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Nuclear Security 2012

**: Challenges of Proliferation and
Implication for the Korean Peninsula**

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: Challenges of Proliferation and
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VI. South Asia and the Strategic Implications of Nuclear Weapons

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Both India and Pakistan have developed nuclear weapons (and platforms to deliver them) as a deterrent against a more powerful neighbor. Prompting each to do so was reluctance on both countries' behalf to trust the international community in protecting it against a stronger neighbor. India is concerned about a stronger China, and Pakistan about a stronger India. This dynamic has not changed much since independence for both countries. India refused to sign the Nuclear Non-Proliferation Treaty (NPT) that went into effect in 1970, arguing that the Treaty created a kind of nuclear apartheid (dividing countries into nuclear weapons states who possessed nuclear weapons in 1968 and non-nuclear weapons states which did not)¹ which strategically disadvantaged India (because China possessed nuclear weapons) and Pakistan refused to sign because India had not done so.² India conducted what it called a "Peaceful Nuclear Explosion" in May 1974, which triggered a more intensified Pakistani program to acquire nuclear weapons. Over the next 24 years, the two countries maintained a covert nuclear weapons program.

India's May 1998 nuclear tests similarly triggered a Pakistani decision to test just a few weeks later as both made it clear to each other and the world that they now were nuclear weapons powers. Sanctions imposed by the usual other countries had

¹- For an Indian argument on this nuclear apartheid see Jaswant Singh, "Against Nuclear Apartheid," *Foreign Affairs*, Vol. 77, No. 5 (September/October 1998).

²- India and Pakistan also refused to support the indefinite extension of the NPT in 1995. For a comprehensive review of the 1995 NPT Review Conference which ruled on this matter, see Berhanykun Andemicael, *et al.*, "Measure for Measure: The NPT and the Road Ahead," published in *The IAEA Bulletin*, Vol. 37, No. 3.

virtually no impact on their nuclear policies and most were quickly withdrawn, with a shift of policy toward diplomacy. Both South Asian states argue that possession of nuclear weapons is a significant force multiplier that serves as an effective deterrent against full scale warfare, though India and Pakistan have come close to war on at least two occasions since their tests in May 1998, and their relationship has been cool since the November 2008 attack on Mumbai by Pakistan-based terrorists. Both argue that they have constructed firewalls to protect their nuclear weapons and its technology, though senior Pakistani scientists in the recent past have run an international bazaar selling nuclear weapons information, and others have had reported links to terrorist groups, including Al Qaeda. Both countries support international non-proliferation measures, though they oppose some proposals as presently drafted, such as a Comprehensive Test Ban Treaty (Pakistan and India) and a Fissile Material Cut-off Treaty (Pakistan). The key issue now is to bring them within the international groups that address non-proliferation issues and President Obama in his visit to India (6–9 November, 2010) came out in support of India's full membership in the Nuclear Suppliers Group (NSG) and the Missile Technology Control Regime (MTCR), a pledge not simultaneously made to Pakistan. The U.S. will now need to convince other countries to accept new membership requirements into these organizations for India since it is not a signatory to the 1970 Non-Proliferation Treaty, which is now the entrance requirement. While the international community has not



formally accepted the legitimacy of the nuclear status of the two countries, India seems to be moving closer to formal acceptance, as demonstrated by the U.S. initiated international moves in 2008 to remove sanctions against export of nuclear fuel and technology exports to India and the more recent moves to include India in international nonproliferation regimes. How India, the far more powerful of the two, uses its nuclear status may play a significant role in managing the rise of an increasingly assertive China and safeguarding the critical Indian Ocean sea lanes that transport a large part of the world's gas and oil from the Persian Gulf area. Its possession of nuclear weapons is one important factor in its rise as a country affecting the Asian balance of power. Tension between a nuclear capable India and Pakistan, however, risks slide into a nuclear confrontation very quickly. Since neither will abandon its nuclear weapons, they need to put together structures to manage their tensions more effectively. The U.S. has abandoned a policy of rolling back their nuclear programs, but has done little so far to help them put together a regional regime addressing nuclear containment and regional tensions.

This paper will address ① the Indian and Pakistani nuclear weapons programs ② the approach of the two South Asian states to non-proliferation regimes, ③ implications of nuclear weapons for security in South Asia and beyond.

1. India and Pakistan and their Nuclear Weapons Programs

India

In the waning days of the British raj, Indian leaders, especially Congress leader Jawaharlal Nehru, were determined to provide India an independent scientific capability, including research in the new field of nuclear physics. With the development of strategic threats from China in the 1960s, a strategic rationale for nuclear weapons emerged that also served the purpose of the core element in Indian foreign policy, strategic autonomy, though India's nuclear program remained covert until its first tests in 1974. India declared itself a nuclear weapons power following its 1998 tests.

Intimately associated with establishing India's nuclear research program was Dr. Homi J. Bhabha(1909–1966), a brilliant physicist who worked with Lord Ernest Rutherford, the pioneering scholar in nuclear physics at Cambridge University. Shortly after his return to India, Bhabha in 1945 established the Tata Institute of Fundamental Research at Bombay. Three years later, Bhabha was selected to head India's new Atomic Energy Commission where he laid the groundwork for an independent Indian capability on nuclear research and technology. India's first prime minister, Jawaharlal Nehru(1947–1964), strongly supported his efforts and, by personally taking charge of the cabinet's Department of Atomic energy, was able to provide Bhabha significant



freedom of maneuver and ample resources.³

India's first source of fissile material that, once reprocessed, could be used for a nuclear weapon came from the Canadian supplied CIRUS reaction, which came on line in 1960. India's second research reactor, designed and built entirely by Indians, came on line in 1961; a year later India's first heavy water plant was commissioned; and in 1964 its first plutonium separation plant was inaugurated to separate fuel produced by the CIRUS reactor. The testing of a Chinese nuclear weapon in 1964 gave India a strategic justification to develop its own nuclear weapons capability, though there is a heated debate by scholars over when India launched a dedicated nuclear weapons program.

