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Oliver Thränert

The Future of the Nuclear Non-Proliferation Treaty

Perspectives in Advance of the
2005 Review Conference

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SWP
Stiftung Wissenschaft und
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German Institute for
International
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Ludwigkirchplatz 3-4
10719 Berlin
Germany
Phone +49 30 880 07-0
Fax +49 30 880 07-100
www.swp-berlin.org
swp@swp-berlin.org

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**The Future of the Nuclear Non-Proliferation Treaty.
Perspectives in Advance of the 2005 Review Conference**

The proliferation of nuclear weapons is one of the greatest challenges facing international relations. This has been underscored by a series of recent events: North Korea's announcement that it was withdrawing from the Non-Proliferation Treaty and its apparent continuation of a nuclear weapons program; Iran's progress in building its own nuclear program, which is aimed at acquiring control of the complete nuclear fuel cycle and would thus give Tehran a nuclear weapons option despite all claims to the contrary that it is merely pursuing the use of nuclear technology for peaceful purposes; Libya's admission that it pursued an illegal nuclear weapons program, which it is now willing to give up; and Pakistan's confirmation that a group of its scientists covertly supplied the aforementioned countries, and possibly others, with the centrifuges necessary for enriching uranium.

The Treaty on the Non-Proliferation of Nuclear Weapons, or simply the Non-Proliferation Treaty (NPT), which went into effect in 1970, has played a key role in keeping the world from being engulfed by nuclear weapons. The NPT established a norm for the non-proliferation of nuclear weapons that has been recognized by almost every country on the planet. In addition to the prohibition of proliferation, the treaty is based on two additional pillars: a pledge by the five nuclear powers recognized in the treaty to disarm and an agreement to cooperate internationally in the use of nuclear energy for peaceful purposes.

In establishing this norm, the NPT made a considerable contribution to stabilizing mutual expectations by making sure that those states that chose to forego nuclear weapons did so permanently and verifiably. The spread of nuclear energy for peaceful purposes that has taken place since the 1970s would have been almost impossible without the treaty and its regime of transparency, which made it possible to check whether a civil nuclear program was being misused for military purposes. Furthermore, the NPT also helped lead states such as South Africa, and most recently Libya, to give up the nuclear option under international observation and thus do so credibly. Nevertheless, there existed from the start a considerable degree of tension between the treaty's three pillars, which has expressed itself in fierce contro-

versies. These debates have intensified markedly in recent years. While the United States above all insists on maintaining non-proliferation, many non-nuclear weapons states demand the NPT's disarmament pledge be fulfilled and refuse to be cut off gradually from the use of nuclear energy for civilian purposes in the course of fighting proliferation.

The next NPT Review Conference will take place in May 2005 against the backdrop of this critical development. Germany, as a non-nuclear weapon state has a great deal of interest in the conference's success so as to promote multilateral arms control as a cooperative instrument of foreign policy. The conference must make it clear that the great majority of treaty signatories continue to view nuclear non-proliferation as crucial to world peace and security. If the conference fails to do so, the non-proliferation norm could be undermined as a consequence. What can be done to strengthen the NPT? And which positions should Germany take to this end at the NPT Review Conference 2005? These are the central questions of this paper.

Given the extraordinary significance of the NPT for the future of nuclear non-proliferation, this analysis concentrates on the perspectives that this treaty offers. This does not mean that other elements such as export controls are unimportant. The Proliferation Security Initiative introduced by the United States in May 2003 shows that these measures are gaining relevance. However, without the NPT, such political strategies would lose their legitimacy. For this reason, this study focuses on the heart of non-proliferation policy, the NPT.

Within the framework of the problem as stated above, the following six fields, which will for the most part determine the NPT's future, will be illuminated:

1. the problem of universality, that is to say the question of how the NPT signatories should deal with the three non-member states Israel, India, and Pakistan;
2. the problem of the means of verifying compliance with the treaty, where urgent improvement is needed;
3. the problem of implementing the disarmament pledge contained in the NPT, which is just as important for the future balance of the NPT as the fourth problem area;
4. providing access to technology for civilian nuclear programs;
5. preventing or impeding treaty signatories from leaving the NPT, a step that is at present relatively simple;
6. the question of what has to happen when a state violates the NPT.

This study comes to the following conclusions and recommendations:

1. The problem of universality presents a dilemma that can hardly be solved. On the one hand, it is improbable that India, Israel, or Pakistan will join the NPT. On the other hand, giving up this goal would send a signal that it is possible for states outside the treaty to acquire nuclear weapons without the community of treaty signatories at least continuing to urge them to give up such weapons. Doing so would be tantamount to bolstering the arguments of those countries resisting the strengthening of the NPT in the field of verification. Therefore, universality should remain a stated goal.
2. It is crucial to the NPT's future that the means of verifying the renunciation of nuclear weapons are strengthened. In order to increase the effectiveness of controls, certain measures—which are called here “modern verification procedures”—must be implemented. Therefore, at the 2005 Review Conference, it should be recommended that these new rules should become the standard for fulfilling the verification duties according to Article III of the NPT. Nuclear supplier countries should make exports for the peaceful use of nuclear technology dependent on compliance with the modern verification procedures.
3. As far as the problem of access to the complete use of the nuclear fuel cycle goes, there is no comprehensive solution. Neither U.S. President George W. Bush's proposal for creating a uranium enrichment cartel, nor IAEA Director General Mohamed ElBaradei's idea to allow only international centers for enriching uranium (and reprocessing) are convincing. Ultimately, solving this problem will rely on individual strategies for persuading key states such as Iran to give up their nuclear projects and ambitions. Such approaches should contain the guarantee of access to nuclear fuel as well as its repatriation.
4. In the event a country should desire to withdraw from the NPT in the future, the convening special conference of NPT members should be mandatory. There, the state seeking to withdraw would have to justify its intentions. The goal here would be to

keep the state from withdrawing in the end.

Universality

Every state that gives up certain weapon options by joining a non-proliferation treaty does so in the interest of encouraging as many other states as possible to do the same. This goes especially for the NPT, because the greatest deterrent effect stems from the possession of nuclear weapons.

Since the end of the Cold War, when more than 40 states—among them the nuclear powers France and China—declared their willingness to join the NPT, the treaty has come to include almost the entire world community. With the accession of South Africa, the NPT came to include a country that destroyed its entire nuclear arsenal. Even Libya is a signatory and has given up the nuclear weapons project that it admitted to pursuing. Brazil and Argentina also once had nuclear ambitions, but they too are now non-nuclear weapon members of the NPT. This goes as well for the former Soviet republics of Ukraine, Kazakhstan, and Belarus, where nuclear weapons remained after the collapse of the Soviet Union. Since Cuba joined the NPT in November 2002, only three states remain on the sidelines: Israel, India, and Pakistan. While there is no doubt that the latter two have nuclear weapons, it is also generally assumed to be the case with Israel, although no Israeli government has ever openly admitted to possessing nuclear weapons.

The fact that three states with nuclear arms are outside the treaty regime puts great strain on the treaty. After all, those countries that joined the NPT as non-nuclear weapons states assumed a temporary acceptance of nuclear weapons in the five nuclear weapons states legitimized by the treaty, i.e. the United States, Russia, China, France, and Great Britain. In no way did they consider tolerating additional nuclear powers. Furthermore, by joining the NPT, the five official nuclear weapons states, submitted to a pledge to disarm, something that is not binding for the three outsider states. In addition, the possession of nuclear weapons by the three states that are keeping their distance from the NPT directly affects their neighbors' security interests. Therefore, the Arab states, which have renounced nuclear weapons, see Israeli nuclear weapons as an affront. Iran regularly brings up Tel Aviv's possession of nuclear weapons

and also feels confronted by the nuclear weapons of its immediate neighbor Pakistan.

Another consequence of the NPT is that the five recognized nuclear weapons states may not support other countries in the development of nuclear weapons—a commitment that also does not apply to the three non-members of the NPT. While this hardly presents a problem with regard to India and Israel—as these countries have no interest in helping other states build nuclear weapons¹—Pakistan is a serious matter. After all, this country—or at least a few of its scientists—was deeply involved in creating a black market for militarily useful uranium enrichment technology. The recipients were, among others, the three countries of Iran, Libya, and North Korea, which had joined the NPT as non-nuclear weapons states. This has inflicted the most serious of damage on efforts to prevent the proliferation of nuclear weapons.

Against this backdrop, IAEA Director General Mohamed ElBaradei is of the opinion that the NPT regime will ultimately be unable to survive without Israel, India, and Pakistan joining as non-nuclear weapons states.² The option of including these three countries in the NPT as recognized nuclear weapons states is impracticable. This would require amending Article IX, which defines as nuclear powers those states that had “exploded a nuclear weapon or other nuclear explosive device” before January 1, 1967. Such a change can only be achieved by reaching a consensus among treaty members, which appears to be almost impossible. What then are the prospects of the three outsiders joining the NPT as non-nuclear weapons states?

The Israeli nuclear weapons program is apparently more closely tied to the founding of the State of Israel than was assumed for a long time. Israeli plans for a nuclear option goes back to the state's founder David

1 However, by all appearances, Israel seems to have supported South Africa in its construction of nuclear weapons, see Bernhard Rabert, “Die südafrikanischen A-Waffen—eine entschärfte Zeitbombe?,” *Aussenpolitik*, vol. 44, no. 3 (1993), pp. 232–242 (234f).

2 “Curbing Nuclear Proliferation. An Interview with Mohamed ElBaradei,” *Arms Control Today*, vol. 33, no. 9 (2003), p. 6.

Ben-Gurion. As early as the 1950s, he was of the opinion that Israel needed nuclear weapons to prevent a second Holocaust.³

The emotional connection between possessing nuclear weapons and the memory of the Holocaust is a key reason why the overwhelming majority of the Israeli public supports its country's nuclear policy. Most recently, Israel's security has improved with the toppling of Saddam Hussein's regime in Iraq and Libya's decision to give up its nuclear weapons program. Iran has also agreed to more intrusive inspections of its nuclear program. With that, pressure has been growing on Tel Aviv to put its nuclear weapons up for consideration. But no Israeli government will be willing to do that as long as a stable peace in the Middle East has not been achieved.⁴

In the 1960s, the United States, with the help of inspections at the Israeli nuclear facility Dimona, at first tried to keep the Israelis from developing nuclear weapons. When this failed—the inspectors were deceived—U.S. President Richard Nixon assured the then Israeli prime minister, Golda Meir, that the United States would not concern itself further with Israel's nuclear weapons program as long as the Israeli government did not make it public and did not carry out nuclear tests. This arrangement has remained in tact until today. Due to the ambiguity of its nuclear status in public, Israel is not subject to U.S. pressure. Furthermore, President Bush's administration tolerates Israel's nuclear weapons using the same typically neo-conservative rhetoric with which British and French nuclear weapons are accepted: They do not present a threat to the United States.⁵ After all, Israel is the United States' leading ally in the important yet conflict-ridden Middle East.

Like Israel, India first began considering the acquisition of nuclear weapons back in the 1950s. For India, however, what mattered from the start was less a matter of security than an increase in prestige and status. The intention of dividing the world into

legitimate nuclear weapons states and non-nuclear weapons states, as pursued by the NPT treaty, was felt in New Delhi to be a further expression of colonial politics. When the chairman of India's Atomic Energy Commission, Homi J. Bhabha, was killed in an airplane that crashed under mysterious circumstances, the Indian nuclear program was set back significantly. Because Article IX of the NPT established that legitimate nuclear weapons states were only those states that had detonated a nuclear device before January 1, 1967—a deadline India could no longer meet due to Bhabha's death—New Delhi rejected the treaty in 1968. To this day, nothing has changed India's perception of the NPT as a neo-colonial tool. To the contrary, it is more likely that this feeling has grown stronger since the indefinite extension of the treaty in 1995—a move that was unexpected by New Delhi.⁶

On May 11 and 13, 1998, India carried out a series of nuclear weapons tests and since then has openly admitted to having nuclear weapons (The first Indian test in 1974 was labeled a "peaceful nuclear explosion.") So long as the five official nuclear weapons states believe nuclear weapons improve their security, such is India's standard argument, it is hard to imagine why India should renounce its nuclear weapons. Independent of its refusal to join the NPT, India, says New Delhi, is now a nuclear weapons state and must be accepted as such.⁷

Reacting to the Indian nuclear tests, neighboring Pakistan conducted similar tests on May 28 and May 30, 1998. The Pakistani nuclear weapons program is symbiotically related to the Indian program. Pakistan began its nuclear program in 1971, shortly after losing a war to India, but the program really got up to speed only in 1974 after India's first nuclear explosion. Despite its precarious economic situation, Islamabad has made every possible effort to establish parity with India by means of its own nuclear weapons program. Nuclear threats—in the opinion of the Pakistani political elite, which is supported by the overwhelming majority of the country's population—justify nuclear responses. Besides, says Islamabad, nuclear weapons are necessary to balance India's conventional superiority. Just like its eastern neighbor, Pakistan is of the opinion that it has to be accepted as a nuclear weapons state. Oblivious to the scandal surrounding

³ Cf. Avner Cohen, *Israel and the Bomb* (New York, 1998).

