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Assessing the Nuclear Non-Proliferation Regime

Given the emergence of 'second tier' nuclear weapon states, many Western analysts now question the effectiveness of the nuclear non-proliferation regime. Joseph Siracusa isn't one of them. He believes that its accomplishments to date have been both extensive and enduring.

By Joseph Siracusa for ISN

In assessing the accomplishments of the Nuclear Non-Proliferation Treaty (NPT), it is worth restating, as Daniel Joyner has observed, that the NPT when taken as whole "is not fundamentally about regulating nuclear weapons proliferation, as it is often summarily described to be." The history of the NPT negotiations, according to Joyner, "is underpinned by three inherently linked, and presumptively equal, principled pillars—peaceful use of nuclear energy, non-proliferation of nuclear weapons, and disarmament of nuclear weapon stockpiles." Thus, reviewing the origins of the NPT makes it clear that if diplomats had not recognized the equal status of all three pillars, it would never had come into being.

These three pillars are at the heart of the NPT regime, and have supported a variety of complementary efforts around the world. As Jozef Goldblat stresses, the NPT gradually became "a centerpiece of a vast non-proliferation regime encompassing various restrictive rules as well as specialized control institutions, both national and international." Moreover, the major powers with the support of the smaller states frequently have expanded the reach of the NPT to put in place the current 'greater' "nonproliferation regime," elements of which include several multilateral, bilateral, and voluntary accords. The regime consists of at least nine significant elements that provide the foundation of the NPT and support nonproliferation goals generally. For the regime to survive and remain relevant, progress towards its goals must continue to be made, even if its accomplishments have already been far more substantial, extensive and enduring than was anticipated at its outset.

The elements of the NPT

The 1950s contributed three of the nine elements of the NPT: the Atoms for Peace program, the International Atomic Energy Agency (IAEA), and nuclear-weapon-free zones (NWFZs). (1) The Atoms for Peace program stimulated optimistic expectations in the 1950s that it would provide cheap electricity to homes and villages throughout the world; indeed, Winston Churchill declared that atomic energy would be "a perennial fountain of world prosperity." Although the construction of nuclear facilities expanded greatly globally and considerably improved medical and agriculture activities,

providing the expected cheap and plentiful electric energy was beyond its reach. (2) The initial objective of the IAEA, according to Article II of its 1957 Statute, was the encouragement of the peaceful uses of atomic energy, while also seeking to ensure that nuclear materials would not be used "in any military purpose." Although the Statute recognized the dual nature of atomic energy, according to David Fischer's history of the Agency, its "special importance" was assisting developing countries to make use of nuclear energy; only later would the security aspects come to dominate. In this sense, the initial thrust of the Atoms for Peace program and IAEA were quite similar and successful. The IAEA formalized early nuclear assistance programs for underdeveloped regions and focused on various techniques to challenge disease, poverty, hunger, and a shortage of drinking water in the developing world. Perhaps equally notable has been the socioeconomic benefits resulting from the IAEA's use of radiation-induced mutations in crop plants that resulted in an increase of tens of billions of dollars in the rice crops of Thailand, Japan, China, and Australia, as well as improving other crops such as cotton, bread wheat, chickpea, barley, and durum wheat. Clearly, the IAEA in carrying on the Atoms for Peace ideals contributed to an improved standard of living in Asia and other parts of the world. Its contemporary emphasis on "security and safety" came with the terrorist threat of the 21st century. And (3) Nuclear-weapon-free zones (NWFZs), first created in 1959, are designed to control, monitor or prohibit nuclear weaponry in specific geographical areas. In 1999 the UN General Assembly's *Report of the Disarmament Commission* praised their dynamic nature: "nuclear-weapons-free zones have made and continue to make … an important contribution to the strengthening of the international nuclear non-proliferation regime." Currently recognized NWFZs include more than 100 countries in Africa, Central Asia, the Caribbean and Latin America, South Pacific, and Southeastern Asia, including Antarctica, covering more than fifty percent of the globe. Given the NWFZ's successes, long-time American arms control negotiator Thomas Graham, Jr. suggests that: "The nuclear-weapon-free zone treaty process is the back-door route toward the elimination of nuclear weapons."