India tested what it called a "Peaceful Nuclear Explosion" on 18 May 1974, using plutonium extracted from the Canadian supplied CIRUS reactor as the fissile material. Official statements of the peaceful intentions of the test (allegedly for mining and earthmoving operations) were largely discounted because there is no significant difference in the nuclear explosive technology for peaceful purposes or for weapons purposes.

Canada, whose fuel provided the plutonium used for the nuclear test, suspended its nuclear cooperation; the U.S. had a low key response; the Indian public was generally supportive and the nationalist Jana Sangh party (later to rename itself the Bharatiya Janata Party)

³- For a background review of India's nuclear efforts, see Onkar Marwah, "India's Nuclear and Space Programmes: Intent and Policy," *International Security*, Vol 2 (Fall 1977).

reiterated its long term demand for an Indian nuclear weapons program. Reacting to the 1974 Indian test, the U.S. Congress in 1977 and 1978 passed legislation mandating various kinds of sanctions against any country not adhering to full scope safeguards administered by the International Atomic Energy Agency(IAEA). The U.S. also took the initiative to establish international technology control regimes such as the NSG and the MTCR.

Despite the prospect of U.S. sanctions mandated by U.S. law,⁴ a newly elected pro-nuclear Hindu nationalist government, fulfilling a long term party demand, which was also repeated in its 1998 election manifesto, ordered tests on 11 and 13 May, 1998 just two months after coming to power, and unlike 1974, declared India a nuclear weapons power. The tests received widespread popular support in India. Pakistan expectedly followed suit on 28 May, and were similarly popular. The BJP-led coalition government of Prime Minister Atal Behari Vajpayee(1998–2004), unlike the Gandhi government in 1974, was quite clear that these were nuclear weapons tests. Prime Minister Vajpayee wrote letters to U.S. President Clinton and to the G8 heads noting that the major strategic purpose was as a counterweight to China.⁵

K. Subrahmanyam, the dean of Indian strategic writers, added that a nuclear weapons capability is now one important measure of power

4- The U.S. legislation mandating sanctions were not applied retrospectively to India's 1974 tests.

5- See Arati R. Jerath, "Government Flashes China Card at the West," *The Indian Express* (1 May, 1998).



and a country of India's size must have it.⁶

These 1998 tests, which took the U.S. government totally by surprise, met with legislatively-mandated sanctions that are rooted in efforts to prevent any further nuclear testing. India was subject to sanctions imposed under the 1994 Glenn Amendment (also known as the Nuclear Proliferation Prevention Act), which specified a denial of new financing assistance from the U.S. Export-Import Bank, the Overseas Private Investment Corporation and the U.S. Trade Development Agency, as well as U.S. opposition to loans (except for basic human needs) from international financial institutions, and a prohibition on export of certain dual-use items.⁷ Russia and France announced that they were opposed to sanctions. Despite being identified as the justification for India's nuclear weapons, China itself took a low key approach to the tests. The Clinton Administration, realizing that the sanctions had virtually no impact on their nuclear weapons policy, lifted most of them within months of their implementation. Rather they decided to focus on a diplomatic approach which led to an intensive set of fourteen talks between Deputy Secretary of State Strobe Talbott and Indian Minister of External Affairs Jaswant Singh in 1999–2000.⁸ This shift in policy followed the prescription of a Council of Foreign

⁶ K. Subrahmanyam, *Nuclear Myths and Realities -India's Dilemma* (New Delhi: ABC Publishing House, 1981), pp. vi–vii.

⁷ For a discussion of the sanctions and the gradual lifting of many of them, see Leonard S. Spector, "Status of U.S. Sanctions Imposed on India and Pakistan," <cns.miis.edu/archive/wtc01/pakind.htm> (Accessed on 2010.10.14).

⁸ Strobe Talbott, *Engaging India: Diplomacy, Democracy and the Bomb* (Washington D.C.: Brookings Institution Press, August 2004), pp. 3–4.

Affairs in 1998 which described the sanctions as “obstacles to effective diplomacy” and further argued that the “sanctions can work against U.S. interests” including the goal of regional stability.⁹

Sanctions imposed under the Atomic Energy Act prohibiting U.S. nuclear fuel and nuclear technology to states (like India) that have not accepted IAEA inspections on all their nuclear facilities (‘full scope safeguards’) and had not signed the 1970 NPT were lifted when the George W. Bush administration waived these restrictions on India (though not Pakistan) and Congress permitted by legislation in 2008. The international community followed suit in 2008 when the IAEA and the NSG voted to permit such sales, though the U.S. had to exert diplomatic leverage to get some countries, like China, to go along.

