statute"] (available at www.iaea.org).

² See Nuclear Non-Proliferation Treaty, opened for signature July 1, 1968, 21 U.S.T. 483, T.I.A.S. No. 6839, 729 U.N.T.S.161 (entered into force March 5, 1970)[the NPT] (article III of the NPT provides for IAEA safeguards on all nuclear material within the jurisdiction or control of the non-nuclear weapons state party).

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Prohibition of Nuclear Weapons in Latin America (the Treaty of Tlatelolco),³ and the traditional principles of sovereignty characteristic of the era. But this part of the story requires a digression into alchemy, the medieval science for turning lead into gold -- in modern parlance, the transmutation of elements somewhat higher up on the periodic table, such as uranium into plutonium.

Part A of the next section will describe the IAEA's origins, both in its technological context and in relation to the politico-military situation, known as the Cold War, in which the IAEA arose. Part B will describe the legal authorities available to the IAEA to fulfill the policy objectives that motivated its founding. Part C will then analyze the events and circumstances causing an institutional crisis for the IAEA as the Cold War ended.

IAEA's origins and initial development

The IAEA's origins and maturation through the Cold War require an exposition of the nuclear technology which provides the essential backdrop for understanding the requirements of nonproliferation policy. It also requires an understanding of how that policy is located in a larger system of politico-military security arrangements. First, we turn to the technology. The elements of the safeguards system can be understood only in that highly-technical context, which in turn is influenced by and influences the larger security context in which, at least during its Cold War phase, the IAEA was a very limited instrument.

1. The nuclear fuel cycle and atoms for peace

Early in the nuclear era, it was recognized that there were essentially three pathways for the production of nuclear material necessary to construct a nuclear explosive device based on plutonium, like the bomb used at Hiroshima, or uranium, like the bomb used at Nagasaki: first, enrichment of uranium in the isotopic form that is fissile or explosive, U235; second, reprocessing of spent nuclear fuel from light-water reactors using low-enriched uranium; and, third, reprocessing of spent nuclear fuel from heavy-water (the isotope known as deuterium) moderated reactors using naturally-occurring uranium. Enrichment simply refers to the separation of the naturally-occurring fissile or explosive isotopic form of uranium, U235, from uranium ore, which normally contains only .711 percent of U235 and over 99 percent of the fertile form U238, which in a nuclear reactor transmutes through the bombardment of the uranium nucleus with an additional neutron into Pu239, a weapons-usable material. By definition, uranium enriched in excess of 20 percent was deemed HEU, with lower-grade reactor fuel, usually 4-6 percent enriched, deemed to be LEU. Various

³ The Treaty of Tlatelolco, opened for signature Feb. 14, 1967, 22 U.S.T.762, T.I.A.S. No. 7137, 634 UNTS 281; supplemented by Additional Protocol I, 22 U.S.T. 786, T.I.A.S. No. 10147, 634 U.N.T.S. 360 (peaceful use commitment with respect to all nuclear materials and equipment by nuclear weapon states applied to territories within the geographical region prescribed in the Treaty of Tlatelolco for which those states are de jure or de facto responsible); and Additional Protocol II, 22 U.S.T. 755, T.I.A.S. No. 7137, 634 U.N.T.S. 364 (commitment by nuclear weapons states not to assist in violations of Treaty of Tlatelolco). Article 13 of the Treaty of Tlatelolco requires IAEA inspections, but Article 13 authorizes additional, challenge inspections to be carried out by the Council created by the Treaty of Tlatelolco (or OPANAL).

technological methods, ranging from gaseous diffusion, centrifuges, and laser isotope separation have been, and continue to be, developed to achieve uranium isotope separation. Reprocessing is simply the separation from spent nuclear fuel of the fissile, or explosive, plutonium yielded when the predominant naturally-occurring isotope of uranium, U238, is irradiated. The essential or “sensitive nuclear materials” for these pathways to a bomb then are HEU, LEU, and heavy-water. Given the common use of LEU fuel for power reactors, thereby offering the plausible justification for the development of an industrial capacity to enrich uranium, it was widely feared early in the nuclear age that the most likely pathway to nuclear weapons development would be through uranium enrichment. A paradigm called the “nuclear fuel cycle” emerged to describe the range of activities -- beginning with the mining of uranium ore; continuing with its transformation into uranium hexafluoride suitable for uranium separation or enrichment techniques; production of uranium fuel for use in power or other reactors; and, ultimately, spent fuel disposal – that enabled states either to independently produce nuclear weapons or sustain nuclear industrial activities. Plausible rationales existed also for the use of plutonium-based fuels, sometimes called mixed-oxide fuels, particular to economize on expensive spent nuclear fuel by developing nuclear fuel cycles that re-used the plutonium contained in spent nuclear fuel, thus in effect producing new reactor fuel in the process of consuming it. As a practical matter, HEU enriched at over 90 percent U235 is said to be bomb-grade.⁴

Thus, from a non-proliferation standpoint, the problem at the beginning of the nuclear age was that nuclear reactors used for entirely peaceful purposes -- such as the production of power or medical, or other, research – yield, or can be configured made to yield or use, precisely the kind of sensitive nuclear material that create pathways to nuclear weapons. Moreover, the essential equipment, materials and technology for nuclear reactors are of concern as well, since even natural uranium can be employed through use of a heavy-water reactor and reprocessing to produce a plutonium-based weapon. In this context, in 1954, now a half-century ago, President Eisenhower of the United States announced a major shift of U.S. policy in refusing to share nuclear material, equipment or technology. Fearing that any attempt to maintain a U.S. nuclear monopoly was implausible, given the development of Soviet and British nuclear power, Eisenhower concluded that only by offering U.S. cooperation, subject to certain safeguards, could the United States discourage states, particularly the defeated Axis Powers Germany and Japan, from developing independent nuclear fuel cycles, which would in turn allow them to develop bomb-manufacturing capabilities. The safeguards initially imposed by the United States as a condition of its willingness to supply nuclear material, equipment and technology quickly became burdensome and politically embarrassing, leading the U.S. and other emerging nuclear suppliers to seek to internationalize the system of nuclear safeguards. It was also true that the U.S. simply faced up to the inevitable reality

⁴ See generally Joseph Cirincione, *Deadly Arsenals: Tracking Weapons of Mass Destruction* 35-42 (Carnegie Endowment for International Peace, 2002)[*Deadly Arsenals*]; the authoritative definitions for the technical terms used above can be found in Article XX of the Statute of the International Atomic Energy Agency. See IAEA Statute, *supra* note 1, art. 20.

that it would eventually need to replace its bilateral system of safeguards, as its monopoly in nuclear supply in the initial phase of the Cold War evaporated. It was in this context that the IAEA was created.⁵

The basic design of the safeguards system is, of course, the central issue in the work of the IAEA. Drawing on the famous Acheson-Lilienthal report followed by the Baruch plan for the creation of an international authority to which the United States would transfer its nuclear material, the original conception was for the IAEA itself to serve as an international repository for nuclear material.⁶ Indeed, many provisions of the IAEA Statute make sense only with this vision in mind.⁷ However, the IAEA never in practice developed this role and instead its main business became the operation of a safeguards system for the states seeking to achieve the benefits of the peaceful use of the atom.⁸ In this sense, the IAEA was always distinct from the specialized agencies of the U.N., since its statutory purpose from the beginning was not only the development of technical cooperation for human development but also to contribute to international security by applying safeguards.⁹

The initial design for IAEA safeguards grew out of Japan's request in 1958 for the IAEA to arrange the supply of Canadian uranium for a research reactor. Negotiation of a detailed agreement based on the IAEA Statutory provisions proved difficult, and it quickly became apparent that individual negotiations for similar agreements in the future could prove cumbersome and embarrassing to an international organization that would need to justify differential treatment of member states. Accordingly, over time the IAEA Secretariat developed a concept for a model safeguards agreement, which it ultimately published. (The first version appeared in 1961 as GC(V)INF/39, and that was revised in 1963 and published as INFIRC/26.) The most complete form of the IAEA pre-NPT safeguards concept appeared in 1965, three years before the conclusion of the NPT, and is known as Information Circular 66, "The Agency's Safeguards System," INFCIRC/66. As amended in INFCIRC/66 rev. 2, this document continues to serve as the basis for non-NPT and non-treaty of Tlatelolco safeguards. Its central premise is that safeguards are applied on plants and largely through the presence and supervision of inspectors, entailing almost continuous supervision of peaceful nuclear activities and an unqualified right of access to safeguarded plants or facilities. That said, creative "contamination" principles extended the scope of INFCIRC/66 safeguards beyond initially agreed facilities. For example, any nuclear material used in a safeguarded facility became subject to safeguards, and insertion of a safeguarded item in an un-safeguarded plant subjected that plant to safeguards as well.¹⁰ While the financial

⁵ See generally David Fischer & Paul Szasz, *Safeguarding the Atom: A Critical Appraisal*, 165-69 (Josef Goldblat ed., SIPRI 1985) [Fischer & Szasz].

⁶ See generally Lawrence Scheinman, *The International Atomic Energy Agency and the World Nuclear Order 51 (Resources for the Future, 1987)* ["Scheinman"]; and Guido Den Dekker, *The Law of Arms Control: International Supervision and Enforcement 270-71 (Martinus Nijhoff 2001)* ["Dekker"].

⁷ See Fischer & Szasz, *supra* note 5, at 142.

⁸ *Id.* at 169.

⁹ *Id.* at 165.

¹⁰ See Fischer and Szasz, *supra* note 5, at 92-93.

burden was high in this early era in the development of the nuclear industry, the degree of assurance the system provided was commensurate with the burden imposed.

Thus, the trade and development side of the Atoms for Peace grand strategy was always tied to the international security dimension, and as the demand for IAEA Safeguards grew with the entry into force of the NPT and Treaty of Tlatelolco, both of which required the imposition of safeguards on peaceful nuclear activities in non-nuclear weapon state (NNWS) parties to those treaties but not on the nuclear weapon state (NWS) parties (as well as parties to the Tlatelolco-treaty protocols under which the NPT NWS agreed to respect the creation of the nuclear weapons-free zone within a defined area in the Western Hemisphere), IAEA Safeguards were more closely tied to the politico-military structure of the Cold War in ways that shaped the structure and content of IAEA Safeguards: first, with respect to their breadth of application; second, with respect to their scope and intrusiveness. Explaining the precise shift in the design of IAEA safeguards in order to further the imperative of encouraging NPT adherence requires, however, a somewhat technical account of the IAEA Safeguards system.

2. The transformed IAEA safeguards system – the move to the NPT

As to their breadth of application, as noted earlier, the basic scheme contemplated by the drafters of the IAEA Statute in the mid-1950s was for an organization that would itself hold and lend nuclear material. Accordingly, the essential design was to ensure that those states that did not themselves already possess an independent nuclear fuel cycle would not acquire that capability through cooperation with the IAEA. Consistent with this initial vision, “agency projects,” “technical assistance,” and “research activities” constituted the principal IAEA non-safeguards-related work, although these projects usually constituted mere support for IAEA-approved programs for technology transfer or construction of a facility based on the supply of a member state. In principle at least, such assistance was open to all member states, so long as the relevant safeguards requirements under the IAEA Statute were applied.¹¹

With NPT adherence, which imposed the requirement that NNWS agree to safeguards on all peaceful nuclear activities, rather than merely specific material subject to a specific IAEA Safeguards Agreement, it was recognized that the NWS benefited militarily and politically from discrimination not only in their entitlement to possess nuclear weapons, but also economically from their freedom from the duty to subject their peaceful nuclear activities to costly IAEA Safeguards. To remedy this perceived disparity, the NWS gradually accepted the burden of IAEA Safeguards, even though the politico-military rationale for the application of safeguards to a nuclear weapons state was inapplicable.¹² If, for example, a NWS wished to breach its NPT obligation and divert nuclear material

¹¹ See generally Reinhard H. Rainer & Paul C. Szasz, *The Law and Practice of the International Atomic Energy Agency, 1970-80*, Supplement No. 1 to the 1970 Edition of Legal Series No. 7, 183-254 (IAEA 1993).

¹² See Fischer & Szasz, *supra* note 5, at 19-20.

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to a NNWS, it would not need to use material safeguarded under its IAEA Safeguards Agreement covering material used for peaceful nuclear activities; it could simply divert material, equipment or technology from its un-safeguarded military nuclear activities without risk of IAEA detection.

The more significant impact of the Cold War system on the IAEA safeguards system, however, was not in the number of states which became bound to accept IAEA safeguards but rather on the nature of the safeguards system itself. In the mid-1950s, the European Atomic Energy Community (EURATOM) was formed, together with the European Coal and Steel Community and the European Economic Community -- as one of the initial three pillars of the European Community. EURATOM safeguards, which developed largely for the purpose of facilitating the development of the nuclear industry in the Federal Republic of Germany as part of its economic reconstruction as a bulwark against the Soviet threat, were substantially less intrusive than the emerging IAEA system of safeguards. Germany's higher level of technological capacity made the target of safeguarding plants themselves an expensive and arguably fruitless proposition. Rather, EURATOM safeguards focused on accounting for nuclear material. Adapting IAEA safeguards to EURATOM's requirements proved to be a critical element in securing broader adherence to the NPT.¹³ Thus, while the change was not unrelated to the increased cost of imposing safeguards on a large number of states -- although the unsurprising truth is that a large number of states have never in fact complied with their NPT obligation to enter into safeguards agreements with the IAEA, for the simple fact that they do not engage in any nuclear activities whatsoever that would require safeguards -- the fundamental engine driving the evolution of IAEA Safeguards was the adherence of Germany and Japan to the NPT and the necessity of diluting the safeguards system to secure their adherence as NNWS.

3. The NPT safeguards Faustian bargain

After the NPT entered into force on March 5, 1970, and to facilitate compliance with the obligation under Article III.1 of the NPT that NNWS parties enter into a safeguards agreement with the IAEA, the Board of Governors moved to develop a safeguards system that would meet the expectations of the NPT. This process produced INFCIRC/153 in 1971; throughout the Cold War period and beyond, it has served as the model for NPT-compliant safeguards agreements.¹⁴ Strictly speaking, Article III.2 of the NPT provides that each state party only "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."¹⁵ "Special" and "source" nuclear material, as defined in the IAEA Statute, refer to HEU and Pu239 and the

¹³ See George Bunn, *Arms Control by Committee: Managing Negotiations with the Russians* 90 (Stanford University Press 1992).

¹⁴ See IAEA Doc. No. INFCIRC/153 (May 1971); 10 I.L.M. 855 (1971) ["INFCIRC/153"].

¹⁵ See NPT, Art. III.2.

materials that can be used to produce such weapons-usable material, such as natural uranium.¹⁶

In principal, then, the NPT called for a safeguards system that was both narrower and broader than the pre-NPT system.¹⁷ On one hand, although the treaty-required safeguards regime for nuclear transfers covers both for nuclear material and certain, defined nuclear equipment, the safeguards required by the NPT apply only to the nuclear material itself. In theory, then, a safeguards regime under the NPT could permit the unaccounted-for transfer of sensitive nuclear equipment or technology, or the construction of a nuclear explosive device, up to but not including the point at which source or special nuclear material was introduced, without the application of safeguards.¹⁸ Indeed, as Fischer and Szasz report, the fact that the IAEA had no official information concerning Italy's transfer to Iraq of a so-called "hot cell" (which is a facility that facilitates the development of the skills necessary to operate a full-blown plutonium separation or reprocessing facility) played a role in Israel's decision to bomb the Iraqi facility at Tuwaitha in 1982.¹⁹ On the other hand, safeguards could not be limited to particular facilities; because the safeguards required by Article III.1 of the NPT applied to "all source or special fissionable material in all peaceful nuclear activities within the territory of such State, under its jurisdiction, or carried out under its control anywhere,"²⁰ the obligation came to be known as the so-called "Fullscope" Safeguards obligation.

However, even if the NPT safeguards obligation was negotiated so as to legitimate EURATOM safeguards, the degree to which the new IAEA Safeguards system would rely less on inspection and more on indirect means to track nuclear material was a matter for interpretation and negotiation. Largely because of the cost involved and the concern of EURATOM countries that the non-proliferation benefits derived from IAEA safeguards would be minimal in relation to the costs involved, new NPT safeguards system relied less on inspectors continuously supervising peaceful nuclear activities at particular facilities than on following the flow of nuclear material which might be used directly or indirectly for nuclear explosive purposes. Accordingly, the INFCIRC 153 drafters designed procedures relating to design, material accountancy, containment and surveillance to assure that no significant quantities of nuclear material could be diverted for non-peaceful use. The concept of "significant quantities" related to an understanding of weapons-design, while design and material accountancy regulation and reporting requirements were intended to ensure that the flow of material could be tracked with a high probability of "timely detection" of evasion. The timeliness of detection was measured in terms of technical understandings of the duration of different pathways to the production of weapons-usable material.

¹⁶ See IAEA Statute, Art. XX.

¹⁷ See generally Mohammed I. Shaker, *The Nuclear Non-Proliferation Treaty: Origin and Implementation* (Oceana Publications 1980), vol. 2, 649-775 (providing commonly accepted treaty negotiating history with respect to safeguards, the IAEA and related issues).

¹⁸ See Fischer & Szasz, *supra* note 5, at 83.

¹⁹ See *id.* at 80.

²⁰ See NPT, Art. III.1.

These measures shifted reliance and costs of compliance in the direction of essentially routine planning and reporting phases of the nuclear activities of safeguarded facilities. Thus, the reliance on inspectors was radically reduced, and the right of inspectors to physical access was for the most part limited to so-called “strategic points” in safeguarded facilities,²¹ which are the physical locations designated for making measurements relating to accounting of nuclear material within or transferred into or out of so-called “material balance areas,”²² which in turn were defined areas, such as a reactor core, in which it was deemed possible to measure both the quantity of nuclear material within the area and every transfer into or out of the area. In theory, the shift from the safeguarding of facilities under INFCIRC/66 to the safeguarding of material under INFCIRC/153 would be a distinction without a difference when a state’s declaration to the IAEA of all the facilities engaging in nuclear activity was accurate. The state’s initial declaration under INFCIRC/153 therefore took on special importance, as did the initial so-called “ad hoc” inspections which agency inspectors could undertake before subsidiary arrangements could be concluded identifying the key locations that would serve as the basis for a safeguards regime for the particular state.²³ So-called “routine” inspections required advance coordination with national authorities, and they ordinarily occurred only at critical points of the nuclear fuel cycle, such as the initial and terminal determinations of the “physical inventory” of nuclear material within a so-called “material balance area” for a given timeframe or the actual withdrawal of spent fuel or introduction of nuclear material to a reactor core, usually occurring several months apart. It was recognized that there would be a deviation between the “physical inventory,” which was determined by actual measurement, and the so-called “book inventory,” which was determined by the physical inventory determined at the initial measurement at any given accounting period and the physical measures of nuclear transfers into and out of a given material balance area. The so-called MUF, or “material unaccounted-for” concept was intended to reflect a recognized and statistically acceptable rate of error or loss in nuclear material accountancy, which would not give rise to concern about diversion of nuclear material.²⁴ But more important, the ad hoc and routine inspections were clearly limited to the terms of national consent, because advance notice was required, subject to the possibility of no-notice inspections but only in accordance with the principle of “random sampling” rather than as a genuine effort to explore information concerning the possibility of diversion.²⁵ Thus, one might plausibly argue this scheme left inspectors with little more to do than merely observe the activities of national authorities.²⁶

²¹ See INFCIRC/153, paragraph 110.