⁴ Robert Einhorn, "Curbing Nuclear Proliferation in the Middle East," *Arms Control Today*, vol. 34, no. 2 (2004), pp. 7–11. There are now authors who do recommend that Israel give up its nuclear option, because they consider the deterrent effect of these weapons to be questionable, see Zeev Maoz, "The Mixed Blessing of Israel's Nuclear Policy," *International Security*, vol. 28, no. 2 (Fall 2003), pp. 44–77.

⁵ Douglas Frantz, "Israel Extends Nuclear Weapons Capability," *Los Angeles Times*, October 12, 2003, p. A1.

⁶ Cf. George Perkovich, *India's Nuclear Bomb. The Impact on Global Proliferation* (Berkeley et al., 1999).

⁷ Jaswant Singh, "Against Nuclear Apartheid," *Foreign Affairs*, vol. 77, no. 5 (September–October 1998), pp. 41–51.

parts of the Pakistani nuclear establishment's support for North Korea, Iran, Libya, and possibly other countries and their nuclear programs, Pakistani President Pervez Musharraf has made it clear that his country's nuclear weapons program will continue.⁸

The United Nations' Security Council, on June 6, 1998, condemned the Indian and Pakistani tests in Resolution 1172. Both countries were called on not to carry out any further nuclear explosions, to suspend their nuclear weapons programs, to refrain from deploying such weapons, and to end the production of fissile material for nuclear weapons. According to the stipulations of the NPT, the resolution went on to say, India and Pakistan could not be accepted as nuclear weapons states. Both states were urged to join the NPT as non-nuclear weapons countries.

Despite the Security Council's unambiguous position, the United States has since practically come to accept Pakistani and Indian nuclear weapons. The administration of U.S. President Bill Clinton imposed sanctions against both countries and demanded they suspend the production of plutonium and weapons-grade uranium. But even then, Washington pursued these coercive measures half-heartedly, fearing that these measures could hit Pakistan considerably harder than India and make it even more likely that Islamabad would resort to exporting nuclear and missile technology.⁹

The Bush administration decided from the start not to let Indian and Pakistani possession of nuclear weapons hamper the development of good relations and urged the U.S. Congress to lift the remaining sanctions against the two countries. This accommodating policy became more marked after September 11, 2001. Pakistan, from the point of view of the United States, became a key partner in the international war on terror. Since then, Islamabad has received extensive economic and military assistance from Washington.

With regard to India, the Bush administration stressed that its goal would be to deepen the partner-

ship between the two largest democracies on Earth. President Bush even promised India cooperation on civilian nuclear activities and civilian space programs. However, America refuses to explicitly call on India to join the NPT as a non-nuclear weapons state. It can already be said that the two countries have begun to enter into a strategic alliance.¹⁰ Washington is pushing the alliance also in order to create a counterweight to China's growing power.

Thus, all three of the states outside the NPT are, for very different reasons, at the same time important partners for the United States. They can therefore expect Washington to refrain from pressuring them to join the NPT. In any event, the United States will not allow this question to strain its relations with these countries. Even with a Democratic administration under John Kerry, it is improbable that anything essential would change on this point. The neo-conservative rhetoric so characteristic of the Bush administration—which, in accordance with U.S. interests, distinguishes between whose nuclear weapons are acceptable and whose are not—certainly would not be brought to bear, but the strategic reasons why the United States will not call on Israel, Pakistan, or India to renounce nuclear weapons would remain unaffected.

The European Union member states have found it difficult in the past to develop a common position vis-à-vis India's and Pakistan's nuclear weapons. While some, such as Germany, Sweden, and Denmark, froze their development aid to India and Pakistan after their 1998 nuclear tests, others, such as France and Spain, were completely passive. The latter were of the opinion that Pakistan and India, as non-members of the NPT, had no obligation to make do without

⁸ Farah Zahra, "Pakistan's Road to A Minimum Nuclear Deterrent," *Arms Control Today*, vol. 29, no. 5 (1999), pp. 9–13; Oliver Müller, "Pakistan zeigt atomare Stärke," *Handelsblatt*, March 10, 2004, p. 7.

⁹ Oliver Thränert, "Rüstungskontrolle und Alleingang: Die globale Nichtverbreitungspolitik der USA," in: Peter Rudolf and Jürgen Wilzewski (eds.), *Weltmacht ohne Gegner. Amerikanische Außenpolitik zu Beginn des 21. Jahrhunderts* (Baden-Baden, 2000), pp. 269–296.

¹⁰ Cf. The White House, "The National Security Strategy of the United States of America," September 2002, p. 10, <www.whitehouse.gov/nsc/nss.pdf>; Colin Powell, "A Strategy of Partnerships," *Foreign Affairs*, vol. 83, no. 1 (2004), pp. 22–34. Neither in the national security strategy, nor in the U.S. secretary of state's contribution to *Foreign Affairs* are Pakistan's or India's nuclear weapons even mentioned. See also, Oliver Lembcke, "Which Side Are You on, Boy? Die USA, Indien und Pakistan in der Region Südasiens," in: Werner Kremp and Jürgen Wilzewski (eds.), *Weltmacht vor neuer Bedrohung. Die Bush-Administration und die US-Außenpolitik nach dem Angriff auf Amerika* (Trier, 2003), pp. 397–424; Peter Slevin, "U.S. to Send India Nuclear, Space Technology," *Washington Post*, January 13, 2004, p. A14; Christian Wagner, "Indiens neue Beziehung zu Amerika. Zweckbündnis oder strategische Allianz?," Studie 27/03 (Berlin: Stiftung Wissenschaft und Politik, 2003).

nuclear weapons.¹¹ In its strategy against the spread of weapons of mass destruction, the European Union has taken the position that the possession of nuclear weapons by countries that are not members of the NPT threatens to undermine non-proliferation and disarmament efforts. Therefore, the EU pursues the goal of worldwide adherence to the NPT.¹²

Neither Israel, nor India, nor Pakistan has the slightest intention of giving up their nuclear weapons; all three countries are important partners for the United States; and all three can count on Washington's support in this matter. The question therefore arises whether the European position is still realistic today. Furthermore, given the hopelessness of the demands contained in their proliferation policy, the Europeans have to ask themselves how much they want the nuclear weapons issue to strain their relations with these countries.

On the other hand, it can be asked with the same justification: If the NPT—as is repeatedly claimed by the U.N. Security Council—is a cornerstone of international non-proliferation policy as well as global stability, how can one give up pressing Israel, India, and Pakistan to join the NPT as non-nuclear weapons states? Ultimately, policymakers face a classical dilemma for which there is no convincing solution.

At the same time, world leaders and policymakers cannot simply evade the issue. Rather, they have to act practically, by the time the 2005 NPT Review Conference convenes at the latest. After weighing the pros and cons, it seems appropriate to continue calling on Israel, India, and Pakistan to join the NPT as non-nuclear weapons countries. This demand may have taken on the form of a ritual, but sometimes, it is better to cling to a ritual than to abandon it, for renouncing it would probably have graver consequences. It would become more difficult to persuade those NPT member states that are important for the treaty regime's future—for example, many Arab states—but have so far refrained from taking an active

part in giving the treaty regime the strength it needs (for example, implementing the IAEA's Additional Protocol). Israeli possession of nuclear weapons is for these countries a thorn in the side. Calling on Tel Aviv to join the NPT, even if this has little chance of success, is the very least that the Arab treaty partners expect. States such as Brazil and South Africa, which have given up their nuclear ambitions, are watching warily to see whether India and Pakistan are successful in establishing themselves as nuclear powers. It would hardly be possible to convince a country such as Iran to suspend its efforts to acquire control of the complete nuclear fuel cycle, as the Europeans are trying to do, if at the same time appeals to India, Pakistan, and Israel to join the NPT as non-nuclear weapons states were dropped.

If demands to join the NPT as non-nuclear weapons countries are maintained, they would be directed less at the countries concerned than at the member states whose active cooperation is central to the treaty regime's future. If the international community were to give up appealing to Israel, India, and Pakistan to join the NPT, it could boost the arguments of countries such as Iran and others who claim that NPT members no longer take the implementation of the treaty very seriously, and that it is no longer necessary to attach too much political importance to carrying out its stipulations.

For that reason, the Europeans should go on practicing the balancing act of maintaining its positions on NPT membership and at the same time conducting a dialogue about this issue with the three states concerned so as to prevent mutual alienation. The question of NPT membership aside, there is no reason not to cooperate pragmatically with the three NPT outsiders where cooperation is of mutual interest and can lead to a containment of proliferation. India's obvious interest in cooperating within the framework of the PSI should be seized upon. New Delhi's contribution to strengthening this initiative—which aims at containing the proliferation of nuclear, biological, and chemical weapons (NBC weapons) and long-range delivery systems as well as their components—would be of great significance. By contrast, bringing India and Pakistan into the Nuclear Suppliers Group, which concerns sets nuclear export controls, would hardly be possible. Such a decision would have to be adopted unanimously by the group's 40-plus member states. Many reject such a move, fearing the creeping recognition of India and Pakistan as nuclear weapons powers.

11 Clara Portela, "The Role of the EU in the Non-Proliferation of Nuclear Weapons. The Way to Thessaloniki and Beyond," PRIF Reports No. 65 (Frankfurt am Main: Hessische Stiftung Friedens- und Konfliktforschung, 2003), pp. 15f.

12 Cf. *Rat der EU, Strategie der EU gegen die Verbreitung von Massenvernichtungswaffen*, <www.ue.eu.int/pesc/Armes/Docs/st15708.de03.pdf>. In the name of the EU, the individual EU Council presidencies have always taken the position at the preparatory meetings for the 2005 NPT Review Conference that India, Pakistan, and Israel should join the NPT as non-nuclear weapons states.

Verification

It is an imperative precondition for the NPT's effectiveness that the non-nuclear weapons states' renunciation of nuclear weapons can be effectively verified. In the past, there were often doubts as to the effectiveness of this process. They were fueled by the Iraqi nuclear weapons program, which went undetected until after the 1991 Gulf War, Iran's secret nuclear activities, and Libya's admission that it had been conducting a nuclear weapons program, which was kept secret from the IAEA as well.

However, the NPT member states themselves are responsible for these inadequacies. In working out their safeguards agreements, which each NPT signatory is required to negotiate with the IAEA after accession, the industrial states, such as the Federal Republic of Germany, rejected inspections that were too intrusive. They feared losing their competitive edge in the market for civilian nuclear programs vis-à-vis the nuclear weapons states, which are not subject to any inspections whatsoever. Thus, the NPT treaty states agreed to a system of controls that focused on declared nuclear facilities. It was to be determined that nuclear material balanced correctly and was not diverted to military purposes. For years, a culture of inspections developed that was characterized by technocratic routine. It relied on a partnership between the IAEA and the inspected states. The goal of uncovering possible secret nuclear activities gradually faded from view.¹³

Therefore, it could happen that IAEA inspections took place in Iraq before 1990 without producing any sign of a nuclear weapons program. The Iraqi program was in no way connected with that country's declared nuclear activities.¹⁴ The same thing later happened to

the IAEA in Iran. There, facilities used in experiments for enriching uranium were not declared and thus went uninspected by the Vienna-based agency.¹⁵ In Libya, the IAEA ultimately had access to a declared research reactor but not to any of the undeclared facilities where the gas centrifuges for enriching uranium were prepared as part of Libya's nuclear weapons program.¹⁶

The shortcomings of the safeguards agreements of the 1970s were already known at that time and were often criticized, especially in the United States. At Washington's insistence, the treaty partners also established the possibility of special inspections. These could be initiated by the IAEA only when there was evidence of incorrect declarations filed by a treaty state. Before such inspections could take place, a complicated mechanism of consultation had to be completed, which also gave the suspect state the possibility of resolving the suspicious circumstances without the special inspections taking place. Only when the IAEA felt this process has been unsatisfactorily completed could it begin its special inspections. Access to undeclared facilities, however, required the advance permission of the state being inspected. If this were not granted, the case had to be turned over to a court of arbitration.