Three further elements of the nonproliferation regime – the Nuclear Test Ban Treaties, the goal of complete disarmament, and the Fissile Missile Cutoff Treaty – are important for their contributions to the goals of the NPT and because each one—while begun in the 1960s or earlier—remains part of the ongoing nonproliferation agenda and likely will be for years to come. (4) Beginning in the 1960s, a succession of Nuclear Test Ban Treaties stopped the Nuclear Weapon States from conducting tests, and for the most part, also discouraged other nations from doing so. First, the trilateral Limited Test Ban Treaty (1963), eventually joined by over 125 states, grew out of diplomatic efforts prompted by global pressures for eliminating the testing of nuclear devices that polluted the atmosphere; however, disagreement over verification procedures restricted the ban to only the atmospheric tests. With testing resumed underground, a Threshold Test Ban Treaty (1974) between the U.S. and USSR prohibited these tests exceeding a yield of 150 kilotons. The Peaceful Nuclear Explosions Treaty, a companion to the Threshold Test Ban Treaty, also helped to solidify this effort. Non-nuclear weapon states have long pressed for an official halt to all testing as one means of limiting proliferation. By 1996 all five NWS had halted testing; however, the non-nuclear weapon states have focused attention on the pursuit of a Comprehensive Nuclear Test Ban Treaty (1996) that has 183 signatures but currently lacks the signatures of key states required for ratification, including the United States.

The goal of complete disarmament of nuclear weapon stockpiles has been elusive, but considerable progress has been made through the steady (5) Elimination of nuclear weapons stockpiles, long a major demand of non-nuclear weapon states for their pledge of nonproliferation. Bilateral treaties to reduce U.S. & USSR (later Russian) nuclear arsenals have cut them by roughly 80%, and have been offered to show compliance with NPT charter disarmament pledges. These bilateral treaties were rooted in the first Strategic Arms Limitation Treaty (SALT I) (1969-1972), its successor SALT II (1972-1979), and also the Anti-Ballistic Missile Treaty (1972) from which the U. S .withdrew in 2002. This sequence of important bilateral treaties included the Intermediate-Range Nuclear Forces Treaty

(1987) that eliminated an entire class of nuclear and conventional weapons, namely ground-launched ballistic and cruise missiles with ranges between 500 and 5500 kilometers. The Strategic Arms Reductions Treaty (START I), signed in 1991, reduced the number of deployed, offensive strategic weapons. It expired in 2009 and was replaced with the New START Treaty (2010) which required further reductions. The New START Treaty replaced the Strategic Offensive Reductions Treaty (SORT), also called the Moscow Treaty (2002) that reduced deployed U.S. and Russian strategic arms. The step-by-step approach endorsed by the NWS has not found favor with the non-nuclear weapon states that continue to press for more drastic measures to eliminate NWS nuclear stockpiles.

The goal of a (6) Fissile Material Cutoff Treaty is to curb the supply of fissile materials for use in nuclear weapons while providing controlled supplies for peaceful power reactors. This includes the means to assure that nuclear materials are securely stored and transported, and protected from theft or diversion by terrorists. Within months of the bombing of Hiroshima and Nagasaki, scientists realized a path to controlling nuclear weapons required controlling fissile materials, particularly highly enriched uranium and weapons grade plutonium. Slowly but surely the United States and Russia took unilateral steps before the end of the Cold War to reduce their fissile material stockpiles, improved controls over existing supplies, and halted new production; indeed, the three other Nuclear Weapon States also have halted new production of HEU and plutonium for nuclear weapons. Although negotiations have been as yet unsuccessful, a Fissile Materials Treaty long has been considered by all parties to be an important nonproliferation measure to restrain the nuclear weapons ambitions of the “threshold” states.