²² See INFCIRC/153, paragraph 116.

²³ See INFCIRC/153, paragraphs 62 (initial report) and 71 (a) (ad hoc inspections); see also Dekker at 289.

²⁴ See INFCIRC/153, paragraphs 102 (book inventory), 113 (physical inventory), and 111 (material unaccounted-for); and 30 (“the technical conclusion of the Agency’s verification activities shall be a statement, in respect of each *material balance area*, of the amount of material unaccounted for over a specific period, giving the limits of accuracy of the amounts stated”) (emphasis in the original).

²⁵ See INFCIRC/153, paragraphs 83 (notice procedures) and 84 (no-notice routine inspections based on random sampling).

²⁶ See generally Dekker, *supra* note 6, at 290-91.

On the other hand, the NPT safeguards system did include new, but untested “special” or on-demand inspection procedures under paragraphs 73 and 77 of INFCIRC/153. These provisions, which arguably were designed to address the possible gap created by the move to safeguarding of declared nuclear materials of the existence of possible undeclared sensitive nuclear facilities – such as fuel fabrication, nuclear enrichment or reprocessing facilities -- or other locations containing undeclared nuclear material, were never invoked during the Cold War. (There was, however, one case in 1983 of routine inspection without advance notification, as was ordinarily given for all routine inspections, of a Swedish facility.²⁷) The origin of the “special inspections” concept can be traced to the Treaty of Tlatelolco, which, in creating a nuclear weapons free zone in the Americas, also provided for challenge inspections to be carried out by the Organization for the Prohibition of Nuclear Weapons in Latin America (OPANAL) at the expense of the state making the request.²⁸ It is potentially far more significant a tool in the NPT context, however, which makes clear that the creation of a so-called “peaceful nuclear explosive device” would be a treaty violation.²⁹ Nonetheless, as will be explained below, both the latent birth defects of the NPT safeguards system -- which may have been bargained-for as the price of broad adherence to the NPT during the height of the Cold War – and its immanent possibilities for more aggressive international inspections became the subject of international attention only a generation later during the rise of new threats of proliferation of weapons of mass destruction in the aftermath of the Cold War.

So it must be conceded that, during the height of the Cold War, because the U.S. desire not to undermine NATO resulted in a commitment to fashion a system for NNWS safeguards acceptable to EURATOM. But this in turn posed economic competition and sovereign equality concerns in Japan. Indeed, a condition of support in the Japanese diet for NPT adherence was in effect that Japan receive – to borrow a term from international trade law – “most favored safeguards” treatment from the IAEA; in other words, that safeguards applied to Japan’s burgeoning plutonium-based nuclear fuel cycle be no more burdensome than those applied to EURATOM countries. As part of its demand for sovereign equality, Japan demanded and obtained the creation of a special IAEA Committee, the Standing Advisory Group on Safeguards Implementation (or SAGSI), to ensure national representation in technical advice to the IAEA Director General and IAEA Board of Governors.³⁰ These moves in the direction of equality of treatment and indirect national participation in technical assessments relevant to safeguards implementation could not help but increase

²⁷ See Fischer & Szasz, *supra* note 5, at 31.

²⁸ See Treaty of Tlatelolco, Article 16(1)(b)(cited in Fischer & Szasz, at 69.

²⁹ See Fischer & Szasz, *supra* note 5, at 91; see generally Davis R. Robinson, The Treaty of Tlatelolco and the United State: A Latin American Nuclear Free Zone, 64 *Am. J. Int’l L.* 283, 289-90 (1970)(reporting debate over Article 18’s provision for peaceful nuclear explosives, under an interpretation of that language advanced by Brazil, Argentina and Nicaragua, and U.S. view that such an interpretation would undermine the object and purpose of the treaty because it would be impossible to determine whether a nuclear device once constructed would be used only for peaceful purposes rather than as a weapon) [“Robinson”].

³⁰ See Fischer & Szasz, *supra* note 5, at 23-25 and 31 n. 3.

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the pressure toward dilution of IAEA safeguards, not only in the overall design of the NPT safeguards but also in the rigor of its actual implementation.

4. The politico-military context of the IAEA: the NPT, security council, and supplier arrangements

In brief, then, the deal permitting German and Japanese NPT accession may have reduced the safeguards burden on NNWS parties to the NPT, but thereby offered an incentive for adherence to the NPT. Since the safeguards system formed part of a linked set of policies, it would not be fair to say that reducing the quality of IAEA Safeguards had a negative net effect on international peace and security. These benefits from the NPT and Treaty of Tlatelolco were substantial and might well have outweighed whatever losses were suffered. The benefits for states included, of course, those that ensued directly from participation in the new security regime. Such benefits included adoption of UN Security Council Resolution 255, the so-called positive security assurance, under which the Security Council, taking note of declarations by the U.S., U.K. and U.S.S.R., acknowledged that aggression or the threat of aggression through the use of nuclear weapons against a non-nuclear weapon state would create a qualitatively new situation requiring action by the principal nuclear powers through the Security Council, entailing the exercise of the Security Council's powers under Chapter VII to address the security needs of a NNWS party facing nuclear attack.³¹ Given the risk of the use of the veto during this period, as well as the probability that any nuclear attack would come from one of the NWS parties to the NPT also serving as Permanent Members of the Security Council,³² it seems clear that the resolution itself was less a promise of Security Council action than a moral and political commitment by the Great Powers to exercise their own powers on behalf of their allies subject to nuclear attack and a signal to their adversaries that an international norm concerning the use of nuclear force was being forged. Indeed, under Article X of the NPT, which provides that attempts to withdraw from the treaty grounded on "extraordinary events jeopardizing" a state's "supreme national interests" must be notified and explained to the Security Council itself, and given the reporting requirements to the Security Council under the IAEA Statute and Safeguards Agreements for violations of those agreements - - which I shall discuss in greater detail below -- it becomes readily apparent that, as a matter of legal design, the Security Council was the appropriate forum for such security assurances. Thus, material breach of a safeguards agreement, withdrawal from the NPT, and the threat or use of nuclear force form a trilogy of "threats to the peace, breaches of the peace, or acts of aggression" well within the continuum of nominal Security Council authority over international peace and security.

Another benefit was the strengthening of the relationship between the NPT, IAEA and U.N. Charter -- particular the Charter's interlocking provisions regarding the threat or use of force under article 2(4) and its collective security

³¹ See S.C. Res. 255 (1968), U.N. Doc. S/INF/23/Rev.1 (1970)(available at un.org).

³² See Jonathan B. Schwartz, Controlling Nuclear Proliferation: Legal Strategies of the United States, 20 *Law & Policy in International Business* 1, 9 (1988)[“Schwartz”].

provisions under chapters VII and VIII – through the so-called “negative security assurances.” Under a set of political assurances, the U.S. declared it would not itself use nuclear weapons against a non-nuclear weapon state except in response to attack against itself or one of its allies in association with another nuclear weapon state.³³ This assurance paralleled the geographically more limited assurance provided in the form of an express treaty commitment made under Additional Protocol II to the Treaty of Tlatelolco, under which an adhering party, such as the U.S., agreed not to use nuclear weapons against a party to the Treaty of Tlatelolco except in response to an attack by a state party in which it was assisted by a nuclear weapon state.³⁴ Together, the non-treaty and treaty negative security assurances formed a sturdy set of incentives for states to enter either the NPT or Treaty of Tlatelolco and thereby undertake an obligation to enter into full-scope safeguards agreements with the IAEA under which all source and special nuclear material within a country would be subject to IAEA safeguards.

A final benefit to states provided by the coupling of the NPT, Treaty of Tlatelolco and IAEA safeguards system was a set of export control policies reinforcing the assurance provided by IAEA safeguards. The NPT parties initially implemented their obligation to require IAEA safeguards as a condition of supply not only on the export of nuclear material but also “equipment or material especially designed or prepared for the processing, use or production” of nuclear material by developing in the so-called Zangger Group, named for its chairman, a so-called “Trigger list” of sensitive nuclear equipment, material and technology that NPT parties would deem subject to NPT safeguards obligations as a condition of supply. This group of NPT parties was later broadened to include suppliers such as France which at that time had not yet joined the NPT, and the items it included was expanded to cover certain technology, equipment, materials, such as heavy water, that were not clearly covered by the NPT requirement of safeguards as a condition of nuclear supply. These new non-treaty commitments, which strictly speaking were not pursuant to the NPT, came to be known as the London Suppliers’ Guidelines. A novel development in these non-NPT controls was the pursuit of requirements of “prior consent” on the manner in which nuclear material would be used, such as reprocessing, and on re-exports of transferred items to third-parties.³⁵ Even more stringent related requirements were unilaterally sought by the U.S. after the enactment of the Nuclear Nonproliferation Act of 1978, such as reprocessing consent rights and full-scope safeguards as a condition of all nuclear supply even with respect to non-NPT, non-Tlatelolco states, yielding some tension with EURATOM and a weakening of the NATO alliance.³⁶ These developments, moving well beyond the terms of the NPT and INFCIRC/153, reflected decreased confidence in the efficacy of the nonproliferation regime of which the IAEA was only a part. India’s detonation of

³³ See *id.* at 9-10 (reporting declaration of President Carter of June 12, 1978).

³⁴ See Additional Protocol II to the Treaty of Tlatelolco, Feb. 14, 1967, U.S.T. 754, T.I.A.S. No. 7137, 634 U.N.T.S. 364 (entered into force Dec. 11, 1969; entered into force for U.S. May 12, 1971).

³⁵ See Fischer & Szasz, *supra* note 5, at 101-03.

³⁶ See Fischer & Szasz, *supra* note 5, at 103-04 (noting that the NNPA required merely *de facto* full-scope safeguards – that is to say, a judgment that safeguards were applied on all nuclear facilities in a country so as to permit the conclusion that the effect of the *de jure* NPT full-scope safeguards requirement was satisfied – rather than the existence of an NPT- or Tlatelolco-compliant safeguards agreement with the IAEA).

its own “peaceful” nuclear device on May 16, 1974, just as the Zangger Committee produced its Trigger List, together with the emerging reality that important states, such as South Africa, Israel, and Pakistan would remain outside the NPT or the Treaty of Tlatelolco for some time to come, concentrated the minds of nuclear suppliers on the need to move beyond IAEA Safeguards.

IAEA member states may have also achieved a benefit of increasing the level of the IAEA’s responsiveness to their wishes. Viewed from another perspective, this benefit can be seen as a collective cost. In other words, even if NPT adherence coupled with multilateral export controls may have increased the security benefits to states, albeit purchased at the price of reducing the quality of the IAEA safeguards system, the burden on the credibility of the IAEA as an international organization may also have increased. It must be recalled that general principles of general international organization law burdened future IAEA participation in the implementation of NPT obligations, which was an essentially discriminatory regime created under special international law yet aspiring to universal adherence. Throughout this period, it should be recalled that the NPT was still, so to speak, on probation, since under Article X.2 of the Treaty the parties had determined that a special conference would be held in 1995 to determine whether the Treaty should “continue in force indefinitely” or “be extended for an additional fixed period or periods.”³⁷ Thus, the burden and political insensitivity of IAEA INFCIRC/153 or NPT Full-scope Safeguards would surely become a criterion in the decision of the NPT parties whether or not to extend permanently the NPT. Thus, the mantra of sovereign equality limited substantially the role the IAEA could play in furthering the implementation of the obligation not to assist NNWS in the acquisition of nuclear weapons. Because of the limited role of the IAEA in enforcing the discriminatory distinctions established by the NPT between NWS’s and NNWS’s, the most the IAEA could do was merely serve as a clearinghouse for the publication and dissemination of the standards agreed to by nuclear fuel cycle suppliers in these other negotiating contexts, such as the Zangger Group and London Supplier Guidelines issued by the so-called Nuclear Suppliers Group (NSG), which had been created to accommodate French participation in multilateral nuclear export policy during the period when France was not a party to the NPT. In both cases, the IAEA merely published these documents as Information Circulars, neither approving nor disapproving their content.³⁸

Additionally, even if the IAEA could have surmounted the perceptual problem of being the instrument of a policy perceived in many circles to discriminate between groups of states, it was even more difficult for states subject to safeguards not to fear that IAEA inspectors were, in some cases at least, agents of foreign powers, especially the NWS, since much of the technical expertise necessary to the formulation and implementation of safeguards of necessity was drawn from experts supplied by the NWSs and their allies.³⁹ To address such potential concerns, the IAEA Statute provided for the independence of the

³⁷ See NPT, Art. X.2.

³⁸ See INFCIRC/209 of 1974 and INFCIRC/254 of 1977.

³⁹ See Fischer & Szasz, *supra* note 5, at 65.

Secretariat and its responsibility to the Board of Governors, and it specifically obligates the Secretariat not to disclose any industrial secrets or other confidential information through their performance of its responsibilities,⁴⁰ although nothing in the Statute or safeguards agreements appears to bar the Secretariat from receiving information from interested third parties – whether it be a newspaper account or a foreign intelligence service – so long as the independence and integrity of the Secretariat is not compromised.

Yet, states might well have been reasonable not to rely only on the provisions of the IAEA Statute designed to address such confidentiality concerns. In part to reduce the risk that inspectors would be agents of foreign powers, in part also for reasons of national and cultural pride, Treaty of Tlatelolco countries (unlike, one might note, countries from every other region of the globe participating in the IAEA Safeguards system) often insisted that inspectors speak Spanish.⁴¹ Indeed, the model NPT safeguards agreement seemed specifically to contemplate this possibility as well, because it invoked the diplomatic model, analogizing the designation of a particular inspector to the sending of the diplomatic or consular representative to a state. Accordingly, prior state consent to the particular inspector named by the IAEA was specifically included in the safeguards agreement.⁴² Confidentiality was also protected by the fact that so-called “subsidiary arrangements,” which are in effect agreements between the IAEA and a state governing the details for implementation of the safeguards agreements, were not published.⁴³ Finally, motivated perhaps by related fears that proprietary knowledge might be released, IAEA members states resisted efforts led by the Secretariat and some member states, such as the U.S., to arrange for the public release of the annual Safeguards Inspection Report (the SIR) -- a document produced by the IAEA Secretariat’s Division on Safeguards, which, without naming names, describes impediments in the implementation of safeguards.⁴⁴

Admittedly, secrecy is necessary to a great extent in the IAEA’s safeguards activities, because the hard reality is that IAEA inspectors must, to some degree at least, be able to protect the confidentiality of their sources and methods of information collection in order to continue to receive information from safeguarded states and their organizations and personnel involved in safeguarded nuclear fuel activities. Accordingly, disclosure of certain details that would identify sources and methods of legitimate information collection by IAEA inspectors would be a necessary limitation on transparency; admittedly, this reduction in transparency would deny other member states access to that information, but it is hard to see how that the overall purpose of the SIR – namely, in evidencing for member states the overall reliability of the safeguards system – would be compromised by appropriate redaction of particular names,

⁴⁰ See IAEA Statute, Art. VII.F.

⁴¹ See Fischer and Szasz, *supra* note 5, at 63-64.

⁴² See INFCIRC/153, paragraph 85(c) (“The Director General may designate each official who has been accepted by the State as one of the inspectors for the State, and shall inform the State of such designations”).

⁴³ See Dekker, *supra* note 6, at 280 (citations omitted).

⁴⁴ See Fischer & Szasz, *supra* note 5, at 68 and 84. (The post-Cold War legitimacy crisis of the IAEA, see *infra* text accompanying notes 88-137, has resulted in a change of that policy). See, e.g., The Safeguards Implementation Report for 2003 (available at <http://www.iaea.org/OurWork/SV/Safeguards/es2003.html>).

locations, dates and the like. Indeed, the SIR, even as a restricted or confidential document, was made available to member states, and therefore presumably fell within reach of their intelligence branches. Non-publication of the SIR may therefore serve the interest of many member states in treating the IAEA as a bulwark against their own civil societies. For example, private commercial and non-commercial entities might have been in a position to influence national policies through information gleaned from the SIR in ways that member states, such as those favoring nuclear fuel cycles based on mixed-oxide fuels that are less resistant to proliferation threats, might have found undesirable. To the extent the credibility of the IAEA safeguards system became a factor not only in the deliberations of member states but also in the public acceptance both of nuclear power and the international system designed to prevent peaceful nuclear development from becoming a threat to international peace and security, transparency of IAEA activities not only to member states but also to civil society increased in importance.

Consequently, one might even suggest that, given the reticence of states to take IAEA inspectors fully into their confidence and the absence of transparency in the efficacy of IAEA Safeguards reporting, one would hesitate to conclude that the IAEA was in a position to provide robust assurance of the non-existence of un-safeguarded nuclear activities in the early stages of any serious effort to escape detection, not only to states themselves but also to their civil societies. As Part II of this paper shall detail, the institutional crisis of the IAEA, brought about by revelation of Iraqi safeguards violations in the aftermath of the Gulf War brought these institutional features of the IAEA under increased levels of public international scrutiny.

5. Conclusions

In sum, the basic structure of the system was determined by the great power politics of the Cold War. The consequences of these decisions remained for the future. But it may well be worth noting now that these features of the IAEA safeguards system may well be – to borrow a phrase Professor John Jackson has used in the entirely unrelated context of the General Agreement on Tariffs and Trade⁴⁵ – “birth defects,” which lead ultimately to the institutional crisis the IAEA suffered after the first Gulf War and the discovery of massive Iraqi un-safeguarded nuclear weapons program in violation of the NPT and Iraqi’s flawed NPT Safeguards Agreement. Thus, the limited nature of the role of the IAEA safeguards system in simply verifying the self-reporting of states, rather than intrusively policing their activities, framed the IAEA’s role as an international organization during the Cold War period. At a doctrinal level, the sovereignty of states expressed and reflected in article 2(7) of the UN Charter’s respect for the “domestic jurisdiction” of states, principles of sovereign equality and non-discrimination in the formulation and application of safeguards, and the pursuit of universality of membership together operated to limit the IAEA’s freedom of action in making policy judgments concerning the activities of its member states.

⁴⁵ See John Jackson et al, *International Economic Relations: Cases, Materials and Test* 214 (4th ed. 2002).

The political and legal structure of the international system during the Cold War period thus constituted central postulates for interpreting the scope of the IAEA's legal authorities and the course of its activities. A close review of this legal design, as a matter of international institutional law, and an analysis of how the end of the Cold War revealed the nascent limitations of IAEA design, to which I now turn, should bear in mind how these fundamental politico-military and legal postulates eroded over time.