Not least because of this complicated process, the instrument of special inspections was never used during the Cold War. Besides, neither the IAEA nor the treaty members wanted to call into question the effectiveness of the routine safeguard measures. Against the backdrop of the East-West confrontation, the IAEA Board of Governors would have ultimately been unable to reach any agreement on conducting special inspections.¹⁷ The Iraq case sensitized the IAEA to this issue, a development that was expressed in the first application for special inspections being filed

¹³ Harald Müller, "German National Identity and WMD Proliferation," *The Nonproliferation Review*, vol. 10, no. 2 (2003), pp. 1–20.

¹⁴ Wolfgang Fischer, "Nuclear Non-Proliferation and Safeguards: From INFCIRC/153 to INFCIRC/540 and Beyond," in: Erwin Häckel and Gotthard Stein (eds.), *Tightening the Reins. Towards a Strengthened International Nuclear Safeguards System* (Berlin et al., 2000), pp. 9–21. However, after August 1990, Iraq did try to set up an immediate program for the development of nuclear weapons that made temporary use of a research reactor that was under IAEA observation.

¹⁵ IAEA Board of Governors, "Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran, Resolution adopted by the Board, November 26, 2003."

¹⁶ Cf. Hans-Christian Rößler, "Der 'tollwütige Hund' nimmt Vernunft an," *Frankfurter Allgemeine Zeitung*, December 22, 2003, p. 2.

¹⁷ Cf. Fischer, *Nuclear Non-Proliferation and Safeguards*.

against North Korea in 1993. Inspectors there had mistrusted the North Korean information from the start and had carried out their work without routine. Indeed, by analyzing samples taken from a radiochemical laboratory, they were successful in proving that North Korea had diverted from a reactor an amount of plutonium that had to be larger than what was reported. When the IAEA then demanded access to two buildings within the framework of special inspections—information from U.S. intelligence sources suggested that plutonium was stored there—the North Koreans refused, referring to what they saw as unacceptable discrimination, and ultimately announced their withdrawal from the NPT.¹⁸ Thus, the instrument of special inspections was not completely applied in this case. Even today, the IAEA has no practical experience with special inspections.

The case of North Korea provided the IAEA with the pretext for revising its means of verification. The North Korean example had shown that the special inspections were politically unenforceable. A second impetus for introspection came from the bitter experience with the undiscovered Iraqi nuclear weapons project. In order to decisively improve its verification instruments, it would have to be possible, in the estimation of the IAEA, to visit undeclared sites on a quasi-routine basis.

The IAEA's program "93 + 2" set for itself the goal of improving the verification process within two years—and before the 1995 NPT Extension and Review Conference (thus the program's name 93 + 2). In fact, the first part of this program was passed in June 1995. The most important innovation here consisted in admitting environmental sampling. In May 1997, the "model protocol" was adopted by the IAEA Board of

Governors as a second step and supplement to the safeguards agreements. This protocol opens up a new world of verification in the nuclear field and cannot be overestimated in its significance. Because the usual term for this document, the Additional Protocol, does not make this fact sufficiently clear, this paper will speak of "modern verification procedures." These procedures are based on two pillars: more information and greater access.¹⁹

The additional obligations for providing information are to help the IAEA to look at as many activities connected with the nuclear fuel cycle as possible. In the future, it will no longer be possible for military programs to be carried out parallel to civilian projects, as was the case in Iraq. The modern verification procedures require at least a general description of research and development activities related to uranium enrichment and reprocessing even if they were conducted without nuclear material. The IAEA can call on any state party to the treaty to provide additional information. These considerably expanded obligations to inform the IAEA make it possible for the agency to put together profiles of each country. To this end, a computer-aided archive will be established at IAEA headquarters in Vienna, where information from declarations and inspections will be stored alongside evaluations from media and scientific literature, satellite pictures, and other open sources. Information made available by intelligence agencies will also be included.

In order to check the completeness and correctness of declarations, the provisions for access rights IAEA inspectors were expanded considerably. It is now their express task to determine whether there are any undeclared nuclear materials or any undeclared activities at a given site. They now have the possibility to gain access to undeclared facilities at a declared site. This will not be done in the form of ad-hoc raids; rather, requests must be made in writing in advance and provide justification, but under extraordinary circumstances, the deadline for giving notice can be less than two hours. During inspections, the principles

¹⁸ Cf. Larry A. Niksch, "North Korea's Nuclear Weapons Program," CRS Issue Brief for Congress, updated August 27, 2003 (Washington, D.C.: Congressional Research Service, 2003), <www.fas.org/spp/starwars/crs/IB91141.pdf>. While it was possible to defuse the crisis with the 1994 U.S.–North Korean Agreed Framework, the question of the presumed clandestinely diverted plutonium was never conclusively resolved. North Korea was to have opened the two suspect buildings in accordance with the Agreed Framework for special inspections. Because the agreement collapsed in October 2002 over a North Korean uranium enrichment program, these inspections never took place. American intelligence agencies assume that North Korea, at the time the special inspections were applied for in 1993, had diverted around 12 kg (26.4 pounds) of plutonium, enough for two explosive devices.

¹⁹ The protocol was accepted unanimously by the IAEA Board of Governors on May 15, 1997, and published as INFCIRC/540. For those states that implement it, the protocol augments former Safeguards Agreement INFCIRC/153. The document appeared in German in *Bundesgesetzblatt*, no. 4, February 7, 2000. Bruno Pellaud, "The Strengthened Safeguards System: Objectives, Challenges and Expectations," in: Häckel and Stein (ed.), *Tightening the Reins*, pp. 89–98.

of “managed access” apply, meaning industrial or military secrets may be protected if this does not impede the inspectors’ work. If the request for access is based on inconsistencies in a declaration, the state under inspection must at first be given the chance to explain these inconsistencies as long as the IAEA is not of the opinion that such a delay would interfere with the purpose for which the request is being made. Furthermore, the inspectors can take site-specific environmental samples anywhere they want to—even outside declared facilities. The state being inspected, however, has the possibility—when it is unwilling to grant access to an area that is particularly sensitive in military terms—of taking any reasonable measure to fulfill the IAEA’s requests on adjacent sites or to comply with them in some other way. To this extent, the modern verification procedures are not based on the principle of “any time, any place.” However, the inspectors can lean on a wide range of verification technology. This includes the use of radiation detectors and the aforementioned environmental samples.

The first prerequisite for successfully implementing the modern verification procedures is for all states to be prepared to sign and ratify the Additional Protocol. In its preamble, the protocol is directed at not only the non-nuclear weapons states but also to the nuclear weapons states as well as those countries that have not joined the NPT. While the five official nuclear weapon states have declared themselves willing—albeit to differing extents—to implement the protocol’s civil aspects, the three countries that have not joined the NPT have rejected it.

With the ratification of the protocol by all of the EU member states on April 30, 2004, more than 50 states, including South Africa, have given their approval to the modern verification procedures. Libya and Iran, countries where the threat of proliferation is critical, are already in the process of implementing the protocol although neither has ratified it. Other important countries—Brazil, Argentina, Egypt, Algeria, Syria, and North Korea—have remained on the sidelines. Two key arguments come into play in these countries: First, the protocol intrudes too much on national rights of sovereignty; second, it is, from their prospective, not clear why such intrusive measures for verification should be accepted so long as the nuclear weapons states have yet to fulfill their pledge to disarm. Iran and Libya could possibly end up playing an important role here. Should the implementation of the modern verification procedures in these countries bring to light all previous nuclear projects without the governments in

Tehran and Tripoli complaining that their rights of sovereignty were violated, Iran and Libya could provide the impetus for additional countries, especially those in the all so important region of the Middle East, to get off the sidelines and implement the modern verification procedures as well.

In both its security strategy, which appeared in December 2003, and its strategy against the spread of weapons of mass destruction, the European Union has declared itself in favor of the most comprehensive membership possible in multilateral treaties and the strengthening of the instruments of verification. It therefore wants to promote worldwide recognition of the modern verification procedures.²⁰ At the G-8 Summit of the world’s leading industrial nations at Sea Island in June 2004, the heads of state and government in attendance issued a statement in which the modern verification procedures would be made the standard for fulfilling the verification obligations in accordance with Article III of the NPT.²¹ The final report of the 2005 NPT Review Conference could also contain such a recommendation.²² Regarding this question, the German government, together with its partners, should be fully involved in this question, for the modern verification procedures present a quantum leap in comparison to previous practice—which should have become clear in the preceding passages. Once implementation of the Additional Protocol is made the standard for fulfilling the verification obligations, those states that refuse to implement it would make themselves suspect. They would have to reckon with special inspections, which however could only be applied for when there are more concrete indications of non-compliance.

U.S. President Bush, in a proliferation policy speech given on February 11, 2004, proposed that only those countries that implement the modern verification procedures should be allowed to import materials and equipment for their civilian nuclear programs.²³ On the one hand, such an action would surely provide

²⁰ Cf. “Strategie der EU gegen die Verbreitung von Massenvernichtungswaffen.”

²¹ G-8 Action Plan on Nonproliferation, “<www.g8usa.gov/d_060904d.htm>.”

²² Rebecca Johnson, “Rogues and Rhetoric: The 2003 NPT PrepCom Slides Backwards,” *Disarmament Diplomacy*, vol. 17 (June/July 2003), pp. 5–12.

²³ The White House, Office of the Press Secretary, “President Announces New Measures to Counter the Threat of WMD,” February 11, 2004, p. 5.

incentives to those states that are really interested in the peaceful use of nuclear energy to accept the modern verification procedures. On the other hand, such a proposal is not easily compatible with either the NPT or the IAEA statute. Both establish non-discriminatory access to civilian nuclear energy. Therefore, friendly countries would also criticize the Bush proposal inasmuch as it aims to make technical cooperation dependent on the implementation of the modern verification procedures. However, nuclear supplier countries are still free to link deliveries with fulfilling the modern verification procedures, for such deliveries concern decisions taken by national governments. The German government, acting within a European framework, should stand up, as it has done in the past, for implementing such an arrangement within the context of the Nuclear Suppliers Group.

But will the modern verification procedures with their expanded obligations for providing a broader array of information and granting greater access be enough to uncover clandestine nuclear activity? This mechanism of verification is unlikely to provide a 100-percent guarantee, especially not in closed societies ruled by dictators. This is because uranium enrichment facilities can be very small (300 sq. meters or 3,225 sq. feet are enough) and can be hidden underground.²⁴ Nevertheless, such a facility would require large amounts of energy—especially if it works with gas diffusion—which could probably not go undetected. Also, centrifuges use uranium hexafluoride, which has no other application and can be detected by analyzing environmental samples.²⁵ In any event, under the modern verification procedures, the risk of discovering clandestine nuclear activity is considerably higher, at the latest, when a state moves from easy to hide research and development work to more comprehensive preparations for the construction of nuclear weapons. In any case, the Iraqi nuclear program would have been discovered in the 1980s if the modern verification procedures had existed at the time.

²⁴ Interview with ElBaradei in “Sanktionen funktionieren auf lange Sicht nicht,” *Frankfurter Allgemeine Zeitung*, October 31, 2003, p. 5.

²⁵ Annette Schaper, “Implementing Safeguards in Countries under Suspicion,” in: Häckel and Stein (eds.), *Tightening the Reins*, pp. 151–164. It would be more difficult to discover laser enrichment facilities, but only small amounts of uranium can be enriched using this technology.

The new access rights present a much more elegant solution than the special inspections contained in the original safeguards agreements. These always aimed at uncovering an already suspected breach of treaty and were therefore politically very delicate. That is why they were never applied outside North Korea. Now it is to be possible to routinely visit undeclared buildings and facilities. In principal, this can take place in every state that has implemented the modern verification procedures and therefore cannot be seen by individual states to be discriminatory. Also, the obligatory complicated mechanism of consultation used for special inspections is no longer applicable. At the same time, the IAEA still has the option of special inspections. These could even be triggered by uncertainties that arise in the course of inspections, for example, in the analysis of environmental samples gathered at an undeclared site. However, the problem of possible discrimination would still exist if the impression arose that states implementing the modern verification procedures could still be subjected to special inspections, while others who were not doing so remained unmolested due to a lack of indications and information about sites where such inspections should be carried out.

The effectiveness of the modern verification procedures will ultimately depend on other factors for which we have little insufficient experience thus far. This applies, for example, to the practical implementation of access rights. These are subject in part to negotiations between the IAEA and the state to be inspected, for example, when resolving inconsistencies found in a declaration. At what point does the IAEA decide it is satisfied with an explanation for such irregularities? When do the inspectors, despite cooperation of the state under inspection, demand access to undeclared buildings? How will the procedures of managed access be handled?