These various sanctions on India had a very limited economic impact on India and the restrictions on arms sales was not consequential as India until very recently did not purchase U.S. weapons.¹⁰ Nonetheless, some significant sanctions from 1998 remained even after the 2008 civil nuclear deal to lift sanctions on export of nuclear fuel and technology, such as dual use exports, and these remaining sanctions were a source of irritation in the U.S.-Indian relationship. President Obama in his visit to India addressed this issue and announced the lifting of sanctions on ISRO, the country’s premier space organization,

⁹– Richard N. Hass and Morton H. Halperin, *After the Tests: U.S. Policy Toward India and Pakistan* (New York: Council on Foreign Relations, September 1998), p. 10.

¹⁰– For a review of the economic impact of the sanctions on India and Pakistan, see Daniel Morrow and Michael Carriere, “The Economic Impacts of the 1998 Sanctions on India and Pakistan,” in *The Nonproliferation Review* (Fall 1999).

and the DRDO, its major defense research body. This went a long way in affirming the Obama Administration's commitment to building a strategic relationship with India, though the bureaucratic fine print on what "lifting" means has not yet been worked out. The other significant confidence building step made during President Obama's visit to India was his announcement that the U.S. endorsed India as a permanent member of the UNSC, a pledge that also requires bureaucratic action in the U.S. and international support. Neither the nuclear exception nor the lifting of sanctions was granted to Pakistan, a sore point in the U.S.-Pakistani relationship.

India, by one reputable estimate for 2010, now possesses up to 100 nuclear warheads (and Pakistan with slightly less at 70–90).¹¹ India and Pakistan have a broad range of platforms on which to mount nuclear weapons. India has methodically built an indigenous missile production capability, using its highly developed commercial space-launch program to develop the skills and infrastructure needs to support an ballistic missile program. The strategic goal of course is to reach anywhere in China. India successfully test fired the Agni III, which is capable of carrying a nuclear payload up to 1,800km. It is now working on a submarine ballistic missile version of the Agni III, as well as the Agni V ICBM with a range of 5,000km. The goal of course is to get a nuclear strike triad(land, sea and air) that can strike anywhere in China.¹²

¹¹– "Arms Control Association: Who has what at a Glance," <www.armscontrol.org/factsheets/Nuclearweaponswhohaswhat> (Accessed on 2010.10.15).

¹²– Snehal Rebello, "India Will Soon have Potential to Launch N-Warhead from Land,



Pakistan

Pakistan was much slower than India to develop any kind of nuclear program and had no charismatic dynamic figure like Homi Bhabha to lead the way and also lacked India's technical capabilities for a nuclear weapons program.¹³ An Atomic Energy Commission was not set up until 1956 to develop peaceful uses of atomic energy and it had a very modest budget; the country lacked a cadre of trained scientists and technicians and no training facilities. The U.S. helped Pakistan set up its first research reactor at PINSTECH close to the military center of Rawalpindi in 1963 under IAEA safeguards, which went critical in 1965. A second reactor, known as the Karachi Nuclear Power Plant(KANUPP) was set up with Canadian help and this safeguarded facility went critical in 1971.

Pakistan's nuclear program took on a greater urgency when Zulfikar Ali Bhutto assumed power following the country's defeat by India in late 1971. He launched a talent search to bring Pakistani scientists back to Pakistan, and among those lured back in 1975 was Dr. Abdul Qadeer Khan(A. Q. Khan), who had hands-on experience working in Urenco's Gas Centrifuge Plant in Holland. He was to lead the effort to establish Pakistan's own gas centrifuge uranium enrichment facility at Kahuta, also close to Rawalpindi, and he almost immediately began

Air or Water," *Hindustan Times* (31 October, 2010), <<http://www.hindustantimes.com/India-will-soon-have-potential-to-launch-N-warhead-from-land-air-or-water/Article1-620191.aspx>> (Accessed on 2010.11.17).

¹³- Naeem Salik, *The Genesis of South Asian Nuclear Deterrence: Pakistan's Perspective* (Oxford: Oxford University Press, 2009), Chapter. 3.



a program to develop nuclear weapons, using technology he had acquired in Holland and engaging in an international program of covertly acquiring the various parts required for building a nuclear weapons capability, a rather dramatic indication of the limited capabilities existing in the country. India's test in May 1974 prompted Prime Minister Bhutto to accelerate Pakistan's nuclear weapons program. The Pakistan Atomic Energy significantly expanded its budget, but it was Pakistan's decision to build a reprocessing plant to support a single and relatively small power plant that aroused international suspicion. The reprocessing plant made neither economic nor technical sense, raising suspicions about Pakistan's real motives and resulting in a reluctance of international suppliers to provide even equipments meant for peaceful applications.¹⁴ This proposed reprocessing facility, to be built by the French, was opposed by the U.S. and the French backed out of the agreement Pakistan reacted by quietly embarking on an alternative uranium enrichment technology and covertly sought the parts to build an enrichment facility The U.S. was aware of this effort and cut off economic assistance in 1979 as mandated by the Symington Amendment (passed in 1976 in reaction to India's 1974 tests) for countries that acquire enrichment technology and do not comply with IAEA safeguards.