The traditional IAEA organization structure and legal authorities

It was not by accident that it was decided in 1957 in the very Statute of the IAEA that the organization's headquarters would be in Vienna, the capital of a country whose restoration of sovereignty was achieved only a few years earlier upon the agreement of the U.S. and U.S.S.R. on the condition of its permanent neutrality.⁴⁶ This origin of the IAEA – as an ostensibly neutral and essentially technical agency – thus marked its early culture as an international organization. Of course, like every international organization in the period following decolonization, and the rise of the Group of 77 and the Nonaligned Movement, the IAEA experienced the challenge and opportunity of reaching into politically-sensitive issues, such as the fight against apartheid, the international response to the Arab-Israeli conflict together with the question of the status of the West Bank, and the recognition issues relating to the legal status of the authorities on Taiwan. But more than most international organizations, the IAEA's central practical focus, and therefore the animating principle for a study of its structure and function as a legal institution, remained the technical issue of conditions for the application of safeguards balanced against the promotion of the peaceful use of atomic energy.

1. The formal authorities of the IAEA and its ordinary operations

The IAEA's major policy making organs are its General Conference, Board of Governors, and its Director-General. In formal law, the first two have actual policymaking authority. In point of fact, however, the General Conference does not overturn the decisions of the Board, and the Director-General's policy-making role, though nominally merely in execution of the policies articulated by the other organs, cannot be underestimated, even in the formative period of the IAEA. It is best to focus, during the Cold War period, on the Board and its composition. In this connection, Article VI.A.1 of the Statute requires states that are "the most advanced in the technology of atomic energy including the production of source materials" be included in the IAEA's Board of Governors. A second important criterion was "equitable geographical distribution."⁴⁷ Later, of course, the SAGSI was constituted without formal amendment of the

⁴⁶ See Fischer & Szasz, *supra* note 5, at 132 n.4; see also The State Treaty for the Re-establishment of an Independent and Democratic Austria, T.S. No. 57 (1957), discussed in Robert Jennings and Arthur Watts, *Oppenheim's International Law*, Vol. 1, 323-24 (9th ed. 1992).

⁴⁷ See IAEA Statute, Art. VI.A.1-2; see also Fischer & Szasz, at 13 n. 3, and Dekker at 273.

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IAEA Statute to ensure that in technical matters the full range of developing country concerns could be represented.⁴⁸

These compositional features of the IAEA Board of Governors and its Safeguards system go far towards explaining the basic thrust of IAEA activities for the duration of the Cold War. These activities focused largely on realizing the vision of Atoms for Peace by facilitating the creation of a technical and legal infrastructure for the operation of a nuclear power industry and the realization of other peaceful uses of nuclear science. These areas included technical cooperation and scientific research, a legal regime for nuclear liability, and the development of standards for nuclear safety and assistance. This work was essentially a pragmatic response in the best spirit of the technical agencies of the United Nations, but it set aside the moral or philosophical questions relating to the use of nuclear power and its implications for the stewardship of the natural environment. In many ways, then, the IAEA served as a facilitator for dealing with emerging issues or threats to the development of nuclear power.

Three areas stand out: technical cooperation or technology transfer, such as for food irradiation and nuclear medicine; the crafting of legal regimes establishing a framework for managing potentially disruptive liability risk precluding rational investment in peaceful nuclear activity; and physical protection of nuclear material and safety for all nuclear activities. In short, the logic of promoting nuclear power requires controlling the costs of its use, including not only through managing liability but also through efforts toward preventing and attenuating the impact of nuclear incidents.

Technical cooperation

IAEA technical cooperation was first and foremost part of the great goal of international reconstruction and development following the Second World War and the wave of de-colonization following the war that made international development assistance a global imperative. Accordingly, it was thought that nuclear power could be developed as an inexpensive source of energy to power development;⁴⁹ also, it was seen as a the tool for advancing medical technology to prevent the transmission of disease in the face of increased international flows of disease vectors, as well as in agricultural development to improve the quality and safety of food and thereby increase its supply for a growing global population.⁵⁰ The technical support of the IAEA in national projects for these purposes made it part of the network of international institutions, such as the World Bank. From this standpoint, the IAEA was itself not immune from the politicization of technical agencies as many states pursued the creation of a new international economic order in the 1970s and early 1980s.⁵¹

⁴⁸ See Dekker, *supra* note 6, at 25.

⁴⁹ See Scheinman, *supra* note 6, at 106-110 (detailing the nuclear power promotion activities of the IAEA).

⁵⁰ See *id.* at 91-102 (detailing the food and health programs of the IAEA).

⁵¹ See *id.* at 6, at 218-224 (detailing the activities of the Group of 77).

Nuclear liability

At the beginning of the nuclear age, in the U.S., the Price-Anderson Act limited the potentially-enormous liability of the U.S. nuclear industry and provided for nuclear operator, insurance, and government backing in the event of a nuclear incident leading to personal and property damage.⁵² It was soon recognized that for nuclear commerce to move forward internationally, it would become necessary to develop an international system for limiting nuclear liability and providing funds for compensation of those who might suffer harm from a nuclear incident. Like the U.S., the Organization for Economic Cooperation and Development (OECD) countries established frameworks for limiting nuclear liability and providing funds for compensation through the Paris and Brussels Conventions on Nuclear Liability.⁵³ It was in this spirit that the IAEA served as a forum for negotiating a global convention on nuclear liability.⁵⁴ Because of the emergence of two, apparently competing legal regimes – one closely tied to EURATOM; the other bound to the IAEA – it was felt necessary to draft a treaty enabling states participating in both to have a clearer set of legal rights and obligations.⁵⁵ Similar concerns have troubled the provision of bilateral assistance in the countries of the former Soviet Union under the U.S. Nunn-Lugar program and other assistance by other nuclear powers.⁵⁶

⁵² The Price- Anderson Act, Public Law 85-256, 71 Stat. 576, (11956), codified at 22 U.S.C. Section 2210 (2000).

⁵³ See Paris Convention on Third Party Liability in the Field of Nuclear Energy (the Paris Convention), adopted July 29, 1960, entered into force April 1, 1968, 956 U.N.T.S. 251, as amended by the Additional Protocol, adopted January 28, 1964, 1519 U.N.T.S. 329, reprinted in 55 Am. J. Int'l L. 1082 (1961); and the Brussels Convention Supplementary to the Paris Convention (the Brussels Convention), adopted Jan. 31, 1961, entered into force December 4, 1974, 1041 U.N.T.S. 358, as amended by the Additional Protocol, adopted January 28, 1964, 1519 U.N.T.S. 329 (available at <http://www.nea.fr/html/law/legal-documents.html>).

⁵⁴ See The Vienna Convention on Civil Liability for Nuclear Damage, adopted and opened for signature May 21, 1963, entered into force on 12 November 1977; reprinted in INFCIRC/500, March 20, 1996 (available at <http://www.iaea.org/Publications/Documents/Infcircs/1996/inf500.shtml>); see also The Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage, adopted by a Diplomatic Conference, September 8-12, 1997, opened for signature at Vienna on September 29, 1997 at the 41st General Conference of the International Atomic Energy Agency, entered into force October 4, 2003 (with deposit of fifth instrument of ratification); reprinted in INFCIRC/566, July 22, 1998 (available at <http://www.iaea.org/Publications/Documents/Infcircs/1998/infcirc566.shtml>). The relatively limited adherence to the treaty is explicable in terms of the low compensation levels set forth in the treaty and the availability of higher, alternative standards in the major nuclear powers under their applicable domestic laws and, as applicable, regional conventions.

⁵⁵ See Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention, adopted and opened for signature by the Conference on the Relationship between the Paris Convention and the Vienna Convention, jointly convened by the International Atomic Energy Agency and the Organization for Economic Co-operation and Development at the Headquarters on the International Atomic Energy Agency in Vienna, on September 21, 1988, entered into force on April 27, 1992, T.I.A.S. 28907, 1672 U.N.T.S. 301; reprinted in INFCIRC/402, May 1992: (<http://www.iaea.org/Publications/Documents/Infcircs/Others/inf402.shtml>)

⁵⁶ See generally R. Douglas Brubaker and Leonard S. Spector, Liability and Western Nonproliferation Assistance to Russian: Time for a Fresh Look?, *The Nonproliferation Review* 3 (Spring 2003)(discussing exhaustively liability agreements entered into by the U.S. and Norway, in particular, with the states of the former Soviet Union as a condition for the provision of assistance in nuclear non-proliferation, nuclear safety, and nuclear waste management).

Physical protection and nuclear safety and assistance

During the late 1970s, with the rise of international terrorism, the perceived risk of nuclear catastrophe focused not only on unintended nuclear incidents (torts or delicts) but rather on intended nuclear disasters (crimes or acts of war). It was in this context that the IAEA served as the negotiating forum for states to develop a text for new set of standards.⁵⁷ The Convention on the Physical Protection of Nuclear Material (CPPNM)⁵⁸ was an exercise in IAEA-mediated cooperation between states, as the risk of nuclear terrorism revealed itself in the 1970s. By its own terms, its obligations are limited to physical protection obligations during international transport of nuclear material and explicitly reaffirmed state sovereignty.⁵⁹ Providing for acceptance and implementation of IAEA standards for international transport,⁶⁰ this treaty reflects the continuing supremacy of the technical expertise accumulated in the IAEA Secretariat, in cooperation with the major nuclear powers.⁶¹

Similarly, in the face of the 1985 Chernobyl incident, the IAEA also served as the negotiating forum for three additional treaties: the first confirming a state's obligation under international law to inform potentially-affected states of a domestic nuclear incident, the 1986 Nuclear Accident Notification Convention⁶²; a second providing a framework for international assistance in the event of such an incident, the 1986 Nuclear Assistance Convention⁶³; and, finally, less than a decade later as momentum built in the face of the continuing effects of Chernobyl, went beyond addressing the consequences of failures in nuclear facility operation to set standards for operator practices themselves, the 1994 Nuclear Safety Convention.⁶⁴ All these treaties were facilitated by the technical

⁵⁷ See Fischer & Szasz, *supra* note 5, at 107.

⁵⁸ The Convention on the Physical Protection of Nuclear Material, adopted October 28, 1979, opened for signature on 3 March 1980, entered into force February 8, 1987, reprinted in INFCIRC/274/Rev. 1 May 1980 (available at <http://iaea.org>).

⁵⁹ Article 4 (7) provides: "Nothing in this article shall be interpreted as in any way affecting the territorial sovereignty and jurisdiction of a State, including that over its airspace and territorial sea." *Id.*

⁶⁰ See *id.* at Annex I (providing a technical set of standards based on IAEA expertise).

⁶¹ Proposed amendments to the CPPNM, adopted at the IAEA-sponsored conference in Vienna on July 4-8, 2005, would extend the scope of the treaty to regulate nuclear transport within states as well. This development should it move forward to full ratification is arguably related to the continuing effort of states, with IAEA cooperation, to respond to the threat of international terrorism not only in international nuclear transport but also in domestic transport. See Conference on Physical Protection of Nuclear Material Set for July, Staff Report, 20 May 2005 (available at <http://www.iaea.org/Publications/Documents/Conventions/cppn.html>).

⁶² The Convention on Early Notification of a Nuclear Accident was adopted by the General Conference at its special session, 24-26 September 1986, opened for signature at Vienna on September 26, 1986 and New York on October 6, 1986, and entered into force on 27 October 1986; reprinted in INFCIRC/335, Nov. 18, 1986 (available at <http://www.iaea.org/Publications/Documents/Infcircs/Others/inf335.shtml>).

⁶³ The Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, adopted by the General Conference at its special session, September 24-26, 1986, opened for signature at Vienna on September 26, 1986 and at New York on October 6, 1986, entered into force February 26, 1987; reprinted in INFCIRC/336, Nov. 18, 1986 (available at <http://www.iaea.org/Publications/Documents/Infcircs/Others/inf336.shtml>).

⁶⁴ The Convention on Nuclear Safety, adopted June 17, 1994, opened for signature on 20 September 1994, entered into force October 24, 1996; reprinted in INFCIRC/449, July 5 1994) (available at <http://www.iaea.org/Publications/Documents/Infcircs/Others/inf449a1.shtml>). The treaty provided for standards without sanctions for non-compliance, but in an effort to creating a culture of compliance in the application of entirely domestic standards provides for national reports on compliance together with an international peer review mechanism.

and political expertise of the IAEA, but focused almost exclusively on the international effects of peaceful use of nuclear energy. They did not touch on underlying policy questions within national jurisdiction concerning whether and what kinds of nuclear activities should be undertaken by states or any particular class of states, such as states likely to cooperate with non-state actors engaged in terrorism. Such questions were for the Security Council and the great powers.

Legal authorities to impose sanctions and the IAEA's extraordinary activities

At the beginning, the IAEA Statute contemplated the relation between safeguards and the U.N.'s responsibility for international peace and security, since Article XII.C of the Statute permits notification to the Security Council and General Assembly of any finding of safeguards non-compliance as determined by the IAEA Board of Governors.⁶⁵ At the outset, it should be noted that the sanctions provisions of the IAEA Statute in a case of "non-compliance" by a member state under the IAEA Statute were written with the initial assumption that the IAEA itself would be the principal supplier of nuclear material, equipment and technology – thus the salience of "agency projects" in the initial IAEA design.⁶⁶ A related assumption at the beginning of the Cold War may have been that the IAEA would continue to function as an agent of the states holding a monopoly, or at worst oligopoly, position in nuclear supply.⁶⁷ Therefore, that sanctions would come in the form of the denial of continued supply reflected the notion that, because the IAEA was as a specialized, technical entity, its remedial powers would be limited to the specific area of its competence and authority. Indeed, the withdrawal of further support under Articles XII.A.7 and XII.C of the IAEA Statute seemed to contemplate withdrawal of IAEA support for the specific facilities that had been the affected by a violation.⁶⁸ Article XII.A.7 specifically provides that: "In the event of non-compliance and failure by the recipient State or States to take requested corrective steps within a reasonable time, to suspend or terminate assistance and withdraw any materials and equipment made available by the Agency or a member in furtherance of the project."⁶⁹ Accordingly, notions of proportionality in countermeasures corresponded with practical judgments that denial of IAEA supply, or IAEA cooperation in the application of safeguards on previously-supplied nuclear equipment, material or technology, would operate as an adequate deterrent to noncompliance.⁷⁰ More important, to the extent the international community relied on the likelihood of detection alone as a deterrent, rather than ostracism from peaceful nuclear cooperation through the IAEA, the chief legal advisor to the IAEA was confident enough to write in 1975, at the near inception of IAEA NPT safeguards, that as to

⁶⁵ See IAEA Statute, Articles XII.C (using permissive or facultative language); see also IAEA Statute, Articles III.B.4 and XVI.B.1 and Articles III.1(b) and IX of the UN/IAEA Relationship Agreement, 281 U.N.T.S. 369 (1957)(referring to "any case of non-compliance").

⁶⁶ See Fischer & Szasz, *supra* note 5, at 145-46.

⁶⁷ See Fischer & Szasz, *supra* note 5, at 143.

⁶⁸ See Fischer & Szasz, *supra* note 5, at 145.

⁶⁹ See IAEA Statute, Art. XII.A.7.

⁷⁰ See Fischer & Szasz, *supra* note 5, at 147; see generally Paul Szasz, *The Law and Practices of the International Atomic Energy Agency*, 601-05 and 612-33 (IAEA 1970).

“whether the Agency could effectively detect, in a State subject to comprehensive safeguards, a clandestine nuclear cycle” it was clear that “even in the most repressed societies rumors and news of the construction of large ‘secret’ facilities would reach the Agency long before these became operations.”⁷¹

These assumptions were falsified early in the Cold War period. First, changing conditions of nuclear supply falsified the assumption that an IAEA Board of Governors finding coupled with withdrawal of IAEA nuclear support could effectively stop a state from continuing a program of diversion of safeguarded nuclear material to an un-safeguarded nuclear weapons program. Second, the role of the Security Council itself grew in salience with the adoption of the NPT, which provided for three months’ advance notification to the Security Council of any withdrawal from the NPT when so-called “extraordinary events” jeopardized a state’s “supreme national interests.”⁷² The NPT withdrawal clause quite clearly contemplated the case in which an apparent safeguards violation, either yielding or not yielding a finding of noncompliance by the IAEA Board of Governors, would nonetheless trigger action, such as NPT withdrawal, by a state that felt especially threatened by a safeguards violations.⁷³ Clearly, then, the principal significance of the risk of an IAEA sanction at the height of the Cold War was merely to serve notice to the international security of a potential threat to the peace, rather than to serve as a deterrent in its own right. The provisions of the IAEA sanctions law need to be understood in that context.

IAEA sanctions law derives, in the first instance, from its Statute and the agreements the Statute authorizes the IAEA to conclude. For the moment, we set aside whatever theoretical right the IAEA might have as an international organization to act so as to fulfill its purposes under general international law or whatever authorities that might be delegated to it by another international organization, such as the UN, and which the IAEA it might be competent to implement, a question raised in the aftermath of the first Gulf War under UN Security Council Resolution 687.⁷⁴ Article XII.C of the Statute provides for reports on state noncompliance to the Security Council and the General Assembly.⁷⁵ The key obligations that are the subject of compliance are thus

⁷¹ See Paul C. Szasz, *The Adequacy of International Nuclear Safeguards*, 10 *J. Int’l L. & Econ.* 423, 435 (1975) (former IAEA legal officer).

⁷² See NPT, Art. X.1.

⁷³ Cf. Fischer & Szasz, *supra* note 5, at 145 and 152n.17.

⁷⁴ See *infra* text accompanying notes 106-117.

⁷⁵ Article XXI.C states: “The staff of inspectors shall also have the responsibility of obtaining and verifying the accounting referred to in sub paragraph A-6 of this article and of determining whether there is compliance with the undertaking referred to in sub paragraph F-4 of article XI, with the measures referred to in sub paragraph A-2 of this article, and with all other conditions of the project prescribed in the agreement between the Agency and the State or States concerned. The inspectors shall report any non-compliance to the Director General who shall thereupon transmit the report to the Board of Governors. The Board shall call upon the recipient State or States to remedy forthwith any non-compliance which it finds to have occurred. The Board shall report the non-compliance to all members and to the Security Council and General Assembly of the United Nations. In the event of failure of the recipient State or States to take fully corrective action within a reasonable time, the Board may take one or both of the following measures: direct curtailment or suspension of assistance being provided by the Agency or by a member, and call for the return of materials and equipment made available to the recipient member or group of members. The Agency may also, in accordance with article XIX, suspend any non-complying member from the exercise of the privileges and rights of membership.”

found in Articles XII.A.6⁷⁶ and Article XI.F.4,⁷⁷ and relate to peaceful use and safeguards. These safeguards and peaceful use obligations, it must be underscored, arose in the context of Agency projects, within the meaning of the original design of the IAEA Statute.