Especially in countries where the threat of proliferation is critical, such as Iran, it is important to determine whether and how the rules of inspection will be implemented. Reacting to an IAEA resolution that was labeled unfair and insulting by the Iranian side, Tehran denied access to inspectors from mid-March to mid-April 2004. Later, the interruption was said to be the result of celebrations of the Iranian New Year’s festival. This incident, however, represented the most blatant impediment to the inspectors’ work to date. Inspectors were not allowed to use their cameras; they had no access to facilities that were allocated to the Iranian Ministry of Defense and where work on centri-

fuges was taking place; and Iran refused to issue multi-entry visas for the IAEA employees. Despite these temporary hindrances, the inspectors still succeeded in demonstrating to the Iranian side the inaccuracies and omissions in the declarations Tehran had previously filed. In this respect, the picture is mixed, and it is much too early to evaluate the experiences made with Iran regarding the application of the modern verification procedures.²⁶

Also, where verification technology is concerned, more tests have to be conducted and the results examined. Technically, radiometric processes, mass spectroscopy, and traces analysis are already very advanced. Environmental samples proved themselves very well in uncovering the undeclared high-grade enrichment of uranium in Iraq during the 1990s. Experiences with wipe tests and particle analysis have been similarly positive. With their help, traces of highly enriched uranium were proven found in two facilities in Iran.

Further testing in data sharing and collecting and evaluating information is also necessary. The IAEA and the world's various national intelligence agencies have to get used to cooperating with one another. This will be very important for tracking down undeclared facilities. It remains to be seen whether and to what extent intelligence agencies are willing to provide the IAEA with information. With all the interest in bringing to light clandestine nuclear activity, intelligence agencies also always have an eye on the security of their sources in the targeted countries. In individual cases, it may turn out to be too risky to place sensitive information at the disposal of an international agency. On the other hand, the IAEA has to be on guard not become too dependent on intelligent services. As the case of Iraq made clear in 2003, information from intelligence agencies is sometimes dubious. In compiling their report on alleged Iraqi purchases of uranium in Niger, U.S. intelligence agencies were taken in by a forgery plain and simple. However, intelligence agencies lean not only to exaggeration; sometimes, they underestimate a certain development. One example of this is the case of Libya, where the U.S. intelligence community appeared to be surprised by

the advanced state of the nuclear weapons program there. They therefore probably could not have given the IAEA any information that would have led to inspections at undeclared sites. Furthermore, intelligence agencies focus their attention according to their country's national interests and often concentrate on particular countries. The IAEA's neutrality could be jeopardized by a one-sided influx of information.

In light of all this, the significance of secret information should not be overestimated. For one, they should not directly serve to determine a possible violation of the treaty. Rather they should help the IAEA identify sites where further investigation could pay off. For another, the evaluation of declarations, inspection reports, and open sources already guarantee the IAEA a very large database.

The effective implementation of the modern verification procedures will ultimately also depend on whether the regime can meet the needs of those states that are subject to excessive IAEA inspection measures due to the broad range of their nuclear activities, but that never constituted a proliferation threat because they always cooperated reliably with the IAEA and had no national control over key elements of the nuclear fuel cycle such as enrichment and reprocessing. This applies in particular to the EU states. They expect the IAEA to make proper use of its limited resources when problems emerge in the course of declarations and inspections. Indiscriminate worldwide application of the modern verification procedures would in any case overburden the financial resources of the Vienna-based agency—even if these are beefed up as planned.

The modern verification procedures represent a considerable step forward where NPT verification is concerned. Every effort should be made to convince the NPT member states to put them into place. During the upcoming review conference, it should be recommended that the implementation of the Additional Protocol become the standard for fulfilling the verification obligations according to Article III of the NPT.²⁷

²⁶ IAEA Board of Governors, "Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran, Resolution adopted by the Board on March 13, 2004," GOV/2004/21; IAEA Board of Governors, "Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran, Report by the Director General, June 1, 2004," GOV/2004/34.

²⁷ With that a great deal of political pressure would be put on the treaty states to implement the modern rules of verification. On the other hand, more than 40 NPT members have yet to conclude a safeguards agreement with the IAEA, without this violation of the treaty's stipulations being investigated in any way. In this respect, the significance of such a recommendation of the 2005 Review Conference is to be qualified.

In addition to that, the German government, in alliance with the other European governments, should try to persuade those countries that could see the Libyan example as a model, but have prompted questions about their nuclear ambitions to accept the protocol. These countries include in particular Algeria, Egypt, and Syria.

The Disarmament Pledge

The pledge made by the states legitimized by the NPT as nuclear weapons states to reduce and ultimately give up these weapons is the second pillar of the treaty. In the treaty's text, this agreement is vague: Article VI states that all treaty states will take efforts "to pursue negotiations in good faith" with the goal of ending the nuclear arms race and realizing nuclear disarmament as early as possible and to conclude "a treaty on general and complete disarmament under strict and effective control." In reality, the nuclear arms race grew in intensity during the 1970s and peaked in the 1980s with regard to the number of nuclear warheads.

With the end of the Cold War, nuclear disarmament indeed appeared more realistic than ever before. That this raised the expectations of the non-nuclear weapons states became very clear during the 1995 NPT Extension and Review Conference. So as to make the indefinite extension of the NPT acceptable, it was necessary to formulate the principles and goals of nuclear non-proliferation and disarmament. These contained an action plan for reducing nuclear weapons.

At the 2000 NPT Review Conference, calls for implementing Article VI of the NPT became more specific, describing 13 steps of nuclear disarmament. Among these are:

- ▶ the earliest possible implementation of the Comprehensive Nuclear Test-Ban Treaty, which was completed in 1996;
- ▶ the maintenance of the nuclear test moratorium;
- ▶ negotiations on a "cut-off," i.e. the end of the production of fissile material for weapons;
- ▶ negotiations on nuclear disarmament at the Geneva disarmament conference;
- ▶ an agreement on the principles of the irreversibility and transparency of nuclear arms control;
- ▶ obligations for reducing tactical nuclear weapons;
- ▶ the reduction of the significance given nuclear weapons in security policy so that risk of their being used is minimized;
- ▶ regular reports within the framework of the NPT review process on the progress of nuclear disarmament;

- ▶ support for the START process for reducing strategic nuclear weapons;
- ▶ maintenance of the treaty limiting anti-ballistic missile systems, or the ABM treaty.

All of the nuclear weapons powers pledged to take further steps in disarmament.

During the early years of the NPT, it was above all the nonaligned states that actively promoted nuclear disarmament. In June 1998, a new grouping formed under the name "Coalition for a New Agenda" to take up this issue.²⁸ The occasion for founding this grouping was India's and Pakistan's nuclear tests in May 1998. The members of the coalition demanded the complete elimination of all nuclear weapons. Not least because it drew on support from all the continents, this grouping was temporarily very influential. At the 2000 NPT Review Conference, this grouping played a leading role in the disarmament talks about with the five nuclear weapons states, the result of which was the final consensus report containing the 13 Steps.

IAEA Director General ElBaradei has most recently stressed the importance of nuclear disarmament for the future of the NPT. He has even spoken of the agreement lacking 100 percent moral authority so long as there are still countries with nuclear weapons.²⁹

While working on the preparatory committees for the upcoming review conference, many non-nuclear weapons states have seconded this grievance and not only criticized the lack of progress in nuclear disarmament but also openly expressed their concern that some nuclear weapons states, especially the United States, were again assigning a prominent role to nuclear weapons in their national security policy.

In an effort to address their critics, the United States and Russia went to great lengths at the review conference preparatory meetings to underscore the

²⁸ The members of this group were initially Egypt, Brazil, Ireland, Mexico, New Zealand, Sweden, Slovenia, and South Africa. They published their constituent declaration on June 9, 1998. See *Disarmament Diplomacy*, vol. 27 (June 1998), pp. 26–27, <www.acronym.org.uk/dd/dd27/27state.htm>. Slovenia later left the initiative.

²⁹ "Sanktionen funktionieren auf lange Sicht nicht."

progress already made in nuclear disarmament. In the process, they emphasized the cuts made in the U.S.-Russia Strategic Offensive Reductions Treaty, or Moscow Treaty, which was signed in May 2002.³⁰ But the members of the Coalition for a New Agenda sharply criticized this agreement, pointing to the 13 Steps. Warheads that are not operational were not included, they argued. Furthermore, the treaty ignored the principles of irreversibility, greater transparency, and improved verification.

The Bush administration has failed to refute this criticism convincingly. Instead, it drew further condemnation from many non-nuclear weapons states when it publicly admitted at least a partial departure from the 13 Steps. This concerned not only the ABM treaty, which the United States has already withdrawn from, rather above all the U.S. government's unwillingness to pursue the Comprehensive Nuclear Test-Ban Treaty, which was rejected by the U.S. Senate in October 1999, and to submit it for ratification once again.³¹ During a session of the May 2004 Preparatory Committee, the United States even refused to continue accepting the 13 Steps and carry them over into the 2005 Review Conference. Save for China, which did not say anything, Washington was more or less supported by all of the other nuclear weapons states.

In addition to the severe lack of progress in disarmament, from the point of many non-nuclear weapons states, U.S. defense policy has also come under a good deal of criticism. Suspicion is growing

that nuclear weapons are experiencing a general renaissance and again becoming a "normal" instrument of security policy. The impetus behind this perception is being provided by U.S. national security strategy and, to a greater extent, Washington's Nuclear Posture Review.

The latter concerns a conceptual strategy paper required by the U.S. Congress and is in no way a concrete draft plan. In addition, the document foresees reducing the dependency of U.S. defense strategy on nuclear weapons through the strengthening of conventional capabilities.³² Nevertheless, the review contains elements that appear generally problematic with regard to the goal of arms control in general and the NPT in particular. Above all, the United States makes it clear that nuclear weapons, despite the envisioned reductions, will still have a very prominent role in U.S. national defense strategy. Thus, the fulfillment of the NPT's disarmament pledge recedes further into the distance.

Furthermore, the document touched on negative security guarantees by mentioning the possibility of nuclear threats being made against non-nuclear weapons states. In the run-up to the 1995 NPT Extension and Review Conference, the five recognized nuclear weapons states had issued coordinated but one-sided political declarations that differed from one another in detail but at the core amounted to a pledge not to use nuclear weapons against non-nuclear weapons states party to the NPT. This guarantee does not apply should a non-nuclear state together with a nuclear state carry out military aggression against one of the nuclear weapons states or its allies.

Under the leadership of South Africa, which was particularly interested in this question, many bloc-free states have demanded for a long time that these merely political negative security guarantees be included in a legally binding document. The final report issued at the 2000 NPT Review Conference stressed

³⁰ At the heart of this agreement are stipulations allowing each side to possess to 1,700 to 2,000 operational strategic nuclear warheads. Each party is completely free to determine the composition of its remaining strategic nuclear force.

³¹ The temporary breakdown of the Comprehensive Nuclear Test-Ban Treaty, which was due not only to U.S. failure to ratify but also to the refusal of India, Pakistan, and Israel to join it, is taken very seriously by many non-nuclear weapons states. Such an agreement is not only mentioned in the preamble of the NPT, the principles and goals of nuclear disarmament agreed to in 1995 and the 13 Steps drawn up at the 2000 NPT Review Conference ascribe a prominent role to it.

The United States is still helping to finance the international organization preparing the implementation of the Test Ban Treaty with the exception of the on-site inspections. This, however, makes up only a very small part of the CTBTO. The United States is still very interested in the construction and maintenance of a global network for discovering secret nuclear tests by means of seismic, hydro-acoustic, radio-nuclear as well infrasonic measuring stations, of which 321 are presently in operation.

³² "The Nuclear Posture Review" has not been published in full. However, a press conference on this matter took place on January 9, 2002, see <www.defenselink.mil/transcripts/2002/t01092002_t0109npr.html>. In the United States, the document was criticized for many reasons, see Carl Levin and Jack Reed, "Toward a More Responsible Nuclear Nonproliferation Strategy," *Arms Control Today*, vol. 34, no. 1 (2004), pp. 9-14. A German perspective is on offer in Joachim Krause and Benjamin Schreier, "Eine 'neue' Nuklearstrategie der USA? Die Nuclear Posture Review," *Internationale Politik*, vol. 57, no. 7 (2002), pp. 35-42.

that such a step would represent a strengthening of the treaty and contained the impetus for working out the necessary recommendations by the 2005 Review Conference. Since the nuclear powers refuse to accept such a legally binding document on negative security guarantees, this question, against the backdrop of the debate on U.S. nuclear policy at the 2005 Review Conference, could represent a major point of contention.