Three more elements of the NPT regime have been successful in preventing or slowing nuclear proliferation through international cooperation – the Nuclear Suppliers Group, the Cooperative Threat Reduction Program, and the Missile Technology Control Regime. These and future international initiatives, yet to be developed, will be part of unrelenting efforts to control nuclear weapons, nuclear materials, and their means of delivery. (7) The informal Nuclear Suppliers Group has produced some restraints on the transferring of materials necessary for the development of nuclear weaponry. Established in 1974, the group adopted a so-called “trigger list” of items related to the production of nuclear weapons that require recipient states to agree to full-scope IAEA safeguards. Similarly, the Proliferation Security Initiative (2003) is a partnership of over 100 nations to prevent the trafficking of weapons of mass destruction, their means of delivery, and related materials. The UN Security Council Resolution 1540 (2004) is designed to halt illicit nuclear trafficking, especially to terrorists. (8) The U.S.- sponsored Cooperative Threat Reduction program, begun in 1992, following the collapse of the Soviet Union, aimed to secure Soviet nuclear materials and weapons, to assist in the destruction of many of these weapons, and to keep others from falling into undesirable hands. The partnership with Russia also aimed at improving the security of stored fissionable materials, and finding employment at home for Russian nuclear scientists and technical specialists to prevent them being recruited by foreign states. This post-Cold War nonproliferation program spawned several related multilateral programs such as the Global Threat Reduction Initiative that sought to improve the security of the vast global stocks of highly enriched uranium located in scattered civilian facilities. Also, the 1980 Convention on the Physical Protection of Nuclear Material—with its Protocol “and Nuclear Facilities” added to title of amended convention in 2005, but not without opposition—is currently the only legally binding treaty that addresses physical security standards. The biannual Nuclear Security Summits (NSS), held in 2010, 2012, and 2014 and scheduled to conclude in 2016, have urged nations to ratify the Convention and its Protocol, and have fostered greater national activity in the security and protection of fissile materials from terrorists. And, finally, (9) The Missile Technology Control Regime (1987) that seeks to restrict the traffic in ballistic missiles and missile technology—basic nuclear weapons delivery systems—complements nuclear nonproliferation activities. This voluntary organization has developed guidelines that restrict export of items that contribute to development of both missiles and unmanned air vehicles (1993) capable of delivering weapons of mass destruction.

NPT Expectations

In such an uneasy world, it is difficult to balance the accomplishments against the unresolved issues of the overall nonproliferation regime consisting of the 1968 Non-Proliferation Treaty (NPT) and many supporting arms control arrangements. The NPT has long been considered the heart of current nonproliferation activities. The original NPT "Grand Bargain" codified the right of non-nuclear nations to develop nuclear facilities for peaceful uses with the agreement that those states would not seek nuclear weapons. President Lyndon Johnson, signing the treaty on July 1, 1968, reinforced this idea. The NPT, he declared, "encourages the peaceful use of nuclear energy by assuring safeguards against its destructive use… . But, perhaps most significantly, the signing of this treaty keeps alive and keeps active the impulse toward a safer world." However, the emergence of the Second Tier Nuclear Weapon States, and potentially Iran, has caused many Western analysts and officials, especially Americans, to question the NPT's usefulness and the effectiveness of its operational arm, the International Atomic Energy Agency (IAEA). The critics have centered their attention on security issues and stressed the NPT regime's failure to prevent the emergence of new nuclear weapon states. Additionally, they do not believe it will be able to prevent the potential use or diversion of nuclear materials or systems by terrorist groups. Consequently, both the NPT and IAEA have been placed in the difficult position of trying to deal with what were essentially dual-use technologies—those that could be used to make fuel for power plants or for weapons. Yet charges by the media and officials of nuclear weapon states that the NPT is ineffective in halting proliferation, or that the IAEA failed to provide early detection of emergent nuclear weapon programs, often stems from a misreading of the objectives and the limitations placed on both.