The Safeguards regime itself, however, provides much greater content on the meaning of a finding of noncompliance and the standards and procedures applicable to any such determination and locates the reports required under Article XII within a separate context of the IAEA's role in a verification system for NPT compliance. Paragraph 18 of INFCIRC/153, the Model NPT Safeguards agreement under the chapeau of "Measures in relation to verification of non-diversion," provides that: "The Agreement should provide that if the Board, upon report of the Director General, decides that an action by the State is essential and urgent in order to ensure verification that nuclear material subject to safeguards under the Agreement is not diverted to nuclear weapons or other nuclear explosive devices the Board shall be able to call upon the State to take the required action without delay, irrespective of whether procedures for the settlement of a dispute have been invoked."⁷⁸ Paragraph 19 further states that: "The Agreement should provide that if the Board upon examination of relevant information reported to it by the Director General finds that the Agency is not able to verify that there has been no diversion of *nuclear material* required to be safeguarded under the Agreement to nuclear weapons or other nuclear explosive devices, it may make the reports provided for in paragraph C of Article XII of the Statute and may also take, where applicable, the other measures provided for in that paragraph. In taking such action the Board shall take account of the degree of assurance provided by the safeguards measures that have been applied and shall afford the State every reasonable opportunity to furnish the Board with any necessary reassurance."⁷⁹ Paragraph 22 excludes from compulsory third-party dispute settlement procedures "any dispute arising out of the interpretation or application thereof except a dispute with regard to a finding by the Board under paragraph 19 above or an action taken by the Board pursuant to such a finding..."⁸⁰

⁷⁶ Article XII.A.6 authorizes the IAEA "To send into the territory of the recipient State or States inspectors, designated by the Agency after consultation with the State or States concerned, who shall have access at all times to all places and data and to any person who by reason of his occupation deals with materials, equipment, or facilities which are required by this Statute to be safeguarded, as necessary to account for source and special fissionable materials supplied and fissionable products and to determine whether there is compliance with the undertaking against use in furtherance of any military purpose referred to in sub-paragraph F-4 of article XI, with the health and safety measures referred to in sub-paragraph A-2 of this article, and with any other conditions prescribed in the agreement between the Agency and the State or States concerned. Inspectors designated by the Agency shall be accompanied by representatives of the authorities of the State concerned, if that State so requests, provided that the inspectors shall not thereby be delayed or otherwise impeded in the exercise of their functions..." IAEA Statute, supra note xx, art. XII.A.6.

⁷⁷ Article XI.F.4 requires that, "Upon approving a project, the Agency shall enter into an agreement with the member or group of members submitting the project, which agreement shall Include undertakings by the member or group of members submitting the project: (a) that the assistance provided shall not be used in such a way as to further any military purpose; and (b) that the project shall be subject to the safeguards provided for in article XII, the relevant safeguards being specified in the agreement..." IAEA Statute, supra note xx, art. XI.F.4.

⁷⁸ See INFCIRC/153 rev. 2 (available at www.iaea.org).

⁷⁹ *Id.* (emphasis in the original).

⁸⁰ *Id.*

In removing paragraph 19, and therefore paragraph 18 issues, from legal dispute resolution procedures, the model NPT safeguards agreement transfers these issues to political dispute resolution. Put another way, questions relating to the IAEA's "inability to verify that there has been no diversion of nuclear material," rather than on a finding of noncompliance as such by a state party to a safeguards agreement, serves as the condition for making the reports to the Security Council and General Assembly required by the Statute in the case of noncompliance with an IAEA Project Agreement. This safeguards treaty criterion is plainly broader than the statutory criterion, since it might in theory be triggered in a case in which a state has not violated its safeguards obligations and through no fault of its own is in a situation in which the IAEA could not make the requisite finding of non-diversion. At the same time, the precise language, which is facultative rather than mandatory, takes account of this possibility, because in such a case the IAEA Board of Governors would arguably be free to decline to make the reports contemplated under paragraph 19.⁸¹

That said, the critical unresolved legal question was the meaning of paragraph 18, which permitted the Board of Governors to determine that "an action by the State is essential and urgent in order to ensure verification that nuclear material subject to safeguards under the Agreement is not diverted to nuclear weapons or other nuclear explosive devices" and in effect draw adverse inferences from a state's failure to comply with such a request. Whether that authority could be construed to extend to challenge inspections comparable to those authorized under the Treaty of Tlatelolco was a question that was never tested during the Cold War period. If one were to assume that "action" contemplated under paragraph 18 would need somehow to be rooted in the IAEA Statute or IAEA Safeguards Agreement, then the legal basis for such a request obviously would have been located in the so-called "special inspections" provision of INFCIRC/153. In this connection, paragraph 77 provides: "The Agreement should provide that in circumstances which may lead to special inspections for the purposes specified in paragraph 73 above the State and the Agency shall consult forthwith. As a result of such consultations the Agency may make inspections in addition to the routine inspection effort provided for in paragraphs 78-82 below, and may obtain access in agreement with the State to information or locations in addition to the access specified in paragraph 76 above for ad hoc and routine inspections. Any disagreement concerning the need for additional access shall be resolved in accordance with paragraphs 21 and 22; in case action by the State is essential and urgent, paragraph 18 above shall apply."⁸² The purposes specified in paragraph 73(a) and (b) are, respectively, as follows: "In order to verify the information contained in special reports"; and "If the Agency considers that information made available by the State, including explanations from the State and information obtained from routine inspections, is not adequate for the Agency to fulfill its responsibilities under the Agreement. An inspection shall be deemed to be special when it is either additional to the routine inspection effort provided for in paragraphs 78-82 below, or involves access to information or

⁸¹ See Fischer & Szasz, *supra* note 5, at 138.

⁸² See INFCIRC/153 rev. 2, para. 77 (available at www.iaea.org).

locations in addition to the access specified in paragraph 76 for ad hoc and routine inspections, or both.”⁸³

The critical language of paragraph 73(b) -referring to whether the information already made available to the IAEA is “adequate for the Agency to fulfill its responsibilities under the Agreement”- of necessity related back to paragraph 28 of INFCIRC/153, which states that: “The Agreement should provide that the objective of safeguards is the timely detection of diversion of significant quantities of *nuclear material* from peaceful nuclear activities to the manufacture of nuclear weapons or of other nuclear explosive devices or for purposes unknown, and deterrence of such diversion by the risk of early detection.”⁸⁴ In other words, paragraphs 73, 77 and 28 form an interlocking set of norms that, in effect, tie the IAEA’s right to request special inspections to its discharge of its duties in accordance with the object and purpose of the agreement and, correlatively, its performance of its discretionary notification responsibilities under criteria set forth in paragraph 19.

The IAEA’s right to make these reports might turn on the gravity of the state’s conduct and perhaps even on whether, irrespective of the threat involved, the state’s behavior might be deemed more or less problematic depending on whether it constituted a breach of treaty. Because all nuclear material under a country’s jurisdiction or control was required to be safeguard under the NPT, and INFCIRC/153 was intended to implement that obligation so as to be read *in pari materia* with the NPT, a failure to report the existence of nuclear material would arguably constitute an NPT safeguards violation. Under this creative view, which remained untested during the Cold War, an un-safeguarded, clandestine nuclear weapons program in violation of the NPT would be deemed *a fortiori* to violate the NPT Safeguards Agreement as well, in addition to giving rise to the Board of Governors’ authority under paragraph 18, 73 and 77 to call upon a member state to permit special inspections, which (if rejected or impeded) would give the Board the right to draw the inference necessary under paragraph 19 to turn the matter over to the Security Council. Under this scenario, put another way, non-cooperation in the fulfillment of the object and purpose of the NPT safeguards agreement, as set forth in paragraph 28, would itself constitute a violation of the safeguards agreement itself, in view of the core obligation under the law of treaties that every obligation is to be carried out in “good faith.”⁸⁵

Assuming, however, that noncompliance with a request for a special inspection did not constitute itself a violation (or material breach) of the safeguards agreement, the failure to comply with a request made under paragraph 18 could still permit the IAEA to make a reports contemplated in Article XII.C of the Statute to the Security Council and/or General Assembly when “Agency is

⁸³ *Id.* at paras. 73(a) and (b).

⁸⁴ *Id.* (emphasis in the original).

⁸⁵ See Vienna Convention on the Law of Treaties, art. 27, concluded May 23, 1969, 1155 U.N.T.S. 331 [“VCLT”]; see generally Antonio F. Perez, Survival of Rights Under the Nuclear Non-Proliferation Treaty: Withdrawal and the Continuing Right of International Atomic Energy Agency Safeguards, 34 Virginia Journal of International Law 749 (1995)[“Survival of Rights”].

not able to verify that there has been no diversion of *nuclear material* required to be safeguarded under the Agreement to nuclear weapons or other nuclear explosive devices.”⁸⁶ In other words, IAEA reports to the United Nations may occur irrespective of whether a state subject to safeguards is in violation either of the IAEA Statute or its other IAEA-related legal commitments. The state party to an NPT or Tlatelolco safeguards agreement could be deemed to acquiesce in the view that the mere fact that the IAEA could not deny the reasonable possibility of diversion of nuclear material would create a situation which could, depending on the circumstances of course, give rise a threat to international peace and security within the purview of the Security Council and subject to a potential decision under Chapter VII of the Charter.⁸⁷

This creative legal analysis, while merely hypothesized by IAEA legal theorists throughout the Cold War, became a matter of practical concern only after the Iraq crisis brought the inadequacies of IAEA Safeguards in sharp relief. In brief, as the next section recounts, the legal questions that might have arisen with respect to the IAEA’s inspection authorities were resolved by supervening resolutions of the UN Security Council. The questions re-emerged, however, as the inadequacies of the IAEA Safeguards system were further revealed when North Korea’s initial non-performance of its safeguards obligations, after it finally adhered to the NPT, compelled the IAEA to test the outer limits of its legal authorities to restore the credibility it has lost in Iraq. In a sense, however, these developments – coupled with the IAEA’s triumphal involvement in the verification of South Africa’s acquisition of non-nuclear weapons status as an NPT member, when the Agency was able to give the world confidence that South Africa’s long-suspected acquisition of nuclear weapons capability had finally been reversed – reflected a turning point for the IAEA. In short, at the same time that the Agency’s increased role in international security added to its power and significance in world affairs, these developments drew attention to its birth defects and the need for some corrective surgery.

Institutional crisis at the end of the Cold War and the need for expanded authority – Early triumphs and mortal challenges.

For the IAEA, as for almost everyone else, the end of the Cold War brought a false sense of euphoria, a heady feeling that it was now possible to surmount even the most daunting obstacles. The momentary euphoria was even more poignant because it witnessed early nonproliferation triumphs, but these were indeed accompanied by failure on other fronts, failures from which it is still too early to say the IAEA had recovered. It is probably best to view the transitional moment for the IAEA as a play in three acts: the first act begins with dramatic transformation in Africa, South America and the Former Soviet Union; in the second act, the success in South Africa and Latin America was quickly overshadowed by the revelation in Iraq that the emperor had no clothes; and in

⁸⁶ See INFCIRC/153, para. 19 (emphasis in the original).

⁸⁷ See *infra* text accompanying notes 162-171 (discussion of the relationship of this argument to the standards applicable to UN verification of Iraq’s non-possession of weapons of mass destruction in the diplomacy preceding the second Gulf War).

the third act, the IAEA was required to make an effort to re-establish its credibility in North Korea.

1. Clearing away the detritus of the cold war

In some ways, the possession of nuclear weapons in South Africa was a consequence of decolonization and the ruling South African white minority's fear of strategic encirclement, with nuclear weapons possession serving as a tool of last resort to induce Western Powers to come to their aid in the event the apartheid regime was threatened with extinction at the hands of the Communist-supported Front Line states.⁸⁸ As the Soviet Union dissolved as a politico-military counterweight to the West, and as South Africa's white elites made the strategic decision to end apartheid, the rationale for nuclear weapons disappeared, leading to a role for the IAEA in the verification of the dismantling of a nuclear weapons program involving assembled nuclear weapons. Similarly, the Treaty of Tlatelolco must be seen as response to the Cuban missile crisis and the region's fear of being caught in the middle of a nuclear conflict between the two great powers.⁸⁹ The initial failure of Argentina and Brazil to join the emerging Latin American consensus on this matter reflected the desire of both states to maintain some freedom of action in the diplomatic game between the two superpowers, but it had the effect of reinforcing the willingness of Cuba to remain a holdout from the nonproliferation regime. It was no accident then that the end of the Cold War may have played a role in facilitating nonproliferation triumphs in which the IAEA played a central role in both these areas, paving the way for the development of expertise it could later employ to provide the world assurance that the former nuclear weapon states of the former Soviet Union also no longer possessed nuclear weapons.

a. South Africa

It appears that, in the late 1960s and early 1970s, South Africa commenced a covert nuclear program that may have resulted in a nuclear test over the Indian Ocean during 1979. U.S. satellite intelligence's detection of the signature of a possible nuclear event was reviewed by an expert inquiry with inconclusive results. It is assumed by many that this test, if it occurred, was a joint Israeli-South African effort, based in part on the subsequent revelation by a former South African military official that Israel had indeed assisted South Africa's nuclear program by supplying tritium, which is used to boost the yield of ordinary fission weapons, in return for natural uranium. The election of a new reformist government in South Africa, much like the rise of Gorbachev in the former Soviet Union, resulted in radical regime change, which in turn convinced the South African government that its strategic rationale for possessing nuclear weapons no longer applied. Accordingly, President de Klerk on February 26, 1990, just as he released Nelson Mandela from prison, issued orders to terminate South Africa's nuclear program – including the decommissioning of the uranium enrichment

⁸⁸ See *Deadly Arsenals*, supra note 4, at 360-61.

⁸⁹ See generally Robinson, supra note 29, at 283.

facility at Pelindaba, just west of Pretoria; the dismantling of six nuclear weapons; and the destruction of the hardware and technical documents necessary to build new nuclear weapons. Joining the NPT on July 10, 1991, -- in part to satisfying certain conditions relating to the lifting of U.S. economic sanctions as an effort to secure western support for the South African reform process entailing the dismantling of apartheid -- and concluding an NPT safeguards agreement with the IAEA in September of that year, the South African Government set the stage for IAEA verification of its NNWS status under the NPT. It was only after it became an NPT party and entered into a safeguards agreement that de Klerk revealed publicly the existence of the covert South African program, but by August 19, 1994, after completing its inspections for the purpose of verifying the initial declaration, the IAEA was able to report that South Africa had in fact dismantled six completed and one partial nuclear explosive devices.⁹⁰ This first experience in verifying denuclearization commitments encouraged greater use of IAEA safeguards during the final stages of the Cold War.

b. Latin America

The regional military competition in the southern cone of South America was not unrelated to the existence of military governments in both Argentina and Brazil vying for power and prestige within the geopolitical space created by the deadlock between the U.S. and U.S.S.R. Argentina had been a country of proliferation concern, largely due to the departing military junta's revelation in 1983 that a totally un-safeguarded gaseous-diffusion uranium enrichment plant had been built since 1978 at the remote location of Pilcaniyeu in the Andes. The democratically elected Alfonsín Government moved quickly to place the nuclear program under civilian control and begin some cooperation with the IAEA.⁹¹ Brazil during this timeframe also experimented with the development of its own uranium enrichment technology, as well as engaging in efforts to acquire a complete nuclear fuel cycle, including a plutonium reprocessing capability, from West Germany. But Brazil also engaged in a secret military program, which included two competing efforts: first, the army's attempt to build a graphite reactor designed for the production of weapons-grade plutonium; and, second, the navy's more successful effort to develop laboratory scale uranium enrichment facilities at IPEN, an industrial scale plant at Aramar (albeit without any direct evidence that bomb grade HEU was ever actually produced), bomb design activities, and an underground nuclear test site at the remote location of Cachimbo in the Amazon jungle.⁹² Shortly after the fall of the Berlin Wall, however, President, Fernando Collor de Mello, engineered a new road for Brazil, on September 17, 1990 closing the Cachimbo test site and renouncing the long-held Brazilian idea that the nuclear explosive devices could serve peaceful purposes in a manner not inconsistent with the Treaty of Tlatelolco.⁹³

⁹⁰ See *Deadly Arsenals*, supra note 4, at 359-61.

⁹¹ See *id.* at 339.

⁹² See *id.* at 348-49.

⁹³ See *id.* at 349; see generally David Albright, *Brazil Comes in from the Cold*, *Arms Control Today*, December 1990, at 13.

In light of these domestic regime changes and the changing geopolitical context, it became possible for both countries to set aside their regional competition to pursue domestic democratization and privatization agendas. Accordingly, on July 18, 1991 Argentina and Brazil entered into a Bilateral Agreement renouncing even the possibility of peaceful nuclear explosive devices and undertaking to establish a system of mutual inspections of their nuclear activities, and establishing the Argentine-Brazilian Accounting and Control Commission (ABACC) for this purpose. On December 13, 1991, Argentina, Brazil, the ABACC, and IAEA entered into a Quadripartite Safeguards Agreement, which was ratified by all parties by 1994, so as to permit ABACC safeguards to satisfy the requirements of IAEA standards for Tlatelolco and NPT-type safeguards agreements.⁹⁴ Eventually, Argentina adhered to the Treaty of Tlatelolco in January 1994 and became an NPT party on February 10, 1995.⁹⁵ Brazil on May 30, 1994 adhered to the Treaty of Tlatelolco and the NPT in 1998.⁹⁶

These developments no doubt played a role in lending credibility to IAEA Safeguards, such that the parties to the Treaty of Tlatelolco agreed to amendments to that treaty that had the effect of transferring responsibility for implementing the Tlatelolco regime for challenge inspections from OPANAL to the IAEA.⁹⁷ Indeed, motivated no doubt by the fear of isolation on the nuclear non-proliferation front in the region, Cuba finally signed the Treaty of Tlatelolco on March 27, 1995⁹⁸ -- ratifying it some years later, at the same time that it declared its intention to adhere to the NPT.⁹⁹ Indeed, finally bringing an end to nuclear non-proliferation uncertainty in the Western hemisphere, at the Annual IAEA General Conference, Cuba entered into the new Model Safeguards agreement a year later.¹⁰⁰

In effect, at least for safeguards purposes, the Tlatelolco regional regime has been supplanted by the universal IAEA regime. It, like the South African denuclearization, constitutes a triumph for IAEA safeguards at the end of the Cold War as part of effecting regional settlements resolving regional struggles that emerged in the context of the Cold War framework. But the success of IAEA safeguards also became central to the final settlement of the Cold War, including the elimination of nuclear weapons in large portions of the Former Soviet Union.

⁹⁴ See *Deadly Arsenals*, supra note 4, at 339 and 351.

⁹⁵ See *id.* at 340.

⁹⁶ See *id.* at 349.

⁹⁷ See INF/CIR/411, "Amendments to the Treaty for the Prohibition of Nuclear Weapons in Latin America," July 12, 1993 (reporting request of the Government of Mexico, in its capacity as the depositary for the Treaty of Tlatelolco, that the IAEA circulate the amendments to articles 14, 15, 16, 19 and 20 of the Tlatelolco Treaty to IAEA member states). (Available at www.iaea.org/Publications/Documents/Infircs/Others/inf411.shtml).