But the Soviet move into Afghanistan in late 1979 changed everything for the newly elected President Ronald Reagan moved to offer substantial military and economic aid, while relegating the

¹⁴- See Salik, *The Genesis of South Asian Nuclear Deterrence*, pp. 84–85.

nuclear issue to the margins. But the strong nonproliferation lobby, most prominently Senator John Glenn, moved to impose sanctions specifically on Pakistan by requiring an executive determination each year that Pakistan neither had nor was developing a nuclear weapon. The legislation, known as the Pressler Amendment (to the foreign assistance act) after the senator introducing it, was enacted in 1985. There then followed a sort of masquerade of the U.S. executive annually certifying to the Congress that Pakistan did not “possess” a nuclear weapon while senior Pakistani officials hinted strongly that in fact Pakistan was developing a weapons capability, which indeed it was. At the same time, Pakistan proposed a series of diplomatic initiatives in what was mainly a public relations effort to demonstrate its concern for nuclear non-proliferation and to get the international community to put pressure on India; among its proposals were a Nuclear Weapons-Free Zone in South Asia(1974), Mutual Inspection of Nuclear Facilities(1979), simultaneous Indian and Pakistani adherence to the NPT(1979) and a bilateral nuclear test ban(1987).¹⁵ By 1990, the available intelligence of a Pakistani program gave little room of maneuver for President George H. W. Bush on this issue and the U.S. imposed the Pressler sanctions, which cut off economic and military assistance programs, including the delivery of F-16 fighters which Pakistan had paid for.

The 1990s were a decade of difficulties for Pakistan economically

¹⁵– See discussion of these efforts in Salik, *The Genesis of South Asian Nuclear Deterrence*, pp. 121 – 123.



and diplomatically. By way of contrast, India had adopted economic reforms that were beginning to show results in a faster annual GDP growth rates and diplomatically with much improved relations with the U.S. and China. The Indian nuclear tests in 1998 came as a major surprise to the U.S., but they turned out to be only a temporary slowdown in a larger positive trend in Indo-U.S. relations, motivated in part by U.S. and Indian efforts to better manage the rapid rise of China in Asia. But the Indian tests were a significant blow to international non-proliferation goals. Having failed to halt the May 1998 Indian nuclear tests, the U.S. put great pressure on Pakistan not to respond with testing of its own, offering to lift a series of earlier sanctions imposed because of Pakistan's covert nuclear weapons program. It would probably have required U.S. security guarantees to Pakistan for it to restrain from conducting its own nuclear tests, and neither the U.S. nor China were prepared to make any such offer.¹⁶ What appears to have triggered the decision to respond with its own tests was fear of a strategic disadvantage to India. Pakistan's responding tests took place on 28 May and 30 May. Prime Minister Sharif referred to the tests as "Pakistan's finest hour" for standing up to India in a televised address to the nation.¹⁷

As the weaker power, Pakistan, unlike India, did not issue a no first-use pledge. Limited technical capabilities forced Pakistan to use covert means to acquire a uranium enrichment capability; this same

¹⁶- See discussion of Pakistan's decision to test in Salik, *The Genesis of South Asian Nuclear Deterrence*, p. 143.

¹⁷- *Ibid.*

limitation forced it to take a similar approach to acquiring a missile capability - or to buy it from countries willing to sell to it. The enrichment and missile efforts came together in the person of A. Q. Khan, a Pakistani metallurgist who returned to Pakistan in the 1970s from The Netherlands to work on the country's covert enrichment efforts, reportedly with blueprints for enrichment centrifuges and other components obtained at Dutch laboratories working on centrifuge issues. He established a government-funded enrichment research facility that was later named after him by President Zia-ul-Haq in recognition of Khan's services to the nation. By the mid 1980s, his facility reportedly produced enough highly enriched uranium for a nuclear weapon and he was tasked with research and development of missile delivery systems. After a failed attempt to develop its own solid-fuel ballistic missiles, Pakistan turned to China and North Korea for assistance. China in the early 1990s sold an entire production line of M-11s and supplied a range of missile technologies that seems to be the basis of Pakistan's early "Hatf" missile, sales that led to the imposition of sanctions twice on China before Beijing agreed to abide by the MTCR.¹⁸ The 300 mile radius of the M-11 and its derivatives, however, were insufficient to reach all of India. Pakistan began negotiations with North Korea for what amounted to between one and two dozen Rodong missiles, renamed the Ghauri when it was inducted into the military in 2003. It has a radius of 1200-1300km and thus can reach

¹⁸- "China's Missile Exports and Assistance to Pakistan," published in Nuclear Threat Initiative, and available at <<http://www.nti.org/db/china/mpakpos.htm>> (Accessed on 2010.10.20).



most targets in India.

Many press reports note that Pakistan exchanged nuclear enrichment equipment and technology in exchange for the *Rodong*, and that this exchange was managed by A. Q. Khan, whose laboratory developed the Ghauri from North Korean designs.¹⁹ The missile cooperation between North Korea and Pakistan, long denied by both sides, became public when Pakistan tested a Rodong in April 1998. The U.S. State Department subsequently made a determination that this transfer violated the MTCR and imposed sanctions on Khan's research laboratory and North Korea's *Ch'anggwang* Trading Company. Even then, proof of continuing cooperation showed up when Indian customs officials in 1999 using intelligence information, seized the North Korean ship *Ku Wol San* at the port of Kandla on the west coast of India, revealing that it contained missile components and manuals for Scud-type ballistic missiles. While Pakistan has consistently denied exchanging nuclear enrichment technologies for the missiles, the evidence²⁰ seems to point to such assistance by A. Q. Khan's private nuclear enterprise. Former President Pervez Musharraf in his autobiography wrote that Khan transferred "nearly two dozen P-I and P-II centrifuges to North Korea" and "nearly eighteen tons materials, including centrifuges, components and drawings."²¹ Given the extensive period of time when these

¹⁹–For a review of the evidence on this enrichment/missile exchange and A. Q. Khan's involvement, see *Gaurav Kampani, "Second Tier Proliferation: The Case of Pakistan and North Korea," The Nonproliferation Review (Fall/ Winter 2002).*

²⁰– *Ibid.*, p. 112.