Other nuclear weapons states are also stonewalling on the issue of nuclear disarmament. Russia is clinging to its strategic nuclear forces as a symbol of its strategic parity with the United States, a status that in reality ceased to exist long ago. Therefore—in contrast to what was actually foreseen in the now defunct START II treaty—Moscow will not completely dismantle its multi-warhead intercontinental missiles. This will allow Russia to maintain its strategic options at a high level. In addition, President Vladimir Putin has announced the development of a new strategic weapon. Furthermore, Russia—somewhat like NATO during the Cold War—now sees nuclear weapons as a means of deterrence against a conventional attack. Therefore, Moscow is only prepared to discuss the reduction of non-strategic nuclear weapons if the reduction of conventional forces is on the agenda at the same time.³³

China is also modernizing and expanding its nuclear forces. For that reason, the DF-31, a three-stage, solid-fuel intercontinental missile, was developed, and additional new designs are already on the drawing board. On top of this comes the planned construction of nuclear-powered submarines, which will be armed with intercontinental missiles. Finally, China is continuing to station along the coast to Taiwan short-range missiles capable of carrying conventional or nuclear warheads—obviously to intimidate the island's people and government.³⁴

The behavior of France and Great Britain in the preparatory committees also astonished the delegations of many non-nuclear weapons states. Although they had both spoken out on behalf of the goal of nuclear disarmament in 2000, they are now once again linking this goal with general disarmament and thus giving the impression that their interest in

nuclear disarmament is already waning.³⁵ Indeed, at least France is planning a comprehensive modernization of its sea-borne nuclear missiles and air-borne cruise missiles.³⁶

Just how important is progress in nuclear disarmament for the future of the NPT ultimately? In giving up nuclear weapons, the non-nuclear weapons states as a rule assumed that the difference between the nuclear weapons states and non-nuclear weapons states would not continue for eternity, but that it would be abolished in the not too distant future by nuclear disarmament. For the future of the NPT, it is of tremendous importance that, in the spirit of balance contained in the treaty, not only the pursuit of non-proliferation but also the goal of nuclear disarmament is given its due.

Above all, representatives of those countries such as South Africa or Brazil, which once had nuclear weapons or flirted with such projects, repeatedly stress the enormous significance of nuclear disarmament. The influence of these states, which often act as spokesmen for the nonaligned countries, should not at all be underestimated. The implementation of the modern verification procedures will only be acceptable to many non-nuclear weapons states if the nuclear weapons states take nuclear disarmament seriously and not, as is increasingly assumed to be the case, assign nuclear weapons a key role in their national defense strategy.

At the same time, it cannot be overlooked that demands for disarmament from some non-nuclear weapons states often merely serve as a pretext. These countries refuse to implement the modern verification procedures, not because the nuclear weapons states have insufficiently disarmed, but because they fear the Additional Protocol will interfere with their national sovereignty. On the whole, certain decisions about nuclear programs in several non-nuclear weapons states probably have less to do with behavior of the nuclear weapons states than with questions of their respective national security. Iran's considerations as to whether it should eventually build nuclear weapons are, for example, connected with the nuclear arsenals of nearby Israel and Pakistan as well as the fear that the United States could one day intervene militarily in Iran to produce regime change. Tehran

³³ Paul Webster, "Just Like Old Times," *Bulletin of the Atomic Scientists*, vol. 59, no. 4 (2003), pp. 30–35; Rose Gottemoeller, "Nuclear Necessity in Putin's Russia," *Arms Control Today*, vol. 34, no. 3 (2004), pp. 7–11.

³⁴ "Chinese Nuclear Forces, 2001," *Bulletin of the Atomic Scientists*, vol. 57, no. 5 (2001), pp. 71–72.

³⁵ Cf. Johnson, "Rogues and Rhetoric."

³⁶ Cf. Ronja Kempin, "Frankreichs Nuklearstrategie vor der Revision?," *Studie 2/04* (Berlin: Stiftung Wissenschaft und Politik, 2004).

has also seen how much India's prestige and status have grown since its 1998 nuclear weapons tests.³⁷

In this respect, for a country such as Iran, the question of NPT universality is considerably more important than the disarmament of the recognized nuclear powers. Further U.S. reductions in nuclear weapons, from the Iranian point of view, would be of little use if the United States at the same time pursued the call for toppling the Iranian regime by means of military intervention. For that reason, the significance of the NPT disarmament pledge should not be overestimated either.

What does this mean for Germany with regard to preparations for the 2005 NPT Review Conference? First of all, it will mean creating a consensus within the European Union. With its 25 members, the EU will make up the most powerful regional group at the conference. If it speaks with one voice, it will have considerable influence on the course of the conference's deliberations.

It will not be easy to formulate a common position on the issue of disarmament, because there are, practically speaking, three categories of EU members: the nuclear weapons states France and Great Britain, the neutral countries Ireland and Sweden, which as members of the Coalition for a New Agenda are particularly insistent on nuclear disarmament, and finally all of the other states, which at least are under the U.S. nuclear umbrella as NATO-members. It is truly a difficult starting point. As the largest non-nuclear weapons state, Germany has an important role to play within the EU.

The EU should at first stress the advances already made in disarmament. Indeed, the number of operational nuclear weapons has in fact been reduced to a mere third of peak 1986 levels. Further necessary measures could follow step by step. Europe can continue to support most of the 13 Steps such as the start of "cut off" negotiations without much problem, because others are blocking possible progress here. Since a few of the 13 Steps, such as the maintenance of the ABM Treaty, have become obsolete, the EU should focus on pursuing modified goals in nuclear disarmament. In light of the fact that France and probably Great Britain seem to support the United States in

giving up on the 13 Steps, the EU's difficulty in determining common marching orders will start here.

Should the question of negative security guarantees play a major role at the 2005 NPT Review Conference, the EU will stray into difficult waters, because it cannot be expected of France or Great Britain that they would intercede on behalf of legally binding security guarantees. Still, the political pressure in this question is more of a strain on the United States and Russia than for the European nuclear powers.

In general, the EU—and Germany should support such a line—should stress that nuclear arms, in its view, play an important but rather subordinate role in security and defense policy compared to conventional arms. The EU should also convey to the non-nuclear weapons countries that nuclear weapons, from the European point of view, have but few military core tasks to fulfill. Because the physical destruction of these weapons would involve many years, the first goal should be to reduce their political-strategic significance.

³⁷ Cf. Oliver Thränert, "Der Iran und die Verbreitung von ABC-Waffen," Studie 30/03 (Berlin: Stiftung Wissenschaft und Politik, 2003).

Technology Transfer

After it became known in early 2003 that Iran was planning to acquire the complete nuclear fuel cycle and build its own uranium enrichment facilities, an international debate ensued over how to deal with nuclear technology transfers and the admissibility of using nuclear energy for peaceful purposes. Article IV of the NPT grants treaty states far-reaching rights with regard to using nuclear energy for peaceful purposes. According to that article, “the fullest possible exchange” of scientific information, equipment, and material is guaranteed. The need in developing countries for nuclear energy for peaceful purposes is explicitly mentioned as well. The inclusion of this article was, alongside the nuclear weapons states’ disarmament pledge, an essential condition for many non-nuclear weapons states in accepting the NPT.

At the time the NPT went into effect, nuclear technology was seen as an important innovation on the road to satisfying future energy needs. Today, experts see nuclear energy as a means of producing energy that is not cost-effective. In the first half of the 21st century, however, nuclear power could play a major role given the growing world demand for energy, which is expected to rise dramatically due in particular to developing countries. Nuclear power represents an alternative to the technologies based on carbon dioxide, which damage the climate. Therefore, access to civilian nuclear technology will become even more important for developing countries in the future and should, according to some experts, even be encouraged to protect the environment.³⁸ It cannot be overlooked that in developing countries, in contrast to the industrialized countries, nuclear energy is often still seen as a modern technology, the harnessing of which is essential.

While the NPT distinguishes only between peaceful and military uses of nuclear energy, it today seems

³⁸ “The Future of Nuclear Power, An Interdisciplinary MIT Study,” (Boston: Massachusetts Institute of Technology, 2003), www.web.mit.edu/nuclearpower. There, a scenario is developed suggesting that nuclear energy’s share of the worldwide electricity market could rise from 17 percent in 2000 to 19 percent in 2050. In the developing countries, it could go from 2 percent to 11 percent.

necessary to consider the civilian use of nuclear energy in a more differentiated way. From this point of view, operating a light water reactor is relatively unproblematic.³⁹ So long as a country is under IAEA control, plutonium can hardly be secretly diverted from light water reactors. In the event a country operating a light water reactor renounces its obligations, it is in principle possible to divert fuel, but it would be very costly. Furthermore, without a domestic capability for enriching uranium and producing fuel rods, such efforts would amount to nothing more than a limited operation in terms of scope.⁴⁰ To reduce the possibility of a reactor being diverted from its original purpose for military use, the United States is trying to design proliferation resistant reactor models. Their fuel rods would be used for up to 15 years and the nuclear components completely sealed for the duration of operation. (At present, fuel rods have a life span of about three years.) Whether such reactors will ever go into operation seems doubtful to many experts.⁴¹

While light water reactors can only be used for military purposes with difficulty, the risk of proliferation

³⁹ Such facilities operate with plutonium, but this can only be effectively used for military purposes if the reactor is repeatedly shut down completely after short periods of operation over a period of several weeks. The fuel rods, which during operation are completely surrounded by a reactor vessel filled with steam at a temperature of more than 250°C, can only be removed when the reactor is shut down and the plutonium chemically separated. The longer plutonium is in operation in a reactor, the less suitable it is for building atomic bombs.

⁴⁰ Because opening the reactor would release large amounts of radioactive xenons, it is probable that this would be detected by the CTBTO, the organization in charge of overseeing the Comprehensive Nuclear Test Ban Treaty.

⁴¹ The longer the period of operation, the more difficult it is to control. Furthermore, in operating such reactors, presumably considerable material problems arise due to the lengthy exposure to radiation. I thank Joachim Schulze and Wolfgang Rosenstock of the Fraunhofer-Institut für Naturwissenschaftlich-Technische Trendanalyse in Euskirchen for the information about the operation of light water reactors and assessment of the U.S. plans to develop proliferation-resistant reactor types.

increases drastically if a country also mines (or imports) uranium, prepares it in its own facilities, and enriches it for the production of fuel rods. For fuel rods, uranium has to be enriched by at least 20 percent, while for nuclear weapons it has to be enriched by at least 80 percent. Without any noticeable technical adjustment, both goals can be pursued in enrichment facilities that are in principle identical. The crucial hurdle for a state seeking to build a nuclear weapon with uranium is gaining access to enriched uranium.⁴² In other words, once a state acquires the capability to enrich uranium, it has obtained the necessary technology to produce nuclear weapons.

At present, only a few states have enrichment technology. The United States, Russia, France, Japan, Pakistan, and Argentina operate uranium enrichment facilities under national control. In addition, there is the British-German-Dutch consortium URENCO, which has facilities in each of the three participating countries. Further, Iran is building such a facility, which, according to its original plans, was to begin production in the spring of 2005. Brazil, which already has such a pilot program, intends to begin operating a uranium enrichment facility before the end of 2004. The situation in North Korea is unclear. While the U.S. intelligence community assumes the existence of at least one such facility there, Pyongyang has never admitted it. Before the 1990-91 Gulf War, Iraq tried three different methods to acquire the capacity for enriching uranium. The South African nuclear weapons project was also based on uranium enrichment. The facilities Pretoria built for this project have not been operational for a long time.

In his policy speech of February 11, 2004, U.S. President Bush proposed fundamentally limiting access to uranium enrichment technology as well as reprocessing technology (with which plutonium from used fuel rods can be diverted). The world's leading exporters of nuclear technology should make sure that those countries that want to operate nuclear reactors for civilian purposes have access to secure and financially reasonable nuclear fuel so long as they renounce operating their own enrichment and reprocessing facilities. States that are really interested in the civilian use of nuclear energy, said Bush, have no need for enrichment and reprocessing capacities. Therefore, in the future, the equipment should only be delivered to

42 For the second path, building a bomb using plutonium, reprocessing technology is needed.

those countries that already have fully functioning enrichment and reprocessing facilities.⁴³

Not only does the Republican Bush administration consider such ideas. They are to be found among a wide array of Democrats. For example, in a draft U.S. foreign policy for a Democratic president, Samuel R. Berger, President Clinton's former national security adviser, declared this year that the United States "should press for a new bargain" within the NPT. Leading western industrial countries, he wrote, should help non-nuclear states build civilian nuclear industries and provide them with fuel, while at the same time retaining control over the complete nuclear fuel cycle, i.e. enrichment and reprocessing.⁴⁴ These ideas correspond with the policy of the Bush administration as well as proposals made by other former members of the Clinton administration who even discussed the possibility of imposing sanctions on states that strived to acquire the complete nuclear fuel cycle contrary to U.S. policy.⁴⁵ It is therefore possible that a Democratic administration under President John Kerry would follow a line similar to Bush's.