⁹⁸ See INF/CIRC/472, May 5, 1995 ("Communication of 27 March 1995 Received From the Permanent Mission of the Republic of Cuba to the International Atomic Energy Agency").

⁹⁹ See IAEA Director General Welcomes Cuba's Intention to Join the Nuclear Non-Proliferation Treaty, IAEA Press Release 2002/14, September 17, 2002.

¹⁰⁰ See Cuba Signs NPT Safeguards Agreement, Additional Protocol with IAEA, September 18, 2003, available at www.iaea.org/About/Policy/GC/GC47/DailyWrap/cuba_signing.html.

c. The former soviet union

With the collapse of the Soviet Union and the end of the Cold War, the precise status of Belarus, Kazakhstan and Ukraine was left in doubt, since the former Soviet Union's status as successor to the NWS status of the former Soviet Union as an NPT party was generally recognized but all successor states were deemed equally entitled to IAEA membership succession.¹⁰¹ The problem was addressed politically, with respect to arms control issues, with the May 23, 1992 signing of the Lisbon Protocol to the START I (the Strategic Arms Limitation Agreement negotiated between the US and USSR that had not yet entered into force), in which Belarus, Kazakhstan, and Ukraine agreed under Article 5 to adhere to the NPT in "the shortest possible time."¹⁰² In a Trilateral Statement signed by Presidents Yeltsin of Russia, Clinton of the United States, and Kravchuk of Ukraine, Ukrainian delays in implementing the Lisbon Protocol were resolved in such a way to assure that Ukraine would transfer its remaining nuclear weapons and sensitive nuclear capabilities to Russia and would receive compensation, largely from the United States, for the value of its nuclear material and technology. The final exchange of instruments of ratification on December 5, 1994, between Ukraine and the NPT treaty depositaries – the U.S., U.K., and now Russia – was conditioned on Ukraine's receipt of formal, identical security assurances from the depositaries.¹⁰³ IAEA verification of the initial Ukrainian declaration built on the confidence in its performance that had been garnered through the South African, Argentine, and Brazilian experiences.

2. Iraq: enhanced IAEA authority through cooperation with the security council

At the same time as the IAEA experienced success in the Americas and Africa, however, the birth defects of the safeguards regime were finally being held up to public scrutiny after the first Gulf War. The most important fact about the IAEA failure in Iraq is that, until the crisis brought on by the invasion of Kuwait, Iraq's nearly successful covert attempt to acquire a nuclear weapons capability did not actually involve a safeguards failure (unless one took the view, described earlier, that an NPT violation could operate simultaneously as an NPT Safeguards Agreement violation). Rather, it involved a danger the safeguards system was never designed to address: a totally covert, parallel program not involving the use of any safeguarded nuclear material. It is noteworthy that Iraq chose this course -- entailing a strategic decision to rely on developing a covert uranium enrichment capability that would ultimately yield an HEU bomb it was hoped sometime in 1991 -- only after Israel in 1982 bombed a French-supplied, IAEA-safeguarded facility designed to produce large quantities of weapons-usable plutonium. Iraq's covert program, it was later discovered, involved

¹⁰¹ See Edwin D. Williamson & John E. Osborn, A U.S. Perspective on Treaty Succession and Related Issues in the Wake of the Breakup of the U.S.S.R. and Yugoslavia, 33 Va. J. Int'l L. 261, 266 n.12, 267 (1993) (former Legal Adviser to the U.S. Department of State favoring automatic and exclusive Russian succession to the NWS obligations of the Soviet Union under the NPT, but succession of all the successor states to the Soviet seat at the IAEA).

¹⁰² See Deadly Arsenals, *supra* note 4, at 318.

¹⁰³ See *id.* at 324.

almost every type of uranium enrichment technology, including the so-called EMIS, or electromagnetic isotope separation method that was used during the Manhattan Project to build the first HEU-based nuclear weapon. In fact, because such “primitive” technology was used, foreign intelligence agencies were not alert to imports of materials and equipment in support of the EMIS project and thus, like the IAEA in the aftermath of the 1991 Gulf War, were caught entirely by surprise at its existence. Indeed, the EMIS program might never have been revealed had it not been for key Iraqi defector at the end of the war.¹⁰⁴

That said, the IAEA took the full brunt of the blame when it was revealed that NPT safeguards could so easily be circumvented by a determined rogue state. Moreover, it was later revealed through the defection of a former senior Iraqi official in 1995 that Iraq, after its occupation of Kuwait in August 1990 and the international response against it, accelerated its nuclear weapons program so as to acquire weapons-usable material even from IAEA-safeguarded facilities, with the goal of constructing operational nuclear explosive devices by April 1991.¹⁰⁵ Indeed, we may never truly know for sure whether or not Iraq would have succeeded on this timetable, because the commencement of Operation Desert Storm on Jan. 16, 1991 leading to Iraq’s military defeat six weeks later resulted in an enhanced UN-IAEA inspections regime under UN authority resulting ultimately in full disclosure of Iraq’s nuclear program.

The international inspections regime created after the Gulf War marked a departure for the IAEA, not only with respect to the nature of those inspections but also with respect to the sources of IAEA legal authority. As to the nature of the inspections, for the first time IAEA inspectors asserted the right to inspect undeclared locations, searching not only for nuclear material but also equipment and technology for the processing, use or production of source and special nuclear material and nuclear weapons. In short, the legal restrictions of INFCIRC/153 NPT safeguards agreements -- in terms of nuclear material accounting, containment and surveillance at agreed strategic points, generally with notice, and through agreed inspectors -- simply did not constrain IAEA activities in post-war Iraq. This was not a legal problem, however, because it is critical to note that IAEA post-Gulf War inspections were not based on the NPT safeguards agreement in force between the IAEA and Iraq. Thus the long dormant legal questions about the existence and scope of special inspection rights -- either in the form of no-notice inspections other than on the basis of random sampling or on-demand inspections of undeclared locations where the IAEA might have reason to believe that nuclear material might be found -- simply never arose under the post-War inspections regime. Rather, in a dramatic departure from its prior practices as an international organization, the IAEA received additional authorities as a delegee of the UN Security Council.

¹⁰⁴ See generally *id.* at 273-74 and 274 n. 24 (citing R. Jeffrey Smith, *Iraqi Nuclear Program Due Further Nuclear Inspections*, *Washington Post*, June 14, 1991).

¹⁰⁵ See *id.* at 274-75 (discussing defection of Lt. Gen. Hussein Kamel to Jordan and subsequent inspector mission to Baghdad to receive reports from Iraqi authorities on these steps).

In the aftermath of the Gulf War, the UN Security Council acting under its authority under Chapter VII created a new safeguards regime for Iraq. Security Council Resolution 687 was a “decision” binding under Articles 25 (applicable to states), article 48 (binding on states acting through international organizations) and 103 (notwithstanding any other treaty obligations) of the UN Charter.¹⁰⁶ Paragraph 8 expressed concern about reports of possible NPT violations by Iraq. Paragraph 12 then, without reference to Iraq’s NPT membership, “decides” that “Iraq shall unconditionally agree not to acquire or develop nuclear weapons or any nuclear-weapons-usable material or any subsystems or components or any research, development, support or manufacturing facilities...” This paragraph also called for Iraq to provide a declaration of items falling within these categories to the UN Secretary General and IAEA and accept their destruction under IAEA supervision and control, with the assistance of the UN Special Commission (UNSCOM), which was also created under the resolution for the purpose of implementing Iraq’s non-nuclear weapons of mass destruction disarmament obligations. Paragraph 12 of Resolution 687 made clear, more importantly, that in the discharge of its obligations, Iraq was to accept IAEA/UNSCOM inspections at all the sites identified under paragraph 13, which in turn “request[ed]” the IAEA to undertake inspections not only at the locations identified in Iraq’s declaration under paragraph 12 but also “based on the designation of any additional locations by the Special Commission”.¹⁰⁷

Whether the Security Council had the authority to make these determinations is not a matter of present concern; for the IAEA, the question was whether it had authority to accept the additional powers made available to it by the Security Council. Assuming the Security Council had the authority to make the determinations necessary to act under its chapter VII authorities, article 48(2) of the UN Charter specifically provides that “decisions” of the Security Council under chapter VII “shall be carried out by the Members directly and through their action in the appropriate international agencies of which they are members.”¹⁰⁸ It was seem difficult to argue that the IAEA is not an “appropriate international agency” for purposes of article 48 with respect to the threat to international peace and security posed by Iraq’s attempt to breach its NPT and safeguards obligations. Nevertheless, the Council’s precise language was formulated as a “request” to the IAEA -- perhaps in recognition of the inability of the Council directly to bind an international organization except through its power to direct its members under article 48 of the Charter; perhaps also as an exercise in institutional comity.¹⁰⁹

The only theoretical question that might have arisen was whether, before implementing their duty to give effect to the determinations of the Security Council through action at the IAEA, states party to the IAEA Statute would need

¹⁰⁶ See S.C. Res. 687 (April 3, 1991)(adopted at 2981st meeting, 12 to 1, Cuba, with 2 abstentions, Ecuador and Yemen).

¹⁰⁷ See S.C. Res. 687, paras. 8, 12-13.

¹⁰⁸ See UN Charter, art. 48 (available at www.un.org).

¹⁰⁹ See generally Henry G. Schermers & Niels M. Blokker, *International Institutional Law: Unity Within Diversity* 1084-1100 (Martinus Nijhoff 4th ed. Rev. 2003) (exhaustive discussion of the forms of coordination between international organizations, both required by law and as a matter of prudence or comity).

to amend the Statute to enable the IAEA Secretariat to comply without acting *ultra vires*. But the same line of reasoning that makes the IAEA an “appropriate international agency” for purposes of article 48 of the Charter explains why the IAEA’s acceptance of authority delegated by the Security Council was not inconsistent with the Statute. It will be recalled that the Article XII.C of the Statute specifically contemplates reports to the Security Council in the even of non-compliance by a member state. It should also be noted that the Board of Governors may make reports to the Security Council even in the case in which there is no finding of noncompliance but merely on the basis of a determination under paragraph 19 of the safeguards agreement that the IAEA is “not able to verify that there has been no diversion” of nuclear material subject to safeguards.¹¹⁰ As the law of treaties makes clear, “any subsequent practice in the application of the treaty which established the agreement of the parties regarding its interpretation” is relevant to the treaty’s interpretation.¹¹¹ The universal acceptance of paragraphs 18 and 19 in NPT safeguards agreements as a vehicle for reports to the Security Council thus evidences recognition by member states of the IAEA that the failure of safeguards would raise a question for Security Council action, which in turn IAEA members could foresee might entail a duty of cooperation under article 48 of the Charter through the IAEA itself.

In a larger sense, however, the very purpose of the IAEA and its relation to the Security Council was at issue determining whether the Secretariat could immediately cooperate in the implementation of Resolution 687. Certainly the accepted principle stated in Article 31 of the Vienna Convention on the Law of Treaties that treaties are to be interpreted in accordance with their “object and purpose” suggests that the IAEA was free to receive from the Security Council authority not specifically granted by the Statute to undertake special inspections. Certainly, also, the well-established doctrine that international organizations have “implied powers,” in addition to those specifically stated in their constitutive instruments, to implement their objects and purposes also supported an expansive interpretation of the IAEA’s right immediately to comply with the request of the Security Council.¹¹² Indeed, it might even be argued that the Statute itself might have been sufficient to authorize the IAEA, under the special circumstances attending the end of the Gulf War, to undertake such special inspections under a notion of implied powers was based on an interpretation of Iraq’s NPT safeguards agreement, a notion the IAEA would later test in North Korea.

Thus, for IAEA immediately to cooperate with the UN signaled an important departure, one in which not only the Security Council’s own authority under Chapter VII would be markedly expanded but also one in which the degree of cooperation between the UN and the IAEA would now make the Agency less of a technical organization for managing the balance between nuclear trade and

¹¹⁰ See INFCIRC/153, para. 19.

¹¹¹ See Article 31 (3) (b) of the VCLT, *supra* note xx, and the parallel provision of the 1986 Vienna Convention on the Law of Treaties Between States and International Organizations or Between International Organizations, 25 I.L.M. 543 (concluded March 21, 1986).

¹¹² See *Reparation for Injuries Suffered in the Service of the United Nations*, 1949 I.C.J. 174 (Advisory Opinion).

nuclear security and more of an active and critical instrument for the identification and suppression of threats to international security. On July 18, 1991, as initial inspections under SC Resolution 687 began to bear fruit, the IAEA Board of Governors determined that Iraq had violated its safeguards agreement. A few weeks later, in the face of Iraqi non-compliance with resolution 687, the Security Council reinforced the IAEA when, acting under Chapter VII, it not only found that Iraq's noncompliance was a violation of resolution 687 but, in no uncertain words, also stated that it condemned Iraq's "noncompliance" with "its obligations under its safeguards agreement with the International Atomic Energy Agency, as determined by the Board of Governors..., which also constitutes a violation of its commitments as a party to [the NPT]."¹¹³ Finally, in Resolution 715 of October 11, 1991, the Security Council specifically approved the plan submitted by the IAEA pursuant to the request of the Security Council in Resolution 687 for the dismantling and verifying the dismantlement of Iraq's nuclear weapons infrastructure and asked the Director General to implement that plan and submit regular reports on its implementation.¹¹⁴

These findings, decisions, and requests by the Security Council, acting as though it were an adjudicatory body competent to determine NPT violations and take countermeasures, established a precedent of central importance. In effect, the Security Council found in one case that when a state had violated its NPT obligations, it could be deemed to give rise to a threat to international peace and security, as was implied by Article X of the NPT itself and the IAEA NPT Safeguards regime. It was not by accident that the President of the Security Council at an unprecedented meeting of the Security Council Heads of State and Government on January 31, 1992 affirmed the view of Council members that "[t]he proliferation of all weapons of mass destruction constitutes a threat to international peace and security" and that they "commit themselves to working to prevent the spread of technology related to the research for or production of such weapons and to take appropriate action to that end."¹¹⁵ These precedents foreshadowed the adoption under chapter VII over a decade later in the aftermath of the Second Gulf War and the threat of terrorism of Security Council 1540, which decided that "all states refrain from providing any form of support to non-State actors that attempt to develop, acquire, manufacture, possess, transfer, transport or use nuclear, chemical or biological weapons and their means of delivery...."¹¹⁶ In time, the reports submitted by the IAEA Director General in implementation of these resolutions established undeniably the legal basis for the IAEA Board of Governors and Security Council determinations that, as a matter of fact, Iraq's pattern of noncompliance with its NPT and safeguards obligations

¹¹³ See UN SC Resolution 707, para. 2 (August 13, 1991); see also Resolution adopted 18 July, 1991 by the IAEA Board of Governors, concerning the noncompliance of Iraq with the IAEA Safeguards Agreement (published in Nuclear Law Bulletin No. 48 (December 1991), at 71-72).

¹¹⁴ See S.C. Res. 715, paras. 1, 3 and 8 (adopted unanimously at 3012th meeting).

¹¹⁵ See Note by the President of the Security Council, U.N. SCOR, U.N. Doc. S/23500, at 4 (January 31, 1992)(available at [http:// projects.sipri.se/cbw/docs/cbw-unsc23500.html](http://projects.sipri.se/cbw/docs/cbw-unsc23500.html)).

¹¹⁶ See S.C. Res. 1540, para. 1 (April 28, 2004), reprinted in 43 I.L.M. 1237 (2004); see also infra text accompanying notes 172-75 (discussing Security Council findings on the relation between terrorism and weapons of mass destruction as threats to international peace and security).

was simply undeniable.¹¹⁷ Ironically however, notwithstanding this strong signal of UN support, with every step the IAEA took after the Gulf War to unravel the mystery of how Iraq had come so close to acquiring a nuclear weapons capability, the gap between the kind of inspections under UN authority making that disclosure possible and the more limited character of routine IAEA inspections became more obvious. Thus, the legitimacy of the non-UN authorized NPT safeguards system was placed in serious jeopardy.

It is perhaps in this context that the IAEA's effort to uncover possible safeguards violations by North Korea should be understood. The effort, however, not only signaled an attempt to develop fully the legal possibilities available in INFCIRC/153 agreements but also, together with the IAEA's role in Iraq, provided the theoretical framework for a major proposed revision of the concept of IAEA safeguards and legal reform to implement that new concept.

3. North Korea: Legal expansion or over-extension -- the case for new authority?

After the challenge to its institutional credibility posed by the revelations following the first Gulf War, the IAEA faced yet another crisis during the initial phases of the implementation of its safeguards agreement with the Democratic People's Republic of Korea (North Korea or the DPRK). The DPRK relationship with the IAEA dated back to 1977, when INFCIRC/66-type safeguards were applied to Soviet-supplied research reactor located at Yongbyon.¹¹⁸ This weapons-usable plutonium produced at this research reactor, as well as all other nuclear materials in the DPRK, became subject to full-scope safeguards when the DPRK became a party to the NPT in 1985. But the North Korea failed to enter into a safeguards agreement within the 18 month timeframe required under the NPT and insisted, in 1990, that a condition precedent to its doing so would be the withdrawal of all U.S. nuclear weapons from the Korean peninsula, a condition with which President Bush finally complied after the end of the Cold War in 1992 as part of a global redeployment of U.S. nuclear forces. In the meantime, however, press reports, presumably based on intelligence information, revealed that in 1989 the DPRK had shut down the plutonium production reactor for a sufficient period, roughly 100 days, to withdraw the spent nuclear fuel and completely refuel the reactor. When the DPRK entered into the NPT-required safeguards agreement in 1992 and made its initial declaration to the IAEA in May 1992, shortly after the revelations that IAEA full-scope safeguards had failed in Iraq to discover an undeclared nuclear weapons program, the DPRK indicated that it had on only one occasion separated extremely small quantities of plutonium, quantities insufficient to build a nuclear explosive device. But IAEA chemical analysis revealed that the samples made available by the DPRK were drawn from a much larger quantity of separated

¹¹⁷ See *Deadly Arsenals*, supra note 4, at 273-75 and nn. 21, 23, 25-29, and 31 (citing multiple IAEA Reports to the Secretary-General pursuant to resolution 715 and the safeguards and NPT violations documented therein).