²¹–Pervez Musharraf, *In the Line of Fire* (New York : Free Press, 2006), p. 294.

exchanges took place and the involvement of the shipment of parts, it is likely that the military and the government were complicit. Even in the unlikely case that Khan acted on his own, Pakistan's failed to safeguard its nuclear technologies. This represents a laxness that stands in the way of providing an exception to Pakistan on the supply of nuclear technology and fuel. Pakistan, however, argues that most of Khan's proliferation activities took place before it set up a system of command and control within the military that controls Pakistan's nuclear facilities, and no reported proliferation has occurred since this system went into effect after 2000. In addition, Pakistan established a Nuclear Regulatory Authority in January 2001, growing out of its accession to the Nuclear Safety Convention that sets safety rules and carries out regular inspections to insure their enforcement.²² Nonetheless, considerable skepticism continues.

2. Non-Proliferation Issues

Now that India and Pakistan are openly declared nuclear weapons powers with delivery capabilities, the U.S. and the international community refocused their attention to getting the two countries to adhere to international non-proliferation objectives and to improve the security of their nuclear stockpiles. The presence of a robust terrorist presence in Pakistan has exacerbated the international concern for the safety of its nuclear assets. In contrast, the 2008 civil nuclear deal

²²– See Salik, *The Genesis of South Asian Nuclear Deterrence*, pp. 278–291.

worked out by President George W. Bush with Prime Minister Manmohan Singh in 2008, and subsequently ratified internationally by the IAEA and the NSG, seems to underscore the trust of the international community in India's commitment to protect its nuclear materials and prevent their proliferation.²³ A similar trust does not yet exist for Pakistan because of the recent evidence of significant proliferation activities led by A. Q. Khan, perhaps with some government collusion. Pakistan argues that it has put in place measures, including the removal of Khan from any involvement with the country's nuclear programs, to prevent any further proliferation.

A major challenge for both countries is that, as non-signatories to the NPT, they are not members of the international nonproliferation regimes established in the wake of the NPT, such as the IAEA, the Non-Proliferation Treaty Exporters Committee, the NSG and the Wassenaar Arrangement which seek to monitor and regulate the trade in nuclear fuel and technology. Still another challenge is the general weakening of the international non-proliferation regimes over the past decade. And a third challenge is the rise of terrorism, especially acute in Pakistan, though Pakistan's army, which has absolute control over its nuclear weapons, has taken several important steps to secure its

²³- The Indian side in that treaty agreed (1) to submit its nonmilitary nuclear facilities to IAEA sections-or 14 of its 22 reactors at that time, (2) to sign an Additional Protocol with the IAEA to allow for more detailed inspections, (3) to commit to halting further nuclear testing on a voluntary basis, (4) to work to strengthen the security of its nuclear facilities (5) to pledge to negotiate an FMCT, and (6) to insure that all equipment for nuclear reactors and imported fuel would be for peaceful uses only.



nuclear assets.²⁴

India is now recognized as a *de facto* nuclear weapons state, but it would like *de jure* status to get the full rights to nuclear trade under the NPT and to correct what Indians consider was an injustice to India. A simple amendment to Article IX(3) of the NPT would need to be changed to give India the right of entry. The article now reads that “For the purposes of this Treaty, a nuclear- weapon State is one which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January 1967.” India would be eligible if the date is changed from ‘1 January 1967’ to ‘1 January 1975.’ Still another way to draw in India and Pakistan (as well as Israel) into concrete nonproliferation discussions would be carry out such talks under mandate of Article 1540(April 2004), which for the first time established binding obligations on all UN members under Chapter VII of the UN Charter to take and enforce effective measures against the proliferation of WMD. India (and Pakistan) consider the NPT as it is discriminatory, and the 1995 international review making it a perpetual treaty with little prospect for review of its key provisions, was probably one of the incentives for India to carry out the tests in 1998.²⁵ The NPT, while paying lip service to disarmament, does not address horizontal proliferation within nuclear states and does very little to advance the cause of nuclear power in such crucial sectors

²⁴- For a report on international efforts at securing vulnerable nuclear materials, see Kenneth N. Luongo, “Securing Vulnerable Nuclear Materials: Meeting the Global Challenge,” *Policy Analysis Brief* (The Stanley Foundation, November 2009).

²⁵- T. P. Sreenivasan, “Bringing India’s Dream to Fruition,” *Washington Quarterly*, Vol. 33, No. 2 (April 2010), pp. 25–26.



as power generation, medicine and water.