Would such a policy have a chance of being successful? Could it be legally codified? At first glance, even from the European perspective, there is something to say for the Bush proposals. The great majority of states has no interest in developing nuclear weapons and is interested in effective measures to prevent the spread of such weapons. In addition, those states would have to welcome the secured access to nuclear fuel. The present producers of enriched uranium also have enough capacity to satisfy demand.

However, the strategy advocated by President Bush would probably not meet with success. It will hardly be possible to reach consensus for the idea of creating of a cartel—the inevitable outcome of the president's proposal—that could ultimately determine the price for nuclear fuel. The western industrialized states not engaged in uranium enrichment are unwilling to support such a cartel. This could already be seen at the

43 Remarks by the President of the United States, George W. Bush, on Weapons of Mass Destruction Proliferation, Fort Lesley J. McNair, National Defense University, Washington, D.C., February 11, 2004, <www.whitehouse.gov/news/releases/2004/02/20040211-4.html>.

44 Samuel R. Berger, "Foreign Policy for a Democratic President," *Foreign Affairs*, vol. 83, no. 3 (2004), pp. 47-63, here p. 56.

45 Ashton B. Carter, Arnold Kanter, William J. Perry, and Brent Scowcroft, "Mend the Nonproliferation Treaty, But Keep It," *International Herald Tribune*, December 23, 2003, p. 9.

2004 G-8 Summit on Sea Island, where the Bush administration was unable to push through its ideas.⁴⁶ President Bush's proposals will come up against even stiffer opposition from those developing countries that see such a proposal as yet another condescending policy on the part of the industrialized countries. It is also questionable whether the United States would really guarantee access to nuclear fuel to every state that renounced having its own uranium enrichment program. The example of Iran shows, at least according to official Iranian arguments, that continuing U.S. criticism of Russian-Iranian nuclear cooperation was what moved Tehran to build its own enrichment capacity.

Furthermore, the question of a possible renunciation of uranium enrichment on the part of the overwhelming majority of NPT members has to be seen in the context of the whole development of this treaty. For a start, it would not be understood why some states, such as Brazil, were still granted the right to enrich uranium, while others who were not so far along in their development were not. For another, the question would be posed why the nuclear have-nots—against the backdrop of the nuclear weapons states' insufficiently redeemed disarmament pledge and the strains already placed on the NPT regime by the non-membership of Israel, India, and Pakistan—should have to put up with additional limitations without any visible compensation.

So it cannot be assumed that there will be general approval for President Bush's proposals. In the wake of their realization, another club would emerge alongside the club of five recognized nuclear powers, this one consisting of states with the right to enrich uranium. The effect would be to double the discrimination already enshrined in the NPT. Furthermore, Pakistan—one of those countries that stubbornly refuse to join the NPT as a non-nuclear weapons state (not allowing for the fact that Pakistani scientists have already contributed to the spread of enrichment technology by delivering centrifuges to Iran, Libya, and probably North Korea)—would be accepted into this elite club. And finally, there is Brazil, which at present is not under direct suspicion of wanting to produce

⁴⁶ In the G-8 Action Plan on Nonproliferation, the participating countries declared themselves merely ready to refrain for a year from transferring any equipment for uranium enrichment or reprocessing to states lacking such technology so far. See G8 Action Plan on Nonproliferation, <www.g8usa.gov/d_060904d.htm>.

nuclear weapons, but which will not allow IAEA to inspect in full the uranium enrichment facility under construction and refuses to adopt the modern verification procedures.⁴⁷ Why should Brazil be allowed to quickly join the uranium enrichment club, while other countries remain outside its ranks?

The considerations put forward by the United States seem too unsound to be put into praxis. But there is another way to prevent the misuse of uranium enrichment facilities for military purposes: They would have to be internationalized. IAEA Director General ElBaradei is already arguing along these lines,⁴⁸ picking up on a debate that, starting in the United States, was held in the 1970s.

At the heart of the ElBaradei proposal is the idea of putting all uranium enrichment facilities under international control. To that end, it would be necessary to create a number of regional centers involving several states so that none of them would have the opportunity to misuse facilities producing low-grade enriched uranium, as used in fuel rods, for the production of high grade enriched uranium, as used for military purposes.

ElBaradei's model is clearly the British-Dutch-German consortium URENCO. This company operates enrichment facilities for peaceful purposes in Capenhurst (Great Britain), Almelo (Netherlands), and Gronau (Germany). None of these three countries has national control over these facilities. Two motives were of prime importance in establishing this consortium: For one, the time, energy, and expense involved in operating advanced gas ultracentrifuges, which all three countries were trying to develop independently of one another, needed to be consolidated. For another, the consortium was to guarantee Germany's permanent renunciation of nuclear weapons. URENCO today is a global corporation. The advanced gas ultracentrifuge method that it uses consumes much less energy than, for example, the gas diffusion technique still used in the United States.

⁴⁷ Peter Slevin, "Brazil Shielding Uranium Facility," *Washington Post*, April 4, 2004, p. A01.

⁴⁸ ElBaradei has given a series of interviews on this subject, cf. "Towards a Safer World," *The Economist*, October 18, 2003, pp. 43–44; "Curbing Nuclear Proliferation," *Arms Control Today*, vol. 33, no. 9 (November 2003), pp. 3–6; "Wir laufen auf den Abgrund zu, und die Nuklearmächte müssen umdenken," *Neue Zürcher Zeitung am Sonntag*, November 30, 2003, p. 6; "Sanctions Worked," *Newsweek*, February 9, 2004, p. 24.

URENCO can therefore offer low-grade enriched uranium for fuel rods at reasonable prices.

This, however, is exactly the point where the problems begin: May other countries take part in URENCO? This consortium is after all just as interested in protecting its industrial secrets and guaranteeing its profitability. This goes not just for URENCO. Every corporation that controls a part of the profitable technology involved in enriching uranium has to be concerned about protecting its trade secrets.⁴⁹ Thus, there are economic limits to strategies for internationalizing uranium enrichment.

Also, internationalization would end up leading exactly to the proliferation of this technology, even for use in weapons. And this is exactly what is to be prevented. Just what kind of repercussions cooperation with an international corporation can have is seen in the case of Abdul Q. Khan, the “father of the Pakistani bomb.” In the 1970s, Khan worked as an engineer and translator at URENCO and probably intended from the start to steal blueprints for the consortium’s uranium enrichment technology for use in the Pakistani nuclear weapons program. Today, as a rule, URENCO employs only workers from one of three countries participating in the consortium.

Theoretically, it seems conceivable to secure international participation only at the management level. Those countries that engage in an international consortium this way could be relatively sure of gaining access to enriched uranium for use in nuclear reactors. Nevertheless, such deliveries would require a majority decision by shareholders. One could try to keep the countries involved in the management away from the technical side of operations, but it is questionable whether this would succeed. At present, no experience has been gained with this form of participation.

Moreover, international cooperation in such a sensitive field as uranium enrichment requires a high degree of trust. This may exist between London, Den Haag, and Berlin, but this is not the case when it comes to Tehran, Cairo, and Algiers, to say nothing of Tel Aviv. For the time being, the impetus for multi-

national cooperation in uranium enrichment at the regional level would probably falter on exactly this point: the absence of a minimal degree of trust wherever there is a threat of nuclear weapons proliferation.

So, if it is right to limit access to uranium enrichment technology, but neither building a cartel nor internationalizing enrichment facilities appears to be practical, what kind of solution is there? There remains only the possibility of seeking individual answers for each country and convincing it to give up its enrichment capacities and reprocessing capabilities. This is possibly more promising for two reasons: First, because uranium enrichment is a very costly process in terms of time, energy, and money, and because the danger that enrichment facilities would be misused for weapons exists in a very small number of states, it is not absolutely necessary to arrive at a basic arrangement for all NPT members. Second, because solutions would be found on a case-by-case basis, they could contain various incentives specific to a particular country. First and foremost, such a strategy should be pursued in the case of countries in especially conflict prone and proliferation-relevant regions whose weapons programs as a whole point to their wanting at least to keep the nuclear weapons option open. This is approximately the case when a country not only strives to acquire the complete nuclear fuel cycle but also pursues programs for long-range missiles and other delivery systems.

In two cases, this approach has already been tried: in North Korea and in Iran. The 1994 Agreed Framework for North Korea contained on the one hand Pyongyang’s giving up the full nuclear fuel cycle and the dismantling of its graphite-moderated nuclear reactor and, on the other hand, a pledge to provide two light-water nuclear reactors, which would be financed by an international consortium called the Korean Peninsula Energy Development Organization (KEDO). At its core, this accord involved the exchange of a weapons capable nuclear program for assistance in an undertaking that was far less susceptible to proliferation but, from North Korea’s point of view, important for guaranteeing that country’s energy needs. The arrangement failed for the most different of reasons. On the one hand, the North Koreans presumably never intended to subject their earlier nuclear program to inspections and took another road to building a uranium enrichment program. On the other hand, the United States wanted to buy time and hoped the dictatorial regime in Pyongyang would

⁴⁹ This is also seen in the example of Brazil. The uranium enrichment facility under construction there is supposed to use domestically produced centrifuges. Brazil insists on keeping secret its method, which is to be used solely for civilian purposes. Thus the country’s disgruntlement toward the IAEA, Josef Oehrlein, “Alle Atomverträge werden eingehalten,” *Frankfurter Allgemeine Zeitung*, April 8, 2004, p. 8.

collapse before the planned delivery of the light water reactors.⁵⁰

While North Korea represents a negative example, at least an interim success has been achieved in the case of Iran. A part of the declaration that was signed by Iran, Germany, France, and Great Britain in Tehran is the voluntary and temporary suspension of its uranium enrichment activity. While there have been discussions about what exactly this pledge meant, for example, whether it concerned the further construction of centrifuges or only a cessation in experiments related to uranium enrichment. The Iranian leadership has also made it clear that it did not see the renunciation as long-term, and in June 2004, it even let the Europeans know that the construction of centrifuges would be continued. But the declaration at least created a starting point for possibly ending the Iranian uranium enrichment program completely. What would be most important for successfully implementing this plan, as pursued by the Europeans, would be determining which incentives it has to offer Iran. The declaration speaks only vaguely of improved access to modern technology.⁵¹ From the European perspective, however, this can only be guaranteed if Iran fully implements the modern verification procedures.

The strategy of incentives needs to be developed further, and through the EU countries. These would ultimately have to show a willingness to support states pursuing a nuclear program using light water reactors and to guarantee them access to nuclear fuel and the repatriation of used fuel rods. Furthermore, modern security technology must be placed at Iran's disposal and the prospect of improved economic cooperation must be held out to Tehran. For a country such as Iran, that would have to amount to a dual incentive: first, because Tehran would probably prefer western technology to the Russian know-how it is working with at present, and second, because economic cooperation with Europe would probably be

very lucrative for Iran and would benefit the further development of the Iranian economy and society. Otherwise, if Tehran continues its enrichment program, the European Union could finally terminate the presently suspended negotiations for a trade and cooperation agreement.

Whether such a strategy of incentives will ultimately be successful in the case of Iran is at this point impossible to say. Should it be successful, there is nothing to argue against using this approach in other cases. Even if this strategy fails in the case of Iran, it could still be tried. In any event, the attempt to reach individual solutions individually tailored to each country seems to have a greater chance of success than a strategy that strives for a global arrangement for all NPT members.

⁵⁰ On the history of the Agreed Framework, see Joseph Cirincione with Jon B. Wolfsthal and Miriam Rajkumar, *Deadly Arsenals. Tracking Weapons of Mass Destruction* (Washington, D.C.: Carnegie Endowment for International Peace, 2002), pp. 246f.

⁵¹ Oliver Thränert, "Stopping the Unstoppable? European Efforts to Prevent an Iranian Bomb," in: Johannes Reissner and Eugene Whitlock (eds.), *Iran and Its Neighbors: Diverging Views on a Strategic Region*, vol. II (Berlin: Stiftung Wissenschaft und Politik, 2004), pp. 43-47.

The Withdrawal Clause

The possibility of NPT members to withdraw from the treaty according to Article X with three months notice and reference to “extraordinary events, related to the subject matter of this Treaty, [that] have jeopardized the supreme interests of its country” represents another serious problem for the NPT’s future, especially in connection with the question of future technology transfers. Until now, only one state, North Korea, has tried to withdraw from the NPT. Whether Pyongyang’s withdrawal is effective has yet to be determined. Since the option of withdrawing is sometimes openly discussed in part in other NPT member states, such as Iran, there is a need to address Article X. If states are permitted just to turn their back on the NPT without further consequences, lasting damage would be inflicted on the value of the non-proliferation norm constituted by the treaty. This is all the more so if the state seeking to withdraw has violated the treaty before giving notice of its intention.