¹¹⁸ See North Korea Special Collection: IAEA - North Korea: Nuclear Safeguards and Inspections 1977-1989, Monterey Institute of International Studies (available at <http://cns.miis.edu/research/korea/nuc/iaea7789.htm>).

material derived from several plutonium reprocessing campaigns. In other words, the evidence revealed that North Korea has submitted a materially false initial declaration.¹¹⁹

Faced with this challenge, in a scene reminiscent of the UN Security Council session at the height of the Cold War at which photographic intelligence establishing the presence of Soviet nuclear-armed missiles in Cuba was shown to the world, at a Board of Governors meeting in late February 1993, U.S. intelligence photographs revealing Soviet-style nuclear waste storage facilities, as well as the IAEA's own chemical analysis, were presented to the DPRK, thus challenging the DPRK's initial declaration.¹²⁰ On the basis of this evidence, on Feb. 24, 1993 the Board of Governors adopted a resolution demanding within one month IAEA access to the two sites suspected of being part of the DPRK's nuclear weapons program. The IAEA stated that access to the sites was "essential and urgent."¹²¹ This was the first attempt in the history of the IAEA to demand a "special inspection" for the purpose of ferreting out a possible case of nuclear proliferation.¹²² IAEA Director General Hans Blix also sent a copy to the UN Security Council of his telex to the DPRK demanding special inspections of the two suspect locations.¹²³ Rejecting this demand, on March 12 North Korea announced its withdrawal from the NPT within 90 days as provided for pursuant to Article X of the Treaty, asserting in its notice to the UN Security Council that its "supreme national interests" had been "jeopardized" by U.S. military exercises and the IAEA demand for special inspection of the two suspect sites, but also claiming improper interference by U.S. officials in influencing the IAEA to demand special inspections.¹²⁴

After intense and largely bilateral negotiations between the U.S. and DPRK, a day before the notice of withdrawal would have taken effect, North Korea purported to "suspend" its withdrawal from the NPT. But it claimed, because of the circumstances leading to its withdrawal, that it was no longer fully bound by its NPT safeguards agreement, barring the IAEA from even routine inspections needed to assure the "continuity of safeguards," and finally compelling the IAEA

¹¹⁹ See *Deadly Arsenals*, supra note 4, at 244; see also North Korea Special Collection: IAEA-North Korea: Nuclear Safeguards and Inspections 1990, Monterey Institute of International Studies (available at <http://cns.miis.edu/research/korea/nuc/iaea90.htm>).

¹²⁰ See North Korea Special Collection: IAEA-North Korea: Nuclear Safeguards and Inspections 1993, Monterey Institute of International Studies (citing David E. Sanger, *New York Times*, 13 March 1993, pp. 1, 3) (available at <http://cns.miis.edu/research/korea/nuc/iaea93.htm>).

¹²¹ See *id.* (citing Don Oberdorfer, *The Two Koreas: A Contemporary History* 278 (Reading, MA: Addison-Wesley, 1997) (available at <http://cns.miis.edu/research/korea/nuc/iaea93.htm>); Steve Paga, *Reuters*, 26 February 1993; Jeffrey Smith, *Washington Post*, 25 February 1993, p.A24; Teruaki U, *Reuters*, 26 February 1993).

¹²² See *Deadly Arsenals*, supra note 4, at 252 n.21 (citing Leon Sigal, *Disarming Strangers: Nuclear Diplomacy with North Korea* (Princeton University Press 1998)(citing and distinguishing special inspection cases in relation to Romania and Sweden)).

¹²³ See North Korea Special Collection: IAEA-North Korea: Nuclear Safeguards and Inspections 1993, Monterey Institute of International Studies (citing Don Oberdorfer, *The Two Koreas: A Contemporary History* 279 (Reading, MA: Addison-Wesley, 1997) (available at <http://cns.miis.edu/research/korea/nuc/iaea93.htm>).

¹²⁴ See *id.* (citing Don Oberdorfer, *The Two Koreas: A Contemporary History* 280 (Reading, MA: Addison-Wesley, 1997); Gamini Seneviratne, *Nucleonics Week*, 18 March 1993, p.10 ; and "Letter from Kim Yong-nam, DPRK Minister of Foreign Affairs," 12 March 1993; *Reuters*, 11 March 1993) (available at <http://cns.miis.edu/research/korea/nuc/iaea93.htm>).

Director General in December 1993 to state that IAEA safeguards could no longer provide “meaningful assurances” of non-diversion of nuclear materials.¹²⁵ The crisis escalated as the DPRK announced in May 1994 that it would de-fuel its plutonium production reactor, thereby gaining immediate access to fuel that would provide material for several nuclear bombs and possibly breaking the chain of custody that would enable IAEA chemical analysis from eventually determining the precise quantities and composition of the nuclear material that had been produced at, and removed from, that facility during the feared 1989 reactor refueling. Indeed, Director General Blix announced on May 31, 1994 that due to continued North Korean non-compliance with IAEA inspections, North Korea is “no longer [officially] in compliance with IAEA safeguards” and made a final appeal to North Korea, asking it to stop withdrawing fuel rods from the 5MW gas-graphite reactor and to allow international inspections to proceed. North Korea's ambassador to the IAEA, Yun Ho-jin, replied that the refueling would continue, stating that a number of fuel rods had already been withdrawn under IAEA camera surveillance and placed in a storage site “pending an inspection agreement.”¹²⁶ On June 10 the Board of Governors adopted a resolution suspending all technical aid to North Korea, and on June 15 IAEA inspectors left North Korea.¹²⁷

It was in the context of this threat -- and in the face of U.S. demands at the UN Security Council for sanctions, as well as the possibility of military action even if the threat of a PRC veto of threatened sanctions materialized -- that former U.S. President Jimmy Carter intervened in a June 16-17 mission to Pyongyang, North Korea, where he helped to arrange a compromise settlement. Even after the July 9 death of North Korean leader Kim Il Sung, this compromise matured into an Agreed Statement on August 12, which in turn yielded on October 21, 1994 a precise set of politically-, but not legally-, binding commitments, in the so-called “Agreed Framework.”¹²⁸ The document provided that the DPRK would “freeze” its nuclear program and take a series of steps leading ultimately to full compliance with IAEA safeguards, while the U.S. and others would form the so-called Korean Energy Development Organization (or KEDO) as a multi-lateral framework organization to facilitate the construction of a proliferation-resistant light-water nuclear reactors (LWRs) in North Korea and supply heavy fuel oil to replace electrical production that would be lost from shutting down the DPRK’s plutonium production reactor.¹²⁹ Under Article IV.2

¹²⁵ See *Deadly Arsenals*, supra note 4, at 245 (citing David Sanger, “U.N. Agency Finds No Assurance North Korea Bans Nuclear Arms, December 3, 1993).

¹²⁶ See North Korea Special Collection: IAEA-North Korea: Nuclear Safeguards and Inspections 1994, Monterey Institute of International Studies (citing Washington Post, 1 June 1994; and Guardian (London), 1 June 1994) (available at <http://cns.miis.edu/research/korea/nuc/iaea94.htm>).

¹²⁷ See *Id.*

¹²⁸ See generally Marian Nash, *Cotemporary Practice of the United States Relating to International Law: Peaceful Uses of Nuclear Energy*, 89 Am. J. Int’l L. 96, 119 and 366, 373 (reporting testimony of Secretary of State Warren Christopher Before the Senate Committee on Foreign Relations on January 24, 1995); see also Testimony of Ambassador-at-Large Robert Gallucci Before the East Asian and Pacific Sub-Committee of the Senate Committee on Foreign Relations on U.S.-North Korea Nuclear Agreement, Federal News Service (Dec. 1, 1994)(affirming that the Agreed Framework was merely a political commitment to which the United States was not bound under international law); see generally Antonio F. Perez, *Who Killed Sovereignty?: Or Changing Norms Concerning Sovereignty in International Law*, Wisconsin Journal of International Law 463, 479 (1996).

¹²⁹ See *Deadly Arsenals*, supra note 4, at 245-46.

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of the Agreed Framework, routine and ad hoc inspections would resume only when the commercial supply contract for the LWRs was concluded; and, under Article IV. 3, the DPRK affirmed that it would enter into “full compliance” with IAEA safeguards only after KEDO had supplied a “significant portion of the LWR project... is completed, but before delivery of key reactor components...”¹³⁰

The Agreed Framework raised major institutional challenges for the IAEA, both as to its efficacy and the legality of IAEA cooperation in implementing it. The efficacy of the Agreed Framework was always in doubt in many quarters. On one hand, the Agreed Framework in effect deferred special inspections of the undeclared facilities long enough to call into question whether the truth of North Korea’s nuclear program would ever be revealed. Yet, on the other, it was thought that conditioning the provision of key nuclear components essential to the production of any additional plutonium would assure that North Korea could not acquire any additional weapons-usable nuclear material until the IAEA had at least an opportunity to determine the truth about the DPRK’s prior nuclear activities.¹³¹ The central premise of this trade-off may have been compromised when it was revealed recently that the DPRK also had engaged, like Iraq, in an undeclared uranium enrichment program, establishing an alternative pathway to the production of weapons-usable nuclear material in the form of HEU rather than plutonium.

The U.S. announcement on October 16, 2002 that North Korea had acknowledged to the U.S. the existence of such a program precipitated a diplomatic crisis yet again. The IAEA offered on October 17 and 18 to send a team to the DPRK or to receive a DPRK team in Vienna, to discuss the issues highlighted by the U.S. announcement, but received no response from Pyongyang. The US, Japan, South Korea and KEDO concluded that this action was a violation of the Agreed Framework, the NPT, the DPRK-IAEA Safeguards Agreement and the North-South Joint Declaration on the Denuclearization of the Korean Peninsula; and the KEDO Board decided to suspend heavy oil deliveries as of the December shipment.¹³² Then, on November 29, 2002, the IAEA Board of Governors adopted a resolution recognizing that enriching uranium for nuclear weapons "or any other covert nuclear activities, would constitute a violation of the DPRK’s international commitments, including the DPRK’s safeguards agreement with the Agency pursuant to the NPT" and demanding that the DPRK reply and cooperate.¹³³ The DPRK reply of December 13 to the Director General indicated that, in response to the suspension of oil deliveries, North Korea would

¹³⁰ See INFCIRC/457, Nov. 2, 1994 (circulating to IAEA member states “Agreed Framework of October 21, 1994 Between the United States of America and the Democratic People’s Republic of Korea”)(available at <http://www.iaea.org/NewsCenter/Focus/iaeaDprk/index.shtml>); reprinted in 34 I.L.M. 603 (1995).

¹³¹ See Deadly Arsenals, supra note 4, at 247.

¹³² Statement of KEDO’s Executive Board, Nov. 14, 2002 the Executive Board includes (the European Union, Japan, Republic of Korea, and the United States)(available at http://kedo.org/news_detail.asp?NewsID=23).

¹³³ See Board of Governors Resolution of November 29, 2002, para. 9, GOV/2002/60, published in IAEA Media Advisory 2002/33, November 29, 2002 (available at http://www.iaea.org/NewsCenter/MediaAdvisory/2002/med-advise_033.shtml).

lift the freeze on its nuclear activities; on December 22, the DPRK started to cut seals and disable surveillance cameras and on December 27, 2002, ordered IAEA inspectors to leave North Korea; and on January 10, 2003, it announced that its withdrawal from the NPT would be effective as of January 11, 2003, since all but one day of the notice period had expired in 1993 when it had “suspended” its earlier notice of withdrawal. The official IAEA fact sheet on the situation states: “The IAEA is not a party to the NPT and hence it is not in the position to determine the status of any State Party’s membership of the Non-Proliferation Treaty. NPT States Parties’ comprehensive safeguards agreements with the IAEA provide that such agreements would remain in force as long as the State is party to the Non-Proliferation Treaty.”¹³⁴ However, on Feb. 12, 2003, the IAEA Board of Governors did adopt a resolution expressing “deep concern” over North Korea’s actions, declaring North Korea in further non-compliance with its nuclear safeguards obligations, “confirming” that the DPRK remained a party to the safeguards agreement, expressing concern about the IAEA’s inability to verify the non-diversion of nuclear material, finding the DPRK to be in non-compliance with its obligations under the safeguards agreement, and referring the matter to the UN Security Council.¹³⁵ It should be noted, however, that the IAEA Board of Governors failed specifically to endorse the statement of the KEDO executive board, alleging North Korea’s violation of the full range of its nuclear-nonproliferation commitments, including not only the politically-binding Agreed Framework, but also the IAEA Safeguards agreement and the NPT. These actions by the Board of Governors appear to have the full support of the member states of the IAEA.¹³⁶

But even if the Agreed Framework had been effective in deterring North Korea from an uranium nuclear fuel cycle, in addition to a freezing its plutonium nuclear fuel cycle activities, the IAEA had to face the question whether its participation in a scheme that might be seen to compromise its safeguards system, thereby encouraging other NNWS considering breaking out of the NPT, such as perhaps Iran, to follow the DPRK’s lead and to seek to negotiate the terms of their compliance with IAEA safeguards.¹³⁷ In other words, the IAEA’s action in participating in the implementation of the Agreed Framework may have posed as much of a challenge to its institutional credibility as was posed by the IAEA’s inaction in failing to discover Iraq’s un-safeguarded nuclear program prior to the first Gulf War and the realization that only information from Iraqi defectors made possible a full inventory of Iraq’s nuclear capabilities. Moreover, while UN Security Council authority under Chapter VII of the Charter compensated for the deficit in the IAEA’s institutional credibility during the Iraq crisis, in the North Korean crisis, because of the threatened PRC veto, the IAEA participated in a

¹³⁴ See Fact Sheet on DPRK Nuclear Safeguards (available at: http://www.iaea.org/NewsCenter/Focus/iaeaDprk/fact_sheet_may2003.shtml).

¹³⁵ See Board of Governors Resolution of November 29, 2002, paras. c, e.2, e.3 and e.5, GOV/2003/14, published in IAEA Media Advisory 2003/48, February 12, 2003 (available at http://www.iaea.org/NewsCenter/MediaAdvisory/2003/med-advise_048.shtml).

¹³⁶ See Implementation of the IAEA Safeguards Agreement Between the Agency and the Democratic People’s Republic of Korea, General Conference Resolution adopted September 24, 2004, GC/48/Res/15 (available at <http://www.iaea.org/NewsCenter/Focus/iaeaDprk/index.shtml>).

¹³⁷ See Deadly Arsenals, *supra* note 4, at 248.

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scheme that did not benefit from the presumption of legality that would be afforded to an UN Security Council Chapter VII resolution. Instead, the IAEA facilitated implementation of a non-binding political commitment in which it could have been deemed to acquiesce in the DPRK's non-compliance of its obligations to the IAEA until determinations regarding the DPRK's compliance with non-IAEA nuclear supply criteria were made; and, to add insult to injury, determinations as to the DPRK's compliance with these weakened supply criteria were to be made by only some IAEA member states and another international organization, KEDO. This was, without exaggeration, an extraordinary development in international organization law, and it signified the emergence of the IAEA as an institutional player in international security capable of independent action in cooperation with other states and organizations, and not solely through the channel of cooperation with the United Nations, in ways not obviously contemplated by the IAEA Statute and the subsequent practice of the organization.

Part II will now consider the IAEA's response of legal reform to the institutional challenge it faced at the end of the Cold War. It then describes further challenges, relating to rise of sub-state terrorist organizations capable of using weapons of mass destruction, which call into question the Atoms for Peace strategy upon which the IAEA was founded. It continues with an account of the emerging alternative security paradigm based on prevention rather than safeguards. Finally, it concludes with a report on the most recent developments, which include a deadlock at the most recent NPT Review Conference that yields little insight as to a way forward for the IAEA as an international institution.

II. The IAEA in an age of terror

The Cold War IAEA was a technical agency -- one whose existence was always in doubt given the uncertain future of the NPT; formally related to the Security Council but without any extensive pattern of cooperation; nominally independent of states but in fact quite subservient to their sensitivities, and inattentive to transnational civil society, both as a source of legitimacy and as a target of its nonproliferation mission. The post-Cold War period leading to the age of terrorism challenged all these premises.

1. NPT extension and IAEA safeguards reform

The weakness of IAEA safeguards revealed at the end of the Cold War, coupled with the apparent increased demand for safeguards in a world open to destabilizing efforts by regional powers and sub-national actors to upset the status quo, compelled serious attention to the question of safeguards reform for a new era.¹³⁸ These efforts were particularly important in view of the impending

¹³⁸ But see David Sloss, *It's Not Broken, So Don't Fix It: The International Atomic Energy Agency System and the Nuclear Nonproliferation treaty*, 35 Va. J. Int'l L. 841 (1995)(arguing that the special inspection provisions of IAEA safeguards simply needed to be used to their full extent in order to provide the assurance required by the international community and, therefore, that no new legal authorities were required).

decision of NPT members whether, pursuant to article X.2, to extend indefinitely the treaty or merely extend it for a limited period of set of periods.¹³⁹ As it turned out, in 1995 the NPT parties by consensus decided to extend the treaty indefinitely,¹⁴⁰ making the NPT and IAEA safeguards a nominally permanent feature of the international security system, notwithstanding the legitimacy crisis faced by the IAEA in Iraq. Notably, through Security Council Resolution 984, the five states recognized *de jure* as NWS by the NPT now extended the positive security assurance which had formed the basis of the original bargain bringing the NPT into force a generation earlier.¹⁴¹ But, in addition to many other factors, the scheme proposed for safeguards reform may also have had something to do with the decision to extend the treaty indefinitely.

The so-called 93+2 reform program (referring to the year of the proposal and originally-anticipated timeframe for its implementation) contemplated several measures -- some for immediate implementation, others calling for legal revision.¹⁴² Measures for immediate implementation involved requests for voluntary production of additional information, most importantly as to nuclear and dual-use imports and exports. In addition, the IAEA sought voluntary compliance with environmental sampling, a methodology for locating nuclear material developed in the Iraq experience, which departs from the IAEA's traditional reliance on material accountancy, containment and surveillance as its basis for verifying non-diversion of nuclear material subject to safeguards.¹⁴³ But the key revision of the safeguards regime came in the form of the Model Additional Protocol, which the Board of Governors approved only in 1997.¹⁴⁴ As its name suggest, the Additional Protocol is not an entirely new safeguards system; it builds rather on the provisions of the NPT- and Tlatelolco-model safeguards treaties, which remain applicable unless superseded by the provisions of the Additional Protocol.¹⁴⁵ That said, the scheme incorporates the lessons learned through the Iraqi and North Korean crises.

The key change effected by the Additional Protocol is broadened authority to conduct inspections at additional locations, drafted in such a way so as to confirm the IAEA's authority to visit undeclared locations in search of undeclared nuclear material. Articles 4 and 5, which are worthy of quoting in full, together provide for enhanced IAEA rights to determine a set of new locations:

¹³⁹ Compare William Epstein & Paul C. Szasz, Extension of the Nuclear Non-Proliferation treaty: A Means of Strengthening the Treaty, 33 Va. J. Int'l L. 735 (1993)(arguing that the NPT could be extended for definite periods, subject to periodic renewal); with Mary Elizabeth Hoinkes, Correspondence, Epstein and Szasz Do the NPT No Favor, 34 Va. J. Int'l L. 247 (1993)(senior legal officer of U.S. Arms Control and Disarmament Agency arguing that the treaty language permitted only a single choice between indefinite extension and unconditional extension for a definite period).

¹⁴⁰ See 1995 Review and Extension Conference of the Parties to the Treaty on the Non-Proliferation on Nuclear Weapons, Final Document, Part II, Documents issued at the Conference, NPTCONF.1995/32 (Part II) (New York 1995) (available at:

<http://daccessdds.un.org/doc/UNDOC/GEN/N95/167/92/IMG/N9516792.pdf?OpenElement>)

¹⁴¹ See S.C. Res. 984, adopted at 3514th meeting on April 11, 1995 (available at un.org).