Soon after India and Pakistan conducted their nuclear tests in 1998, both had the opportunity to address two significant non-proliferation issues: a commitment to a comprehensive test ban and a fissile material cut-off effort. A test ban had been subject of a Conference on Disarmament at Geneva in 1995 – 1996, which both attended. At that Conference, India cast a negative vote because the Conference did not consider its proposal of a time limited program for nuclear disarmament, and because of entry in force provisions that required India's ratification. Pakistan voted for a CTBT at the Conference, but refused to ratify it because India did not do so. In any case, the CTBT ceased to be a viable proposition when the U.S. Senate in 1999 rejected the treaty. However, all the nuclear weapons states, including Pakistan and India, since 1996 have declared a voluntary moratorium on testing. Indians, however, are not convinced that China has in fact abided by a moratorium. On the larger issue of nuclear disarmament, India has been publicly critical of the of inability/unwillingness of the nuclear weapons states to implement the benchmarks of progress toward nuclear disarmament envisaged in the NPT. It is the only state that has argued that total abolition is possible, and has done so even after its 1998 tests.²⁶

On a Fissile Material Cut-off Treaty(FMCT) that would ban the production of fissile material for nuclear weapons, the two countries

²⁶- For a review of India's disarmament record, see Salik, *The Genesis of South Asian Nuclear Deterrence*, pp. 169 – 179.

have divergent views. India is supportive of a proposed cut-off treaty, including only a ban on future production, as it was proposed at the 1996 CD, and Pakistan is not because of its view that India possesses a larger stockpile of fissile material and it therefore wants a verifiable treaty that addresses past, present and future production of fissile material. That proposed treaty would ban only production of new fissile material for weapons purposes, would not involve inspections and would not address pre-existing fissile materials. Of the declared nuclear weapons states, India and Pakistan are the only countries to continue to produce fissile fuel. Only recently has there been an effort to de-link the FMCT from other issues like nuclear disarmament and negative security assurances. Like a CTBT, a FMCT has not come into effect, even though the 1995–1996 Conference on Disarmament proposed that such a treaty come into effect by 2005.²⁷ India and Pakistan oppose making advance commitments to stop production of fissile fuel. India's stand against advance commitments is partly based on its doubts whether a Chinese moratorium is actually in place.

The Proliferation Security Initiative(PSI), introduced by President George W. Bush in 2003 as a cooperative mechanism permitting interdiction of illicit transfers of nuclear and other WMD between nations, should be an initiative with Indian membership. While the issue of transport of illicit nuclear material is of concern to India and the PSI presents an opportunity to expand India's role in promoting

²⁷– See report of proposal in Kingston Reif and Madeleine Foley, “Fact Sheet on the Fissile Material Cutoff Treaty,” (15 July, 2009), a reprint.



collective security in the Indian Ocean with the U.S. and other powers,²⁸ India's participation is in doubt because of a little known international agreement, the Convention on the Suppression of Unlawful Acts against Maritime Navigation adopted in 1988, which prohibits any kind of nuclear trade with countries not parties to the NPT and that do not have comprehensive nuclear safeguards, such as India. The U.S. and India will have to find a way to get around this challenge.²⁹

Terrorist threats to the nuclear facilities of India and Pakistan are a real danger. Both countries have terrorist groups with a record of striking at security facilities. The A. Q. Khan episode in Pakistan demonstrates the potential for stealing nuclear secrets. The 9·11 terrorist attack and subsequent comments of Osama bin Laden have raised new concerns about preventing terrorists from stealing or attacking nuclear material. The 1987 Convention on the Physical Protection of Nuclear Material (with 45 signatories currently)³⁰ is the only international instrument on physical protection of nuclear materials. India and Pakistan participated in the 4–8 July, 2005 conference to amend the Convention to make it more effective, with subsequent workshops to identify “best practices” in security nuclear material. The vast expansion

²⁸– For a discussion of India's views on PSI, see A Vinod Kumar, “India's Participation in the Proliferation Security Initiative: Issues in Perspective,” *Strategic Analysis*, Vol. 33, No. 5 (September 2009).

²⁹– For discussion, see C. Raja Mohan, “India and the Non-proliferation Institutions: Addressing the “Expectations ‘Gap’,” A Paper Presented at the Third Meeting of the Working on an Expanded Non-Proliferation System, Washington D.C. (19 June, 2010).

³⁰– International Atomic Energy Agency, “Convention on the Physical Protection of Nuclear Material,” <www.iaea.org/Publications/Documents/Conventions/cppnm_status.pdf> (Accessed on 2010.11.17).

of nuclear facilities around the world (now some 450 plants)³¹ over past few decades, and the prospective expansion of such facilities in South Asia, gives greater urgency to the protection of nuclear material. A challenge is that neither the NPT nor the Convention on Physical Protect of Nuclear Material requires states to provide protection within their own territories or to enforce a set of “best practices” at home, such as better accounting and tracking, the creation of a proliferation-resistant fuel cycle that is not discriminatory, etc. One possible fix organizationally would be to give greater authority for the physical protections requirements of UNSC Resolution 1540 to the IAEA, which already has inspectors that go from country to country to check on compliance with its rules.

There is also a private initiative, launched at Vienna in 2008 by a private group led by former U.S. Senator Sam Nunn, to promote the best security practices and eliminate weak links in the global security chain, and by extension, keep terrorists from getting a nuclear weapon. The new organization, known as the World Institute for Nuclear Security(WINS) intends to provide a forum where nuclear security professionals can meet and share information on best ways to keep dangerous materials out of unfriendly hands.³² This venture is a complement to the World Association of Nuclear Operators(WANO) formed in 1989 by nuclear plant operators to prevent another accident

³¹- European Nuclear Society, “Nuclear Power Plants World Wide,” available at <<http://www.euronuclear.org/info/encyclopedia/n/nuclear-power-plant-world-wide.htm>> (Accessed on 2010.11.17).