As the basic nonproliferation agreement, the NPT emerged as a compromise among the non-nuclear nations and the nuclear weapon states that sought to balance the promise of the Atoms for Peace program with the five NWS's desire to prevent new nuclear weapons nations. The NWS reluctantly agreed to seek "effective measures" to halt the nuclear arms race and to seek nuclear disarmament, in return for which the non-nuclear states made an unqualified commitment to halt any nuclear weapons proliferation activity. At the same time, the non-nuclear states insisted that the basic NPT agreement guaranteed their "inalienable right" to undertake the "research, production and use of nuclear energy for peaceful purposes without discrimination." The IAEA's original mandate that preceded the NPT likewise emphasized the promotion of the peaceful and safe use of nuclear technology, together with nuclear verification and security. But in 1958 the IAEA's founding fathers were, according to political scientist John Stoessinger, "haunted by a formidable dilemma: how was the optimum balance to be struck between the Agency's developmental function as a 'contributor' to peace, health and prosperity throughout the world, on the one hand, and its restrictive role, as deterrent against atoms-for-war, on the other?" This dilemma has prevailed for more than four decades. The IAEA with ties to the NPT and United Nations draws its essential authority from the safeguard agreements negotiated with individual member states, which specifies such arrangements as record keeping, defined on-site inspections, and declared nuclear materials. The IAEA's role, thus, has been defined by jurisdictional restrictions resulting from dealing directly with individual states. Nonetheless, most individuals currently acknowledge that the IAEA is the primary international organization responsible for ensuring global nuclear security. Notwithstanding the limitations under which the NPT was born and operates today, the NPT and IAEA are undeniably the bedrock of the nonproliferation regime and the steadying foundation upon which nations rely when world events threaten peace and stability.

One measure of the NPT and IAEA's success is that by the first decade of the 21st century, some sixty nations have employed small-scale nuclear research reactors that have aided in medical and agricultural development, and over 30 have built and operated nuclear power plants to generate electricity. Another notable success is that President John F. Kennedy's fearful 1963 prophecy—that

by 1970 there might be 10 nuclear powers instead of four, and by 1975, 15 or 20—failed to materialize.

While nonproliferation efforts certainly limit the access stateless rogues and terrorists can have to nuclear materials and weapons, stateless rogues are not the reason nuclear-armed states cling to their nuclear arsenals. National rivalries still are seen as justification for keeping nuclear arsenals. Accordingly, there are necessary and sufficient reasons to believe that support of nonproliferation—even for states possessing nuclear weapons— was, and still is, a worthwhile effort, especially considering its many accomplishments. That has been, after all, the collective opinion of statesmen and diplomats who over the years endorsed the NPT and put in place today's larger "nonproliferation regime." Nevertheless, many in the international community are disappointed that the nonproliferation regime has not been able to accomplish more. One issue for the non-nuclear weapon states is the substantial resources that the NWS are devoting to modernizing their nuclear weapons stockpiles. Hans Kristensen described the extent of these modernization efforts in an article for *Arms Control Today*. For example, over the next 30 years the U.S. nuclear enterprise is estimated to cost at least $1 trillion dollars. Summarizing the situation Kristensen wrote, "Despite significant reductions in the overall number of nuclear weapons compared with the Cold War era, all of the world's nine nuclear-armed states are busy modernizing their remaining nuclear forces for the long haul. None of the nuclear-armed states appears to be planning to eliminate its nuclear weapons anytime soon. Instead, all speak of the continued importance of nuclear weapons." At issue is the intent of the nuclear-armed states that are either planning to modernize their existing nuclear arsenals in perpetuity or increasing their arsenals. Between the United States and Russia the pace of nuclear reductions has been slowing, and without leadership from the U.S. and Russia, the rest of the world's nuclear-armed states feel little pressure to curtail the size of their arsenals.

The linkage between the long-term goals of international nuclear disarmament and the need for continued progress in relatively near-term steps has been apparent since the beginning of the nuclear era. A now declassified 1958 U.S. National Intelligence Estimate discussed the likelihood of additional countries developing nuclear weapons, and commented on the effect a possible test ban agreement between the US and USSR might have in restraining other countries from building nuclear weapons. "However," the assessment continued, "the inhibiting effect of a test ban moratorium would be transitory unless further progress in disarmament—aimed at effective controls and reduction of stockpiles—were evident." This was five years before the Limited Test Ban Treaty and a decade before the NPT, yet already it was apparent to security analysts that if non-proliferation efforts stood still, more nations would find it acceptable to acquire nuclear weapons.

Clearly, then, for the NPT to survive and remain relevant, progress must continue to be made in controlling nuclear materials while reducing the number of nuclear weapons worldwide. Yet, the accomplishments of the nonproliferation regime have been substantial and arguably far more extensive and enduring than all but the most visionary idealist might have expected.

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