¹⁴² See Dekker, *supra* note 6, at 299.

¹⁴³ See *id.* at 300.

¹⁴⁴ See INFCIRC/540 (approved by Board of Governors May 15, 1997), available at 36 I.L.M. 1232 (1997) (with introductory note by John Rames, Deputy General Counsel of the IAEA)[Additional Protocol].

¹⁴⁵ See *id.*, Additional Protocol, art. 1.

Complementary access

Article 4

The following shall apply in connection with the implementation of complementary access under Article 5 of this Protocol:

a. The Agency shall not mechanistically or systematically seek to verify the information referred to in Article 2; however, the Agency shall have access to:

- (i) Any location referred to in Article 5.a.(i) or (ii) on a selective basis in order to assure the absence of undeclared nuclear material and activities;
- (ii) Any location referred to in Article 5.b. or c. to resolve a question relating to the correctness and completeness of the information provided pursuant to Article 2 or to resolve an inconsistency relating to that information;
- (iii) Any location referred to in Article 5.a.(iii) to the extent necessary for the Agency to confirm, for safeguards purposes, 's declaration of the decommissioned status of a facility or location outside facilities where nuclear material was customarily used.

b. (i) Except as provided in paragraph (ii) below, the Agency shall give advance notice of access of at least 24 hours; (ii) For access to any place on a site that is sought in conjunction with design information verification visits or ad hoc or routine inspections on that site, the period of advance notice shall, if the Agency so requests, be at least two hours but, in exceptional circumstances, it may be less than two hours.

c. Advance notice shall be in writing and shall specify the reasons for access and the activities to be carried out during such access.

d. In the case of a question or inconsistency, the Agency shall provide with an opportunity to clarify and facilitate the resolution of the question or inconsistency. Such an opportunity will be provided before a request for access, unless the Agency considers that delay in access would prejudice the purpose for which the access is sought. In any event, the Agency shall not draw any conclusions about the question or inconsistency until has been provided with such an opportunity.

e. Unless otherwise agreed to by, access shall only take place during regular working hours.

f. shall have the right to have Agency inspectors accompanied during their access by representatives of, provided that the inspectors shall not thereby be delayed or otherwise impeded in the exercise of their functions.

Article 5

..... shall provide the Agency with access to:

- a.(i) Any place on a site; (ii) Any location identified by under Article 2.a.(v)-(viii); (iii) Any decommissioned facility or decommissioned location outside facilities where nuclear material was customarily used.

b. Any location identified by under Article 2.a.(i), Article 2.a.(iv), Article 2.a.(ix)(b) or Article 2.b, other than those referred to in paragraph a.(i) above, provided that if is unable to provide such access, shall make every reasonable effort to satisfy Agency requirements, without delay, through other means.

c. Any location specified by the Agency, other than locations referred to in paragraphs a. and b. above, to carry out location-specific environmental

sampling, provided that if is unable to provide such access, shall make every reasonable effort to satisfy Agency requirements, without delay, at adjacent locations or through other means.¹⁴⁶

The reference to “location-specific environmental sampling” made in Article 5(c) should be read in conjunction with Article 18, which contemplates so-called “wide-area environmental sampling,” and Article 9, which provides that the state: “shall provide the Agency with access to locations specified by the Agency to carry out wide-area environmental sampling, provided that if..... is unable to provide such access it shall make every reasonable effort to satisfy Agency requirements at alternative locations. The Agency shall not seek such access until the use of wide-area environmental sampling and the procedural arrangements therefore have been approved by the Board and following consultations between the Agency and..... for the employment of such methods and the provision of access to the locations necessary to implement it, to the extent be used after consultations between the Agency and”.¹⁴⁷ In effect, then, by broadening the range of locations to which inspectors may have access well beyond the strategic points previously specified in subsidiary arrangements under safeguards agreements and providing for environmental sampling in all other cases, the Additional Protocol substantially rectifies the deficiencies of the Cold War model for safeguards revealed in Iraq and North Korea.¹⁴⁸

But the Additional Protocol goes farther and radically changes the terms of the relationship between the state and the IAEA itself. For example, whereas INFCIRC/153 had provided for advance state consent to the designation of inspectors, the state will now be required to object to the designation of inspectors within three months, thereby imposing the burden on the state to accept the political cost and heightened scrutiny that an action would entail.¹⁴⁹ Furthermore, the additional reporting provisions with respect to nuclear imports and exports will over time create a web of reporting requirements that will generate a body of information that will allow the IAEA to track nuclear and nuclear-related commerce.¹⁵⁰ The Additional Protocol reporting system will, therefore, reinforce the nuclear import and export control obligations established under the now-permanent NPT and the multilateral export control systems the NPT spawned.¹⁵¹ The right of IAEA inspectors to access to communications with IAEA headquarters and regional offices is also confirmed, thereby effectively enabling the inspectors to take advantage of all the information the IAEA has a right to receive from third parties.¹⁵² At the same time, the level of intrusiveness contemplated by the new IAEA rights also required an enhanced confidentiality regime, which is itself striking evidence of the changed nature of the relationship

¹⁴⁶ See *id.*, Additional Protocol, arts. 4 and 5.

¹⁴⁷ See *id.*, Additional Protocol, arts. 9 and 18.

¹⁴⁸ See generally Dekker, *supra* note 6, at 301-05.

¹⁴⁹ See Additional Protocol, art. 11.

¹⁵⁰ See *id.*, art. 2(a)(ix) and Annex II (specifying items subject to reporting requirements).

¹⁵¹ See *supra* text accompanying notes 34-36 (discussing the Zangger Committee and Nuclear Suppliers Group).

¹⁵² See Additional Protocol, art. 14.

between the IAEA and the member state under the new safeguards concept embodied in the Additional Protocol.¹⁵³

To date, over 70 states have now accepted the new model safeguards agreement.¹⁵⁴ This means, however, that a large number of states have not adhered to the Additional Protocol, giving rise to the need for supplementary international legislation to address the gaps that would continue to remain in the international nuclear non-proliferation regime if it were to remain unaided by peremptory international law-making by the UN Security Council. The recent Security Council action to supplement the work of the IAEA should be understood then in the context of the continuing failure of potential nuclear weapons states to adhere to the new safeguards regime. Given the nature of the post-9/11 threat, the Security Council has stepped into the breach to direct compliance by states with the measures necessary to implement an international regime that will give timely warning of covert transfers of nuclear-related equipment, material and technology. The threats now come from two sources -- rogue states and rogue sub-national actors -- but, in the eyes of many, the real danger is the potential for synergy between the two.

2. Recent developments -- testing the fundamental assumptions of atoms for peace: security council statement on India-pak nuclear tests, Iran, and Iraq (the second gulf War and UNMOVIC)

The Cold War prism for analysis of the IAEA as an international organization continues to matter. Indeed, the development of the Additional Protocol evidences primarily a strengthening of the safeguards system within the traditional context of a threat to nonproliferation posed by a state seeking to acquire a nuclear weapons capability. The North Korean situation evidences the willingness of the IAEA to work not only through the Security Council but also with coalitions of states outside the Security Council and the new international organizations they create, such as KEDO, to address the nonproliferation threats posed by states.

But the North Korean situation continues to fit the classical Cold War paradigm of proliferation by states. Similarly, the IAEA and Security Council reaction to the Indian and Pakistani nuclear tests in 1998 reflected concern that the essential bargain of "Atoms for Peace" upon which the IAEA was founded had been betrayed.¹⁵⁵ This was in part because both India and Pakistan had used the nuclear equipment, material and technology made available to them for peaceful purposes to develop the expertise necessary to produce weapons-usable

¹⁵³ See *id.*, art. 15.

¹⁵⁴ See www.iaea.org.

¹⁵⁵ See S.C. Res. 1172, para. 3 (June 6, 1998)(demanding, albeit not under Chapter VII, that India and Pakistan refrain from further nuclear tests); see also IAEA General Conference Resolution on Nuclear Testing, adopted on 25 September 1998 during the 10th plenary meeting, GC(42)/RES/19 (noting moratorium on future testing announced by India and Pakistan but nonetheless endorsing Security Council Resolution 1172 and calling on India and Pakistan to engage in no further nuclear tests)(available at <http://iaea.org>).

material, arguably in violation of non-NPT safeguards agreements.¹⁵⁶ Indeed, the aftermath of the Indian and DPRK situations have raised comparable issues, albeit in one case under bilaterally-created safeguards obligations and in the other case under the NPT. The question arose whether the requirement for safeguards under the U.S.-India Agreement for Peaceful Nuclear Cooperation remained in effect after termination of that agreement on account of India's so-called peaceful nuclear explosive test in 1974, just as it now arises whether the IAEA retains the right to special inspections to detect NPT violations with respect to material retained by the DPRK after the termination of the agreements under which that material was obtained.¹⁵⁷

Even the current crisis in Iran largely takes the form of the traditional Cold War paradigm, in which a state is testing the outer limits of Atoms for Peace, claiming its entitlement as a matter of principle to develop an independent nuclear fuel cycle that necessarily entails the capability to produce enriched uranium, a capability that in turn would enable a state to possess the capability to produce weapons-usable HEU. Whether Iran is complying with its safeguards obligations would be evidence of its intent, such that other IAEA and NPT parties might have "timely warning" of a potential diversion of nuclear material. In effect, the IAEA has requested that Iran, as a voluntary confidence-building measure and explicitly not as a matter of legal obligation, suspend any enrichment or reprocessing activities. The motive for this request is Iran's ambiguous posture: for the Board of Governors noted that Iran has cooperated in implementing the Additional Protocol and that the Director General reported that all nuclear material in Iran is accounted; but the Board also reiterated its previous finding that until October 2003 Iran had engaged in un-safeguarded activities in violation of its safeguards obligations and that Iran has, notwithstanding the IAEA's request, continued to engage in some enrichment-related activities.¹⁵⁸ The strategic ambiguity of Iran's behavior thus places it in the category of states which may intend to misuse the opportunity created by peaceful nuclear cooperation as a vehicle for acquiring the capability to produce nuclear weapons.

Thus, the real policy question posed by the Iranian situation, like the case of the DPRK, is whether certain states should be barred, unlike other NNWS such as Japan and Germany, from access to the so-called sensitive nuclear technologies of plutonium reprocessing, uranium enrichment, and heavy water production, which enable states to obtain the benefits of peaceful use of the atom in power production, nuclear medicine, food irradiation and the like, but also facilitate research, development, production, and testing of nuclear explosive devices.

¹⁵⁶ See *Deadly Arsenals*, supra note 4, at 194-96 (India) and 210-12 (Pakistan); see generally Schwartz, supra note 32, at 28-29 (noting U.S. view that Indian test of so-called "peaceful nuclear explosive device" was inconsistent with U.S.-India Agreement for Peaceful Nuclear Cooperation).

¹⁵⁷ Compare Schwartz, supra note 32, at 34 n.7 (noting the Indian Government's view that safeguards on previously transferred nuclear materials were not required to remain in effect in perpetuity notwithstanding the termination of the U.S.-India Agreement); with Perez, *Survival of Rights*, supra note 85 (arguing that under IAEA Safeguards agreement read in light of the purposes of the NPT, safeguards rights vest when a request for a special inspection is made, notwithstanding the termination of the safeguards agreement).

¹⁵⁸ See generally Resolution of the IAEA Board of Governors concerning Implementation of NPT Safeguards Agreement with the Islamic Republic of Iran, adopted on November 29, 2004, GOV/2004/87 (available at www.iaea.org).

The question of the right to produce special nuclear material through enrichment or reprocessing is a matter of much general debate. A proposed global “cut-off” for the production of fissile materials would provide a non-discriminatory approach to this problem, capturing so-called rogue states in addition to states that have, for the foreseeable future at least, produced sufficient quantities of nuclear material (largely for weapons purposes) that their need for additional fissionable material, both for themselves and their trading partners, has largely disappeared. Speaking to the IAEA membership then U.S. Secretary of State Madelaine Albright stated: “The United States itself has not produced fissile material for nuclear weapons since it unilaterally halted production in 1992. In that year, the United States also stopped testing nuclear weapons, even before negotiations began for the Comprehensive Nuclear Test Ban Treaty. And it will continue to work for negotiations on a treaty that would ban for all time the production of fissile material for nuclear explosives.”¹⁵⁹ Indeed, with the end of the Cold War, the United States and Russia undertook for commercial and non-proliferation reasons to blend down weapons-grade HEU in Soviet military stockpiles into LEU for use in U.S. civil nuclear reactors – truly reviving the ancient vision of turning “swords into plowshares.”¹⁶⁰

More recently, however, the United States -working with some major nuclear suppliers, the so-called Group of Eight, which constitute the leading members of the NSG- has sought to differentiate between reliable states and rogue states and specifically has sought to ban transfers of reprocessing and enrichment equipment or technology to states that do not already have operative, full-scale enrichment or reprocessing facilities. The IAEA, by contrast, returning to the original design of the Agency as the repository of nuclear material, has suggested that it serve as the repository for all special nuclear material, which it would make available in support of peaceful nuclear activities, thereby obviating national capacities for the production of enriched uranium or plutonium for power or research reactors or for any other peaceful purpose.¹⁶¹ In some respects, the articulation of this preferred IAEA policy places the major nuclear suppliers at odds with the IAEA. That is not to say, however, that the U.S. and NSG have not been supportive of the IAEA in other respects, for they are considering the possibility of transforming the NSG’s conditioning since 1992 of major nuclear supply on the recipient’s adherence to full-scope safeguards to a condition that the recipient’s

¹⁵⁹ See Communication of 14 March 2000 Received From the Permanent Mission of the United States of America to the International Atomic Energy Agency, INFCIRC/584, March 27, 2000 (available at iaea.org); but cf. Statement of Jackie W. Sanders, Special Representative of the President for the Nonproliferation of Nuclear Weapons, Statement to the 2005 Review Conference of the Treaty on the Nonproliferation of Nuclear Weapons, New York, New York (May 20, 2005) (noting U.S. still support Fissile Materials Cut-off Treaty but now without verification provisions) (available at <http://www.state.gov/t/np/rls/rm/46603.htm>).

¹⁶⁰ See generally Antonio F. Perez, To Judge Between the Nations: Post Cold War Transformations in National Security and Separation of Powers—Beating Nuclear Swords into Plowshares in an Imperfectly Competitive World, 20 *Hastings Int’l & Comp. L. Rev.* 331 (Winter 1997).

¹⁶¹ See John B. Wolfsthal, The Nuclear Third Rail: Can Fuel Cycle Capabilities Be Limited?, 34 *Arms Control Today* 11, 14-15 (December 2004)[The Nuclear Third Rail]Y; compare Ted Galen Carpenter & Charles V. Peña, Rethinking Non-Proliferation, *The National Interest* 81 (Summer 2005)(conservative think tank intellectuals offering a rationale for the new administration polices); with Tariq Raul & Fiona Simpson, The Nuclear Fuel Cycle: Is It Time for a Multilateral Approach?, 34 *Arms Control Today* 17 (December 2004)(IAEA staff advancing their own personal views).

adherence to the IAEA's new Additional Protocol.¹⁶² Yet, these diverging major supplier and IAEA policies evidence that tensions that can arise as the IAEA develops its own institutional autonomy and independence on so fundamental issue as whether or not to discriminate in the treatment of states in respect of the right to peaceful nuclear cooperation in respect of the most sensitive of nuclear technologies.

However, as a matter of international policy and governance, the question remains whether the basic, nondiscriminatory assumptions underlying Atoms for Peace are still tenable. The challenge to that assumption comes on two grounds. First, recent threats to nonproliferation in North Korea, Pakistan, Iraq and Iran may continue to take the form of a traditional threat to the non-proliferation regime from states but indicate the threat may be exacerbated. Second, and more importantly, for others the threat is about the connection or possible connection between such states and new, sub-national forces in international society. Indeed, for some, the Iraq war was precisely about the new risk that certain states would be prepared to enable a fanatical terrorist group to use nuclear weapons against civilian populations. The new security paradigm required for such a threat has resulted in a radical re-thinking of U.S. national security policy.¹⁶³ Thus, for many, although to varying degrees, the recent Iraq war leading to the overthrow of Saddam Hussein may well signify a paradigm shift that will yield a richer understanding of the potential future for IAEA safeguards as well.

The Security Council's examination of the threat, therefore, merits close review. Admittedly, it is possible to view the Security Council and IAEA's operations in the recent crisis within traditional categories. It would be possible, for example, to describe the standard adopted by the Security Council in Resolution 1441 as a natural corollary to the traditional IAEA safeguards standard. The resolution required Iraq to demonstrate its compliance with previous Security Council resolutions requiring Iraq to terminate its weapons-related activities.¹⁶⁴ Like paragraphs 18 and 19 of the IAEA NPT model safeguards agreement, which requires the IAEA to inform the Security Council when it is unable to verify non-diversion of nuclear material, Resolution 1441 required the UN Monitoring, Inspection and Verification Commission (UNMOVIC) -- which had previously been established as a successor to UNSCOM in the wake of UNSCOM's own failure to verify Iraqi noncompliance with Security Council Resolution 687's WMD disarmament obligations -- to receive a new declaration by Iraq and, working with the IAEA, to verify the accuracy of that declaration.¹⁶⁵ One could therefore view the standard and burden

¹⁶² See Wade Boesse, U.S. Nuclear Trade Restrictions on Hold, 34 Arms Control Today 19 (December 2004).

¹⁶³ See The National Security Strategy of the United States (Sept. 17, 2002)(available at <http://www.whitehouse.gov/nsc/nss.pdf>); compare Philip Bobbitt, *The Shield of Achilles: War, Peace and the Course of History* (2002) (former Counselor to the Legal Advisor, Department of State, the George H.W. Bush Administration and Director of Strategic Planning, National Security Council, the Clinton Administration, arguing that the rise of sub-national threats with WMD capabilities, together with other factors, are signaling the transformation of the nation-state and the international legal regime upon which it is founded so as to require new legal paradigms for responding to these new threats to organized civil society).

¹⁶⁴ See SC Res. 1441 (November 8, 2002), reprinted in 42 I.L.M. 250 (2003)[Resolution 1441].