³²- “WINS Fact Sheet,” World Institute for Nuclear Security, available at <<http://www.wins.org/fileitem.aspx?id=163>> (Accessed on 2010.11.16).

like that at Chernobyl by improving the safety of nuclear plants worldwide. Every organization in the world operating a nuclear electricity generating plant is a member of WANO and its major goal is to perform peer reviews that form basis of advice on best practices to ensure nuclear safety.³³

3. Strategic Implications of Nuclear Weapons in South Asia

The strategic nuclear doctrines of India and Pakistan are based on the notion of a credible minimum deterrent. The development of nuclear weapons by China, which had invaded India in 1962 as an exercise in coercive diplomacy (regarding disputed boundaries which have still not been resolved) was a significant factor in India's decision to develop nuclear weapons and thus prevent future efforts at coercion.³⁴ Analysts on both sides argue³⁵ possession has proved an effective deterrence against full scale war between the two countries, though the Kargil conflict in Kashmir during the summer of 1999 and the long military standoff in 2001–2002 following a terrorist attack on the Indian Parliament throw some doubt on this proposition. Proponents of deterrence argue that even in these two

33- "What is WANO?" World Association of Nuclear Operators(WANO), available at <http://www.wano.org.uk/WANO_Documents/What_is_WANO.asp> (Accessed on 2010.11.16).

34- Sreenivasan, "India's Dream," p. 29.

35- See Salik, *The Genesis of South Asian Nuclear Deterrence*, Chapter. 7.



cases, India and Pakistan pulled back from the brink of conflict. On the Kargil incident, for example, Indian forces did not cross the Line of Control or the international boundary and Pakistan continued to maintain the fiction that its paramilitary troops were indigenous “freedom fighters.”

The Kargil Conflict, however, illustrates the “stability-instability” paradox that nuclear weapons pose in South Asia. On the “stability” side of the argument is that nuclear weapons kept the conflict limited. On the “instability” side is that possession of a nuclear capability may have emboldened Pakistan to engage in low intensity warfare without risking a full Indian countering response.³⁶

Since Kargil, the two sides have set up command and control mechanisms, have followed through on nuclear related confidence building measures, and have toned down their rhetoric. Yet, the danger of conflict continues with the continuing threat of Pakistan-based terrorist attacks on India similar to the November 2008 terrorist attack on Mumbai. It is doubtful if India would remain as restrained the next time such an attack occurred. Both sides seem to believe that nuclear weapons do not eliminate the possibility of limited conflicts (such as the use of Pakistani paramilitary forces at Kargil), just that it reduces the risk of those conflicts morphing into full-scale war (i.e., the “stability” half of the “stability-instability” paradox). But nonetheless there is considerable concern in both countries (and elsewhere) that

³⁶– For a discussion of this paradox, see Martin J. Wojtyasiak, “Preventing Catastrophe: U.S. Policy Options for Management of Nuclear Weapons in South Asia,” *Maxwell Paper*, No. 25 (Air War College, 2001), p. 19.



a limited war could in fact slide into a nuclear exchange.³⁷

Pakistan for its part has made the maintenance of a manageable ratio of forces with India a core part of its defense strategy, with one of the justifications being that this parity (or near parity) maintains a rather high threshold on the use of nuclear weapons. Pakistani strategists argue that India's continuing military buildup risks lowering this threshold.³⁸ India however justifies a strengthening of its military forces to meet multiple threats, most prominently from China. Pakistan tries to keep up conventionally, but India's huge and growing economic advantage may put constraints on just how much Pakistan can spend on its military, and a growing gap between the two countries would lower its nuclear threshold during a limited war. The growing size of India's military also provides a justification to Pakistan to maintain a major part of its military forces on the border with India, rather than transfer them to the west to fight terrorists there who engage in cross-border attacks on U.S. and NATO forces in Afghanistan.

Following the May 1998 nuclear tests, the two countries held talks in October at Lahore to work out a strategic restraint regime in the context of newly announced possession of nuclear weapons, and they signed a memorandum of understanding that would form the

³⁷– Pervez Hoodbhoy, "India & Pakistan: Case for Common Defence," *The Hindu* (27 November, 2009), available at <<http://www.thehindu.com/opinion/lead/article56002.ece>> (Accessed on 2010.11.17). Also, Siddharth Varadarajan, "The Piper's Price: India and the U.S. after Kargil," *The Times of India* (17 July, 1999), available at <www.bu.edu/globalbeat/southasia/varadarajan0799.html> (Accessed on 2010.11.17).

³⁸– Salik, *The Genesis of South Asian Nuclear Deterrence*, pp. 247–248.

basis of negotiations. While the Kargil incidents the next year put the Lahore MOU on the backburner and continuing tensions have stood in the way of reviving the ideas, the five specific proposals are still valid:³⁹

- ① Bilateral consultations to develop confidence building measures in both nuclear and conventional areas
- ② Advance notification on ballistic missile flights
- ③ National measure to reduce risk of accidental or unauthorized use of nuclear weapons.
- ④ Continue nuclear testing moratorium, unless extraordinary events arise that threat national sovereignty
- ⑤ Bilateral consultations on security, disarmament and non-proliferation.

These steps are still a good basis to resume the negotiations that collapsed due to Kargil. Such resumption might require quiet, “behind the door” diplomacy by the U.S. alone with promising technical assistance to embrace the verifiability of confidence building measures.