Unfortunately, the example of North Korea shows how hard the international community finds it to deal with an NPT partner desiring to leave the treaty. In March 1993, Pyongyang withdrew from the NPT without the UN Security Council or the NPT member states raising any objection. It was left up to the United States, through the Agreed Framework, to stop North Korea from leaving the treaty. After this arrangement collapsed, North Korea again withdrew from the NPT on January 9, 2003. So after the period of notice of three months had passed, the withdrawal would have taken effect on April 10, 2003. When the NPT members met on April 28, 2003, for their annual preparatory committee for the 2005 Review Conference, the question of North Korea’s NPT membership was discussed but left unresolved.⁵²

⁵² At the conference, China and a number of bloc-free states did not wish to see the right to withdraw of a single NPT member state called into question as a matter of principle. Others, including Germany, insisted that North Korea’s withdrawal had not gone into effect because only the permanent members of the UN Security Council were informed of it and not all treaty states as required in Article X of the NPT. In addition, North Korea—such was the argument of several delegations, among them the French and British, violated

How should the NPT partners handle the withdrawal clause in the future? The simplest possibility, namely to do away with it by changing the treaty, something ElBaradei has brought into play, is unrealistic as an option.⁵³ For that to happen, consensus would have to be reached among the treaty states. As the treatment of North Korea shows, many NPT members are unwilling to call into question the right to withdraw. Other non-proliferation treaties, such as chemical or biological weapons conventions, contain withdrawal clauses. This makes it clear that such agreements are only acceptable to states if, under extraordinary conditions affecting national security, they can leave it again.

Basically, every state is free to withdraw from the NPT with reference to changed circumstances surrounding their national security. This does not mean, however, that all of the obligations that go with NPT membership automatically expire. It also does not mean that the withdrawal threshold has to remain as low as it is in the treaty. Measures could be taken, for example, to raise this threshold beyond the obligation of giving notice. Room for maneuver exists on two

the NPT before its withdrawal and could not for that reason simply leave the treaty. The withdrawal provisions after all were not inserted to create a loophole for those who violate the treaty to use so they can leave the treaty without any further consequences. It was inserted to make withdrawal from the treaty possible in extraordinary circumstances concerning the national security of a state. Finally, it was been argued that a possible return of North Korea to the NPT regime would certainly be facilitated if only repeal of the desire to withdraw were necessary and not formal accession to the treaty. On the basis of this unmistakable position of the delegations in attendance, the chairman of the negotiations, László Molnar (Hungary), decided to take North Korea’s nameplate into his care. It was kept in his desk and so remained in the conference room. Molnar also issued a statement regarding the matter. The issue of North Korea’s membership in the NPT did not come up again in the course of that session of the preparatory committee. The chairman of the preparatory committee in 2004, Sudjadhan Parnohadinigrat (Indonesia), chose the same procedure as his predecessor. ⁵³ Mohamed ElBaradei, “Saving Ourselves from Self-Destruction,” *New York Times*, February 12, 2004, p. 37.

levels: on that of the UN Security Council and that of the NPT members.

In principle, the UN Security Council can take on any case of withdrawal. After all, on the occasion of its first meeting at the level of heads of state and government in 1992, the UN's highest body passed a declaration in which the proliferation of NBC weapons was said to present a threat to international peace and security.⁵⁴ Therefore, the UN Security Council could impose certain conditions on an NPT member trying to leave the treaty regime. It could, for example, demand that the inspection measures, which would no longer have any legal basis after withdrawal, are nevertheless continued.⁵⁵ However, the inspectors would have to perform their duties under more difficult if not hostile conditions. It is therefore more than questionable whether such measures could achieve their aim of stopping a nuclear weapons program in a country that has left the NPT. After all, the inspectors are ultimately reliant on a minimal level of cooperation on the part of the state being inspected. Besides, experience gained from the North Korean attempts to withdraw from the NPT showed that the Security Council simply did not do anything about this case. It even permitted the expulsion of IAEA inspectors.

The UN Security Council could also decide that states desiring to leave the NPT have to repatriate nuclear facilities and fissile material to their supplier countries. It could refer to Article III of the NPT, which states that the provision of fissile material to non-nuclear weapons treaty states is only permissible if this material is subject to IAEA safeguard measures upon arrival in the receiving country. Apart from that, there is the possibility of referring to Article XII of the IAEA statutes. There, the Board of Governors is granted the right to demand the repatriation of material and

equipment if it can no longer be guaranteed that these are not being misused for military purposes.

The implementation of UN Security Council demands, however, would entail considerable difficulties. As the case of North Korea has shown, this highest body, due to its members' different interests, is not in the position to make demands on North Korea, to say nothing of implementing them. Moreover, it is presumed by the United States and other Western countries that there are uranium enrichment facilities in North Korea whose existence Pyongyang has yet to admit. Demanding the repatriation of material and equipment would have to contain an exact definition of what is to be given back. Even in Washington, however, neither the exact location nor the exact scope of the uranium enrichment facilities in North Korea is known.⁵⁶ Ultimately, the UN Security Council would have to be ready to implement its demands for repatriating equipment and material by military means. On account of the differing interests of its members as well as the enormous costs connected with military intervention this can only be assumed in the rarest of cases. In North Korea's, the option has been ruled out for the time being.

It is not only up to the UN Security Council alone to consider the future of the withdrawal clause. The NPT member states can do so as well. An essential prerequisite for this would be a decision at the 2005 NPT Review Conference asserting that North Korea is still seen as a treaty state. Germany should without a doubt continue to push for such a decision. Unfortunately, in light of the course and results of the preparatory committees so far, there is little to suggest that the delegates will pursue this suggestion. Thus, possible measures against other states desiring to leave the NPT will lack credibility from the start. However, this does not have to prevent the review conference from making basic recommendations on how to deal with the withdrawal clause in the Article X in the future.

For one, the conference could determine that those states that have violated the NPT or whose compliance with the treaty appears dubious after the conclusion and analysis of IAEA inspections may indeed withdraw from the treaty but would not be absolved of their responsibility for past misconduct or treaty non-compliance. This would guarantee that those who argue

⁵⁴ This is Mohamed ElBaradei's argument in his interview with *Arms Control Today*.

⁵⁵ The link between the NPT and the safeguards agreement goes for the verification measures that were decided after the NPT went into effect, i.e. the traditional safeguards according to INFCIRC/153 as well as the improved measures of the Additional Protocol according to INFCIRC/540. It does not apply, however, to the old measures contained in INFCIRC/66. These refer only to certain deliveries or facilities and are based on tripartite agreements concluded between the supplier country, the recipient country, and the IAEA. Such agreements still play a role today, for example, for some facilities in India.

⁵⁶ David E. Sanger, "U.S. Widens View of Pakistan Link to Korean Arms," *New York Times*, March 14, 2004, p. 1.

on behalf of possible NPT withdrawal, such as Iran, could not assume that doing so would solve the problem of treaty compliance *ad acta*. In practice, questions of procedure would then arise, in this case *vis-à-vis* Iran. Such a decision at the review conference would at least send an important signal and should therefore be supported by the German delegation.

The 2005 Review Conference could also emphasize in its final report that states leaving the NPT have to repatriate nuclear facilities or material to the respective supplier country. Furthermore, the conference could also recommend the continuation of IAEA safeguard measures in countries that leave the NPT. The reasons for doing so correspond to the aforementioned considerations regarding the measures the UN Security Council could take when a country tries to withdraw from the treaty. Even when the practical implementation of the resolutions of the review conference encounter significant problems, for reasons also already described above, Germany should support such a decision. This would make clear to the NPT member states that treaty withdrawal on their part would not be seen as a largely inconsequential procedure.

It would be even more important, however, to raise the withdrawal threshold. In the run-up to the 2005 Review Conference, Germany has already given consideration to ideas along these lines and proposed that states seeking to leave the NPT have to justify this desire before a special conference of treaty members to be called immediately. This would considerably raise the bar for leaving the treaty. A withdrawal given in writing without any specific explanation would no longer suffice. Rather, the state in question would have to face the questions and objections of all the other treaty states in an open debate. Should changes in a state's security policy situation be decisive for its desire to withdraw, measures could be discussed and taken at the special conference to meet the concerns so that the state in question reconsiders its intention to withdraw.⁵⁷

However, it is not guaranteed from the start that such a special conference would go according to the expectations of those who were trying to prevent a withdrawal from the NPT. Were Iran, for example, to

leave the NPT, it could very well make a credible case for a changed security policy environment: the presence of U.S. forces in the immediate vicinity in Iraq, Pakistan, and several Central Asian republics of the former Soviet Union. It should not be excluded that several non-aligned countries would embrace Iran's arguments and approve its NPT withdrawal or at least not oppose it. On the other hand, the existence of the NPT and the norm of nuclear non-proliferation constitute such a high good for most states that they could hardly allow a withdrawal from the treaty to be more or less certified by a special conference and the further existence of the entire treaty itself to be called into question as a result. Even if they were sympathetic to the party seeking to withdraw from the treaty, most states would probably at least extricate themselves from the affair by abstaining. In particular, states such as Iran, which have not complied with its IAEA safeguards agreement in the past, would have a hard time winning over a majority of members to its cause.

But how and what would such a special conference ultimately decide? It would be worth striving for a "consensus minus one" mechanism, especially if in such an essential question voting is ruled out from the start. The only goal can be to persuade the state seeking to withdraw to give up its intention. It could do so based on discussions held in the course of the conference, above all if concessions regarding the changed security situation were offered. Corresponding activities, such as confidence building measures, could be decided at the conference's final report. This would be a strategy of incentives. On the other hand, a special conference could threaten to refer the matter to the UN Security Council, which could then take further measures, perhaps even impose sanctions.

The course and results of a NPT special conference are largely unpredictable. But alone implementing the possibility would in any event raise the withdrawal threshold. For that reason, Germany should strive for a resolution at the 2005 Review Conference that makes such a special conference mandatory in the event a country expresses the desire to withdraw from the NPT.

⁵⁷ "Strengthening the NPT against Withdrawal and Non-Compliance. Suggestions for the Establishment of Procedures and Mechanisms," a working paper submitted by Germany at the Preparatory Conference in New York on April 29, 2004, NPT/Conf.2005/PC.III/WP.15.

Treaty Compliance

One of the NPT regime's greatest challenges is securing compliance. What should be done if a treaty member violates an arms control agreement? In such a case, decisive measures are necessary. Not only to impede proliferation in a specific country but also to make clear to other potential violators that such conduct will have consequences.

The NPT itself contains no guidance on how to proceed in the event it is violated. According to Article III, however, the non-nuclear weapons states are obliged to conclude a safeguards agreement with the IAEA so that the agency can convince itself at any time that the peaceful use of nuclear energy is not being misused for military purposes. The Board of Governors, according to Article XII of the IAEA statutes can take measures against a signatory in violation of the treaty. Among them is reporting the treaty violation to the UN Security Council as well as all of the UN member states. Beyond that, the IAEA can suspend its cooperation with the member country in question and withdraw the privileges and rights of membership. Finally, it is also possible to demand the repatriation of all of the materials and equipment that was put at the disposal of the NPT party violating the treaty.

The most important body for taking measures against a state that has violated the treaty is the UN Security Council. It can impose various sanctions up to military measures. However, two fundamental problems arise here. For one, the five permanent Security Council members are also the five legitimate nuclear powers defined by the NPT. From this arises a certain problem of acceptance if it is precisely these states that want to take measures against non-nuclear weapons states. This is all the more so when the impression exists that the nuclear weapons states have yet to make good on or satisfactorily fulfill the NPT's disarmament pledge. Even more serious is the fact that the five permanent members of the Security Council—just like all of the other states—pursue other political goals alongside nuclear non-proliferation, and these may at times seem more important to them. Questions of proliferation in particular often touch on security problems that are central to the five permanent Security Council members. Since each of them has veto power, each is in the position to thwart any

measures to taken against a state that violates the NPT. Against this backdrop, it is unlikely that the permanent Security Council members would neglect their national interests to assume the role of "protector of the NPT."

On the other hand, there can be no doubt that the Security Council takes the issue of NBC proliferation very seriously. After the UN Security Council held its first meeting at the level of heads of state and government on January 31, 1992, the council's president issued a statement describing the Security Council's responsibility for maintaining international peace and security. The statement also says, *inter alia*, that the proliferation of weapons of mass destruction presents a threat to international peace and security. In the nuclear field, the significance of the NPT was stressed and the necessity of implementing IAEA safeguards emphasized. The members of the Security Council, the statement said, would take appropriate measures should the IAEA notify it of a treaty member's non-compliance with the NPT.⁵⁸ This declaration, however, had no legally binding effect.⁵⁹

Just how unable the UN Security Council was to act, however, was seen not long after this declaration was issued. On April 1, 1993, the IAEA determined that North Korea was not complying with its safeguards agreement and referred the case to the Security Council. This was the first time that the Security Council was convened this way. The council, however, revealed itself as divided and indecisive, not least because China refused to impose sanctions on North Korea. Ultimately, it was left to the United States to settle the

⁵⁸ UN Security Council, "Note by the President," S/23500, January 31, 1992.