¹⁶⁵ See Resolution 1441, para. 3.

of proof for compliance with the Security Council mandate as the logical extension of IAEA Safeguards policy. However, this judgment was arguably at a much later stage in the procedural context, because the IAEA standard previously applied at the initial stage in which it would be determined whether the matter would be taken to the UN Security Council. Resolution 1441, by contrast, already had found non-compliance by Iraq, threatened further action against Iraq in the face of continued noncompliance, and sought to give Iraq a “final opportunity” to come into compliance, as to be determined in part by the reports of UN inspectors.¹⁶⁶ Pursuant to that resolution, the chief UN inspector and former IAEA Director General Hans Blix reported to the Security Council and Secretary-General, not merely on the basis of the assistance of the IAEA but also in his capacity as the chief officer of UNMOVIC. On February 28, 2003, UNMOVIC Executive Chairman Blix asserted that the Iraqi declaration contained “little new significant information ... relating to proscribed weapons systems.”¹⁶⁷ On January 27, 2003, he added that the declaration did not contain “any new evidence that would eliminate” the “many open disarmament issues.”¹⁶⁸ On March 7, 2003, he concluded: “It was a disappointment that Iraq’s declaration of 7 December did not bring new documentary evidence.”¹⁶⁹ Blix also reported Iraq’s failure to comply and cooperate.¹⁷⁰ His subsequent arguments against the war in a private capacity did not signal a retreat from these essential conclusions.¹⁷¹

Thus, while no state thus far has ever construed a mere report from the IAEA to the Security Council under INFCIRC/153 as sufficient legal authority to use force under UN authorization, Resolution 1441 coupled with Blix’s report was thought by the United States and its coalition partners to revive legal authority to use force against Iraq previously granted by the Security Council.¹⁷² Moreover, for some, drawing on the full implications of the paradigm shift in international security strategy inspired by 9/11, the IAEA and Security Council’s role was even more limited, for they argue that former Director General Blix’s failure to verify Iraq’s non-possession of WMD was in itself a sufficient factual, though not a legal, predicate for Coalition use of force against the Saddam Hussein regime,

¹⁶⁶ See Resolution 1441, paras. 1, 2, 4, 11 and 12.

¹⁶⁷ See Annex of the Twelfth Quarterly Report of the Executive Chairman of the United Nations Monitoring, Verification and Inspection Commission in Accordance with Paragraph 12 of Security Council Resolution 1284, para. 7 (available at <http://www.un.org/depts/unmovic/documents/2003-232.pdf>).

¹⁶⁸ See Update on Inspection to the UN Security Council (Jan. 27, 2003), at 3.

¹⁶⁹ See Oral Introduction of the Twelfth Quarterly Report of UNMOVIC, at 2.

¹⁷⁰ See UNMOVIC Report to the Security Council: UN Doc. S/PV.4692, at 3 (2003) (“Iraq appears not to have come to a genuine acceptance—not even today—of the disarmament that was demanded of it and that it needs to carry out to win the confidence of the world and to live in peace”); *id.* at 6 (noting that Iraq’s declaration included a document from which it had excised a table showing the import of bacterial growth media, and concluding that “absence of this table would appear to be deliberate, as the pages of the resubmitted document were renumbered”); and UN Doc. S/PV.4714, at 5 (2003) (Iraqi initiatives in weeks prior to Operation Iraqi Freedom “cannot be said to constitute immediate cooperation, nor do they necessarily cover all areas of relevance”).

¹⁷¹ See generally Hans Blix, *Disarming Iraq* 217-18 (Pantheon Books 2004)(confirming the basic point that UNMOVIC could not rule out the possibility of diversion, although arguing that the Council, acting as something like a court, should have had the burden of persuasion in finding Iraq guilty”).

¹⁷² See William H. Taft IV & Todd F. Buchwald, *Preemption, Iraq, and International Law*, 97 *Am. J. Int’l L.* 557 (2003); cf. Lord Goldsmith, Attorney General Clarifies Legal Basis for Use of Force Against Iraq (Mar. 18, 2003)(available at <http://www.fco.gov.uk>)(offering a somewhat different justification based on humanitarian intervention but agreeing with the view that no further Security Council action was required after Resolution 1441).

since neither explicit nor implicit UN-authorization was required under their broad reading of the right of individual and collective self-defense recognized by Article 51 of the UN Charter.¹⁷³

Yet, under either of these views of the precise legal authority for the Coalition use of force to overthrow Hussein, the new focus of proponents of more proactive use of force is the presence of non-state actors and the support it is alleged rogue regimes have given or may give to those actors. Prevention through preemptive use of force, then, calls for a wholly new role for the IAEA and its safeguards or an alternative approach to non-proliferation focusing on prevention rather than detection.

3. Security council resolution 1540 and the proliferation security initiative: from safeguards to interdiction – Libya and the A. Q. Khan network

Thus, the argument that motivated many strategic analysts during the second Gulf War was that safeguards and timely warning are no longer sufficient to assure international security; rather, interdiction will be required. If the IAEA's basic concept of operations were aligned to achieve this mission, however, it would require a fundamental re-structuring of the organization and legal reform far beyond what was contemplated in the 93-2 program -- although the additional (although as yet not universally-accepted) nuclear trade reporting requirements in the Additional Protocol, and the contemplated more extensive use of environmental sampling, would be illustrative steps in that direction. The extent, however, to which the international community is currently willing to accept a new approach to non-proliferation policy is unclear.

In the aftermath of 9/11, the Security Council recognized that a qualitatively new international situation had arisen -- one requiring the international community to treat terrorism as a threat to international peace and security.¹⁷⁴ It was in this context, and drawing on the precedent established in the wake of the first Gulf War, that the Security Council -- "recognizing" that the emerging relation between terrorism by non-state actors and weapons of mass destruction created an even greater threat requiring the Council to act under Chapter VII -- imposed obligations on all states not to export certain items that would facilitate the acquisition of WMD by such actors.¹⁷⁵ More important perhaps, the Security Council also established a committee of the Security Council (the 1540 Committee), which is to monitor and report on implementation of the resolution.¹⁷⁶ It should be noted, however, that the Council declared that "none of the obligations set forth in [resolution 1540] should be interpreted so as to

¹⁷³ See John Yoo, *Agora: Future Implications of the Iraq Conflict: International Law and the War in Iraq*, 97 *Am. J. Int'l L.* 563 (2003).

¹⁷⁴ See SC Res. 1373 (Sept. 28, 2001), reprinted in 40 *I.L.M.* 1278 (2001) (deciding that all states should take wide-ranging measures to combat international terrorism and to prevent and suppress the financing of terrorism).

¹⁷⁵ See SC Res. 1540, paras. 1 and 2 (April 28, 2004), reprinted in 43 *I.L.M.* 1237 (2004) (requiring states not to provide "support" to such non-state entities and to establish "appropriate effective laws" within their national frameworks to achieve that result).

¹⁷⁶ See *id.* at para. 4.

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conflict with or alter the rights and obligations of State Parties to the [NPT]... or alter the responsibilities of the [IAEA].”¹⁷⁷ Thus, while it may be that, in establishing the 1540 committee, the Security Council has begun a process of institutional cooperation and, perhaps to some degree, competition with the IAEA’s own effort to police better nuclear supply through the reporting provisions of the Additional Protocol, it continues to pay obeisance to the legal rights of the member states of the IAEA who have chosen to create the NPT and IAEA as their instruments to achieve nonproliferation goals and the peaceful uses of the atom. That said, Resolution 1540 can easily be read as an international statement of legal policy that, given the changing nature of the threat, a new balance must be struck between facilitating international nuclear commerce and the overarching goals of preventing non-state terrorists from acquiring nuclear explosive devices or radiological weapons.

Accordingly, Resolution 1540 also needs to be read in the context of a new multilateral approach to nonproliferation advanced by the United States and an increasing number of its allies, the so-called Proliferation Security Initiative or PSI, which focuses on preventing particular states from engaging in transfers of nuclear and dual-use equipment, material and technology. The PSI was established in 2003 as a means for developing cooperation among states in assuring that their flags would no longer be used to engage in unlawful nuclear or other WMD commerce. Indeed, according to the U.S. Department of State:

UNSCR 1540 and the PSI... are mutually reinforcing and are legally and political compatible. UN Security Council Resolution 1540 recognizes the threat to international peace and security posed by the proliferation of weapons of mass destruction (WMD) and outlines concrete actions states can take to counter this threat. Operative paragraph 10 of UNSCR 1540 calls upon all states – in accordance with their national legal authorities and legislation and consistent with international law – to take cooperative action to stop, impede, intercept and otherwise prevent the illicit trafficking in nuclear, chemical or biological weapons, their means of delivery and related materials. The Proliferation Security Initiative (PSI) and its Statement of Interdiction Principles (SOP) identifies steps that can produce the kind of cooperation called for in UNSCR 1540. Accordingly, PSI is consistent with the UNSC Resolution. Furthermore, UNSCR 1540’s decision under Chapter VII of the UN Charter that all states shall develop effective laws as well as border, national export, transshipment, end-user and physical protection controls to prevent proliferation is consistent with and, in fact, bolsters the SOP’s calls for nations to “review and work to strengthen their relevant national legal authorities where necessary... (and) international law and frameworks in appropriate ways to support these commitments.”¹⁷⁸

The PSI’s principal success so far has been the interdiction of nuclear supply to Libya from the private A.Q. Khan network operating not only in Pakistan but in and through other states. Libya’s decision to disclose to the world its attempt

¹⁷⁷ See *id.* at para. 5.

¹⁷⁸ See Fact Sheet: Security Initiative Frequently Asked Questions (FAQ), U.S. Department of State, Bureau of Nonproliferation (May 26, 2005)(available at <http://www.state.gov/t/np/rls/fs/46839.htm>).

to acquire a nuclear weapons capability -- resulting in an IAEA report to the Security Council under Article XII.C of the Statute, and its acceptance of IAEA inspections, including adherence to the Additional Protocol, to verify the termination of its NPT-inconsistent activities -- was the first fruit of this interdiction effort.¹⁷⁹ More important, however, was the unraveling of the even more dangerous A.Q. Khan network, with its potential links to Iran and North Korea.¹⁸⁰

In sum, the PSI entails measures to deal with proliferation threats prior to the stage at which the safeguards system takes effect; it can thus be seen as a corollary to the argument advanced by the Bush administration and others for a more robust understanding of the right of individual and collective self-defense in the face of the new threat posed by the potentially catastrophic combination of weapons of mass destruction, rogue states, and fanatical, sub-national terrorist groups. The question for the future is whether the new safeguards system, relying now more on environmental sampling technology, can be linked to interdiction policies toward which both the Security Council and coalitions of states appear to be moving. The agreed goals of both the IAEA and the major supplier states are, of course, to prevent rogue states and the sub-national organizations with whom they might cooperate from possessing nuclear explosive devices. Arguably, the requirement for greater reporting of imports and exports under the Additional Protocol arguably create the possibility that, if all states were to adhere, the IAEA would be in a position to facilitate interdiction policies by providing PSI states with intelligence that would identify potentially suspect transactions. Indeed, a fully effective system of export and import reporting under the Additional Protocol could well deter illegitimate nuclear commerce and decrease the demand for direct interdiction activities under the PSI.

In some senses, then, IAEA again is in a posture of partial cooperation and partial competition with the policies of other international actors. The efficacy and autonomy of the IAEA as an institution obviously will turn on the degree of support it receives from states in implementing the vision offered by the Additional Protocol. At the same time, the degree of support that will be afforded may well also turn on the degree to which other institutions -- whether formal, such as the Security Council, or informal, such as the PSI -- succeed where the IAEA has failed. In short, there is a complex and unpredictable dynamic between institutional cooperation and competition for the IAEA, one in which its

¹⁷⁹ See Resolution of the IAEA Board of Governors concerning the Implementation of the NPT Safeguards Agreement with the Socialist People's Libyan Arab Jamahiriya, adopted March 10, 2004, GOV/2004/18, March 13, 2004 (framing this turn of events largely in the context of efforts to secure a nuclear-weapons free zone in the Middle East)(available at iaea.org).

¹⁸⁰ See Ambassador Jackie W. Sanders, Special Representative of the President for the Nonproliferation of Nuclear Weapons, Closing Statement to the 2005 NPT Review Conference, New York, New York, May 27, 2005 ("Libya pursued a clandestine nuclear program in violation of the NPT until making the strategic decision to give up its weapons ambitions in 2003. We welcome this decision. Lurking behind these violators was the A.Q. Khan network; selling, buying and transferring nuclear technology around the world for profit. While this illicit network has been shut down, the North Korean and Iranian programs continue and other sources of supply remain open for business in this deadly trade. We also confront today's preeminent security challenge of weapons of mass destruction falling into the hands of terrorists who will not be deterred from using them against us.") (available at <http://www.state.gov/t/np/rls/rm/47025.htm>).

institutional self-interest will sometimes be at variance with the underlying mission it was created to serve. In some respect, the IAEA's leadership will need to make choices that take these variables into account, and the recent election of an IAEA Director General in the face of opposition by the United States suggests that the IAEA Secretariat's autonomy in making such choices is, if anything, on the rise.¹⁸¹

The most important variable in determining the competitive strength of the IAEA safeguards system, however, is largely outside the IAEA's control – that is, the legal context framing the legal rights and obligations of parties to IAEA comprehensive safeguards agreements. The parties to the NPT have the final say on that question, and opportunities for reform to strengthen the institutional capabilities of the IAEA appear to be quite limited indeed.

4. Proposals for modification – NPT review conference and the continuing right to IAEA safeguards

The recent NPT Review Conference offered an opportunity to close the legal loopholes that may yet remain in the application of IAEA safeguards to states in noncompliance with their obligations or states that rely on the NPT withdrawal clause to seek to avoid discovery of their safeguards violations. For example, it was suggested by several states that an authoritative consensus declaration by the NPT parties could give rise to an agreed interpretation that IAEA safeguards would, to some degree, continue notwithstanding the invocation of the NPT withdrawal clause in circumstances such as those obtaining in the North Korean situation.¹⁸² It is not clear whether these proposals could have garnered the support of the parties because, for a range of reasons, the NPT parties failed even to develop sufficient consensus to issue a final statement. The U.S. response to this diplomatic appears to be that work on nonproliferation can continue through other fora, such as the NSG, in order to continue to give teeth to the U.S.'s preferred approach, the PSI. According to U.S. officials, it was the PSI that yielded the interdiction of the Libya-bound freighter, China BBC, and brought

¹⁸¹ See Dafna Linzer, U.N.'s Nuclear Monitor Extends His Pivotal Role, *Washington Post*, June 14, 2005, A16 (reporting Mohamed ElBaradei's unanimous re-election for a third term as Director General, as the U.S. finally withdrew its opposition).

¹⁸² See George Bunn & John B. Rhinelander, NPT Withdrawal: Time for the Security Council to Step In, *Arms Control Today*, Vol. 35, No. 4 (May 2005) (reporting proposals of Federal Republic of Germany concerning conditions limiting the exercise of the right of withdrawal and a group of nuclear experts convened by Princeton and Stanford Universities concerning the continuing exercise of safeguard rights under bilateral agreements of supply even after NPT withdrawal) (available at: http://www.armscontrol.org/act/2005_05/Bunn_Rhinelander.asp); see also Joseph Cirincione, No Easy Out, *Carnegie Endowment*, May 26, 2005 (reporting approvingly U.S. Statement of May 23, 2005 to NPT Review Conference advancing as a package two proposals: first, one recognizing a plenary right to withdraw; second, one insisting that the withdrawing state should not be able to benefit from peaceful nuclear cooperation based on its status as NPT party) (available at: <http://www.carnegieendowment.org/publications/index.cfm?fa=print&id=16979>); cf. George Perkovitch, et al, *Universal Compliance: A Strategy for Nuclear Security* (Carnegie Endowment, March 2005) (at pp. 175-76, suggesting that Security Council resolutions establishing these norms should be adopted) (available at <http://www.CarnegieEndowment.org/strategy>).

about the greatest recent success in nuclear non-proliferation, Libya's decision to renounce its nuclear weapons program.¹⁸³

Summary and conclusions – The future of the IAEA

If past is prologue, then we should anticipate further evolution of the role of the IAEA. The IAEA's past reveals that it was created as the creature of Atoms for Peace, which supposed that the threatened proliferation of nuclear weapons would come from states, and that the risk of proliferation measured against the potential benefits of the peaceful uses of the atom compelled the international community to tilt in the direction of peaceful nuclear trade. Accordingly, timely warning through international verification of peaceful use was deemed sufficient. NPT-required full-scope safeguards became the cornerstone of a Cold War framework for nuclear cooperation.

At the end of the Cold War, however, the attempt to invoke special inspections, in a way that was inspired by the challenge inspection provisions of the Treaty of Tlateloco, evidenced the attempt of the IAEA to reassert its institutional credibility in the face the apparent failure of routine inspections to provide timely warning of an undeclared nuclear program in Iraq. At the same time, the breakdown of international stability at the end of the Cold War may have raised the value to many states of nuclear weapons possession, and the emergence of the threat of nuclear terrorism by non-state actors increased the potential danger of nuclear proliferation (particularly given the potential availability of nuclear material from the Former Soviet Union and the potential willingness of non-state terrorist actors to consider using nuclear or radiological weapons without fear of reprisal). Therefore, with the changing balance between the costs of proliferation and the potential benefits of peaceful nuclear cooperation, it was not surprising that the IAEA in its 93+2 reform program, including the Additional Protocol, sought to enhance the effectiveness of safeguards. Indeed, the IAEA's new emphasis on environmental sampling and verification of exports and imports could be seen to support parallel efforts at the NSG or the Security Council's 1540 Committee.

Yet, however much the IAEA might have increased the effectiveness of its own system, it seems clear that today the IAEA is in a form of institutional competition with formal legal institutions, such as the 1540 Committee, and non-institutional forms of international cooperation, such as the PSI. The notion that there is, in fact, some body of law that can be called a special regime of nuclear law is, perhaps, a weapon deployed by the IAEA in this emerging institutional competition.¹⁸⁴ Yet, there may be limits on how much the IAEA can evolve to face this competition. Certainly, when the recent NPT Review Conference failed to reinforce the legal consequences of withdrawal from the NPT in order to

¹⁸³ See David E. Sanger, Month of Talks Fails to Bolster Nuclear Treaty, New York Times, May 28, 2005 (reporting views of USG sources).

¹⁸⁴ See Mohammed ElBaradei, Foreword in Carlton Stoiber et al, Handbook on Nuclear Law (IAEA Vienna, 2003). "The handbook is an important step forward towards strengthening, in a consistent and coherent manner, the international legal framework governing the safe and peaceful uses of nuclear energy".

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conceal a safeguards violation, such as a diversion of nuclear material to a non-state actor, the NPT parties wasted an opportunity to reinforce the value of IAEA safeguards as an international public good in the war against potential terrorist and rogue state use of nuclear or radiological weapons. If, because of such failures in international governance, the demand for interdiction and prevention, rather than safeguards and timely warning of diversion, continues to increase, one may well expect that the IAEA in the future will enter into a period of decline, with new international institutions and other forms of informal cooperation emerging to address the current and, probably increasing threat of catastrophic failures in international security.

What seems clear is that we are in a period in which the tradeoff between nuclear security and nuclear trade needs to be re-thought, and the debate must be conducted without preconceptions about the interests of all the parties in the debate. As the autonomy of the IAEA increases, it becomes a player on the international stage, one having its own institutional interest and agenda. In evaluating the IAEA's views as this debate continues, therefore, it will no longer do to think of the IAEA as merely a faithful agent of states. It is now something much, much more.