⁵⁹ For U.S. President Bush, the declaration served to legitimize the Proliferation Security Initiative, which he called into being on May 31, 2003 in a speech in Cracow, and which has as its goal preventing the transport of NBC weapons and their components as well as missiles and other means of delivery. On April 28, 2004, the UN Security Council unanimously passed Resolution 1540, which endorsed the PSI without mentioning it explicitly. The resolution calls on all states to prevent access to NBC weapons and their component parts by means of effectively implementing national legislation.

case with the Agreed Framework, which was signed in October 1994.

After an American delegation in November 2002 accused North Korea of having a secret uranium enrichment program, the situation escalated again. In December 2002, Pyongyang began dismantling the cameras that the IAEA had installed in nuclear facilities and expelled the agency's remaining inspectors. The IAEA again reported to the UN Security Council that North Korea was no longer meeting its obligations under its safeguards agreement, and that the agency was therefore no longer in the situation to monitor North Korea's nuclear activities. With that, the Security Council formally took up the matter for the first time, however, without taking any measures against North Korea.⁶⁰

Nevertheless, it was possible to integrate North Korea into new multilateral negotiations. In August 2003, the "Six-Party Talks" got underway with the United States, China, Russia, Japan, and South Korea as well as North Korea participating. Washington's goal is to convince Pyongyang to give up its nuclear weapons program completely, irreversibly, and verifiably. North Korea, in its countermove, is only

⁶⁰ This was, for one, due to North Korea's aggressive behavior. Pyongyang let it be known that it would view Security Council sanctions as a declaration of war. This must have seemed all the more threatening, since it is possible that North Korea already has simple nuclear weapons. For another, China was not interested in the highest UN body looking into the issue further. Beijing would like to prevent the Korean Peninsula from going nuclear. At the same, however, it would like to avoid destabilizing the North Korean regime, since it fears a flood of refugees in such an event. Furthermore, China sees North Korea as a geo-strategic buffer zone that prevents a direct confrontation with American forces on the Korean-Chinese border, which in the event of a reunification of the Koreas would be expected. A military confrontation between North Korea on the one hand and a possible international coalition on the other hand cannot be in China's interest, because this would increase Washington's military presence in the region. Russia also seeks to avoid such a situation. In view of a looming Chinese veto in the event of a Security Council resolution containing sanctions, the United States, which perhaps would have been willing to resort to such action, gave up this intention. Presumably, Washington was congenial to this development inasmuch as military options against North Korea were not available at a price that would have been acceptable to the West and a confrontation course could have thus become very dangerous. The Security Council once again proved itself to be incapable of taking action against North Korea. Cf. Gary Samore, "The Korean Nuclear Crisis," in: *Survival*, vol. 45, no. 1 (Spring 2003), pp. 7-24.

willing to freeze its nuclear activities and demands from the United States a treaty of non-aggression ratified by the U.S. Congress, diplomatic relations, and development aid. Even if the convening of these talks is in and of itself seen by some observers as a success, it is still disappointing that North Korea has not been called to account for its flagrant violation of the NPT.⁶¹ The North Korean problem will be handled for the time being outside the UN Security Council.

The further development of the case of North Korea, a country that joined the NPT but was never willing to comply with its rules, is of crucial importance to the NPT's future. At present, the North Korean regime is taking a position of nuclear ambiguity. It hints that it already has nuclear weapons, but does not confirm it officially. Should this country get by without NPT community or the UN Security Council taking any effective measures against Pyongyang, other NPT members could reach the conclusion that they merely have to succeed in advancing their nuclear plans to the point that no state dares do anything against them.

It can be argued that the United States found an elegant way to put North Korea under pressure by initiating the Proliferation Security Initiative in May 2003, thus bypassing the UN Security Council. This initiative has as its goal, improving international cooperation and using the responsible implementation of national export controls to interdict the transportation of NBC weapons and their components as well as missiles and other long-range delivery systems to and from states where the threat of proliferation is critical. The focus is particularly on North Korea. Since economic sanctions against the already hopelessly impoverished country would be less than promising and trade in missiles and other weapons represents one of the most important sources of income for the regime, the PSI should hit North Korea severely.⁶²

However, the question arises whether the Security Council's inability to act in the case of North Korea could be overcome by a decisive reform of this organ. It hardly seems acceptable to exclude this highest organ of the UN from the all-important question of the NPT's future. Is there a possibility to restructure

⁶¹ Cf. Kay Möller, "Nordkorea—der verschleppte Konflikt," SWP-Aktuell 32/03 (Berlin: Stiftung Wissenschaft und Politik, 2003).

⁶² Cf. Christian Schaller, "Die Unterbindung des Seetransports von Massenvernichtungswaffen. Völkerrechtliche Aspekte der 'Proliferation Security Initiative,'" Studie 19/04, (Berlin: Stiftung Wissenschaft und Politik, 2004).

the Security Council's rules of making decisions so that it would no longer be possible for individual permanent members to block action by vetoing it?

This problem, for the time being, is subordinate to another question: When does one go to the Security Council? This question has to be answered by the IAEA Board of Governors. Here it should be observed that violations of the treaty occur at different stages. Those 40 plus NPT countries that have yet to conclude a safeguard agreement with the IAEA are acting contrary to the treaty, but the Board of Governors has taken no measures against them so far. Often the countries concerned are not engaged in any nuclear activity, but Saudi Arabia is also among them. Nuclear deliveries to countries where the implementation of safeguard measures were insufficiently guaranteed also presented a problem in the past, but here too the Board of Governors has not referred any case to the UN Security Council. The most problematic cases concern states that pursue nuclear projects without complying with their safeguards agreements. But even here there are different stages, and the Board of Governors has to ask in each case whether the transgressions are so dramatic that they justify referring the case to the UN Security Council. In the case of North Korea, the IAEA's highest authority answered in the affirmative, while it has not done so with regard to Iran.⁶³ Once the Board of Governors refers a case of treaty violation to the UN Security Council, the latter must again study the gravity and significance of the transgression and hold consultations as to what the proper measures would be to remedy it. The case of North Korea shows that at this point the national interests of the five permanent members will probably prevent any action from being taken. Neither China nor Russia, nor in the end the United States, were willing to take decisive action against North Korea in the form of sanctions, to say nothing of military measures.

Apart from that, the question arises which steps should the UN Security Council initiate. In the past, sanctions have proven to be less effective—as in Iraq.

⁶³ Iran failed to declare the import of uranium, its reprocessing, and the facilities where this took place, but a majority of members of the Board of Governors did not see this as so severe that it justified referring the matter to the UN Security Council—particularly since Tehran vowed improvement, declared its willingness to implement the modern verification procedures, and finally even voluntarily suspended uranium enrichment temporarily.

Applied to a country such as North Korea, they would probably have almost no effect. A discussion of the threat or use of military force against an NPT signatory violating the treaty would probably lead to numerous rejections in the Security Council, since the national interests of the permanent (and non-permanent) members would probably not be so that they would support such action unanimously. Iraq and the debate on the steps to choose from have made this very clear. The dealings with North Korea have also illustrated this problem.

Could the tension relationship between the UN Security Council's recognition that the spread of NBC weapons represents a threat to world peace and the national interests of its five permanent members, who often prevent intervention against a party in violation of the NPT be resolved by the permanent council members reaching a gentlemen's agreement to withhold their veto when severe violations of the NPT are at stake? With regard to humanitarian intervention, there are signs of such a debate. Where national interests play no role for the permanent council members, they could voluntarily practice withholding their veto.⁶⁴ But it is questionable as to whether the permanent members would allow their veto power to be watered down. As a rule, issues surrounding the proliferation of NBC weapons concern the national interests of the permanent Security Council members, because they take place in what are for them important regions. Thus, calling into question their veto power especially in such cases will probably be unacceptable. Thus, the danger of action being blocked in the UN Security Council will continue to exist.

For the time being, the world will have to live with the insecurity of whether that highest decision-making body, the UN Security Council, passes measures against states that violate the NPT or other non-proliferation agreements.

⁶⁴ Thomas G. Weiss, "The Illusion of UN Security Council Reform," *The Washington Quarterly*, vol. 26, no. 4 (Autumn 2003), pp. 147–161. A decision to refrain from using veto power would not be legally binding. The permanent members of the UN Security Council cannot a priori renounce their veto power in legally effective form.

Perspectives

The NPT is in a deep crisis that cannot be overcome quickly. Three areas have shown themselves to be particularly problematic: universality, the disarmament pledge, and treaty compliance.

The fact that three nuclear weapons states—India, Pakistan, and Israel—remain outside the NPT is a heavy burden on the treaty. None of these three have made any move to suggest they would give up their nuclear weapons. Furthermore, they are all important partners for the United States. Therefore, Washington puts no pressure on them to join the NPT. Even a possible change of occupant in the White House would probably not change this. The situation is seen as unjust by many non-nuclear weapons states. Therefore, there exists a danger that an increasing number of these states can no longer be persuaded to take an active part in the NPT process or, perhaps, to accept the expanded modern verification procedures.

The insufficiently kept disarmament pledge made by the official nuclear weapons states is also problematic. The 2000 NPT Review Conference, which defined the 13 Steps that would fulfill the pledge made here, had aroused expectations that have since been disappointed for the most part. In the meantime, the United States and other nuclear weapons states have signaled that they no longer wish to refer to the 13 Steps.

Finally, the UN Security Council has proven to be incapable of action when a state violates the NPT. This has clearly been seen in the case of North Korea. Hopes for a resolution of the North Korean case have been placed on the Six-Party Talks. Should they conclude successfully, one consequence will be the further weakening of the NPT. It will be clear to every NPT state that violations of the treaty will go unpunished.

Against this backdrop, the upcoming 2005 NPT Review Conference will be an extremely difficult diplomatic gathering. The conference's central focus will probably be the future balance of the NPT with regard to non-proliferation on the one hand and the civilian technological cooperation on the other. At the same time, this meeting is of the utmost importance for the treaty's basic significance. If it is impossible to express in the final report the will of the NPT members to commit themselves to the maintenance

and strengthening of this crucial international non-proliferation agreement, the treaty's value will diminish further. Conversely, a final report that recommends by means of consensus improving the NPT in many key aspects would send a signal that cooperative arms control is to remain of the utmost importance in preventing the spread of nuclear weapons. That the May 2004 Preparatory Committee could only guarantee a minimal consensus regarding the procedures of the 2005 Review Conference is a bad omen.

As a non-nuclear weapons state, Germany has traditionally had considerable interest in maintaining and strengthening the NPT. Together with its partners and allies, it should concentrate on those aspects of the NPT where the review conference can contribute to improving the treaty. This goes first and foremost for the withdrawal clause according to Article X. The introduction of an obligatory special conference of treaty states in the event a country desires to leave the NPT would prevent this article from being recklessly misused by other countries after the North Korean incident.

Furthermore, it would also be very important to recommend to the review conference that the modern verification procedures be accepted as the standard for the control obligations according to Article III of the NPT. The expanded obligations for providing information and access rights would decisively improve the verification of NPT compliance.

In the difficult question of how to treat the NPT's Article IV in the future, especially with regard to access to the complete nuclear fuel cycle, no generally acceptable proposals are to be expected. Germany, together with its European partners, should continue to try to find an individual solution to the case of Iran that would be instructive for dealing with this issue in other cases. The goal must be Iranian renunciation of uranium enrichment. If this were done successfully, the NPT would be indirectly strengthened as well.

It is still too early to write off the NPT. To the contrary, the implementation of the modern verification procedures offers the chance to improve the treaty significantly. Ultimately, dealing with the central problem cases of North Korea and Iran should provide

guidance for the future. Should these two countries be persuaded give up their nuclear ambitions, this would lead to a significant reevaluation of the NPT.

German foreign and security policy faces enormous challenges on the road to maintaining and strengthening this norm of nuclear non-proliferation.

Abbreviations

ABM	Anti-Ballistic Missile
CTBTO	Comprehensive Test Ban Treaty Organization
IAEA	International Atomic Energy Agency
INFCIRC	Information Circular
KEDO	Korean Peninsula Energy Development Organization
NPT	(Nuclear) Non-Proliferation Treaty
PSI	Proliferation Security Initiative
START	Strategic Arms Reduction Talks
URENCO	Uranium Enrichment Company