The two sides have on their own established a hotline between the respective Director Generals of Military Operations and existing CBMs regarding informing the other side annually on nuclear sites (as part of an agreement not to attack each other’s nuclear facilities) are in place. However, lack of trust has resulted in a spotty record on

³⁹– For details, See Salik, *The Genesis of South Asian Nuclear Deterrence*, pp. 250 – 251.

these CBMs and an inability to work out significant new ones. Nonetheless, there is a continuing need for the two countries to place restraints on their nuclear and missile development to meet their declared doctrines of “minimum credible deterrence” as well as work out risk reduction and crisis management measures. Perhaps the greatest single impediment to a renewed consideration of joint action is the continued Pakistan-based terrorist violence directed against India and against the Indian presence in Afghanistan. The Government of Pakistan needs to crack down forcefully on these groups, who themselves represent a threat to Pakistan. India, the stronger power, needs to do what it can to reduce Pakistani suspicions of Indian efforts to weaken it, perhaps by proposing that the two sides move ahead on the ideas raised in the 1999 Lahore Memorandum of Understanding. These two steps would probably have to happen simultaneously (and perceived to be taking place in good faith) to sustain a rapprochement process.



4. The Impact of India and Pakistan’s Nuclear Programs on the Balance of Power in Asia

The future security situation in Asia will depend on the relative strengths of China, Japan, India, and, to a certain extent, Korea. It will also depend on continued American willingness to engage on security issues in East and South Asia. These Asian powers are all economic powerhouses and two of them have nuclear weapons. The

nuclear factor is an element in the balance of power in Asia. China has emerged as the most powerful both militarily and has surpassed Japan as the world's second largest economy. Much depends on how India, Japan and Korea interact with each other and the other major power in Asia, the United States, to manage the rise of China. Historically, the U.S. has been linked closely with the security of Japan and Korea, and the U.S. remains the major power in Asia, though China is emerging as a challenger. While Indian relations with China have improved considerably since the end of the Cold War, India has had a history of poor relations with China since the border war in 1962 and the Chinese provide military assistance to Pakistan, and provided it technical help on its nuclear program in the 1980s. The India-China border issue remains unresolved and China continues to provide nuclear assistance to Pakistan, though now restricted to civilian uses of nuclear energy. China in 2010 announced that it would sell two nuclear powered electrical generating plants to Pakistan and without getting NSG approval required of countries that have not signed the NPT. China claims that the deal for these plants was made before it (and other countries) joined the NSG in 1994 and that it is therefore legal. The U.S. and India disagree. The Chinese also have provided Pakistan with nuclear capable missile systems in the early 1990s. North Korea has become still another major source of missile technology to Pakistan, and in return it received enrichment technology and enrichment hardware. Chinese support for North Korea also is a source of tension in East Asia as it provides North

Korea the confidence to pursue its nuclear brinkmanship.

Managing the emergence of China was the major driving force behind the U.S.-India civilian nuclear agreement in that it was aimed specifically at strengthening India as an actor on the Asian stage. While the agreement, which came into effect in 2008 as a purely civilian one, an Indian nuclear weapons capacity enhances the country's role as a balancing power in Asia and removed a fear that China might use nuclear blackmail in a future crisis. While there is concern in the U.S. that Indian and Pakistani possession of nuclear weapons could be a destabilizing factor, given the deep suspicions between the two and the ongoing bilateral disputes, this concern is balanced by strategic advantages of a nuclear armed India. India for its part was alarmed that the new Obama administration might assign less strategic importance to India as it sought to improve the U.S. the relationship with China, and might even work out a strategic accord with China that involves a Chinese management role in South Asia. Subsequent American expressions of support for Japan, Korea and the Southeast states in the face of a more assertive China have calmed Indian fears somewhat regarding U.S. goals in Asia. In his visit to India in November 2010, President Obama further calmed Indian apprehensions on the importance of India to the U.S. by proposing India as a permanent member of the UNSC, recommending India as a member in international nonproliferation regimes, and lifting sanctions on key space and defense production organizations. Underscoring the strategic importance of India to the U.S., moreover, is the sale of among the most sophisticated military weapons in the U.S. arsenal and continued



joint military maneuvers between the two.⁴⁰

South Korea has developed a robust relationship with India, partly driven by growth in trade and investment, but also by strategic considerations. India plays an increasingly important role in protecting the vital Indian Ocean sea lanes that transport much of its oil and gas from the Persian Gulf region (as well as most of the Japanese oil and gas). This is reflected in Comprehensive Economic Partnership Agreement(CEPA) with South Korea and the start of joint naval maneuvers. South Asia (India/Pakistan) and Northeast Asia (the two Koreas and increasingly Japan/China) are among the major trouble spots in the world today and potential conflicts exist in both places that could have a larger regional impact. The common China factor is something that India and South Korea have to contend with, as it is the most significant common link emboldening Pakistan and North Korea. Viewed from this perspective, India's Pakistan policy has implications for South Korea and South Korea's North Korea policy has implications for India.

There is no overarching organizational architecture to address the several security tensions in Asia. If the states of Asia do not work out some institutional arrangement to address security issues (with necessary U.S. involvement to reduce fears of everyone else to an emerging China), there is likely to be an aligning of forces, with India almost certainly moving closer to South Korea and Japan, and

⁴⁰– “Factbox: Obama Highlights \$10 Billion of Deals in India,” *Reuters* (6 November, 2010), available at <<http://www.reuters.com/article/idUSTRE6A514920101106>> (Accessed on 2010.11.17).



China very likely moving closer to Pakistan. One major near term advantage of a larger regional security arrangement with American involvement is that it reduces the chances of South Korea and Japan moving to develop nuclear weapons of their own, which both could do at quick notice if they felt threatened by China and/or North Korea. The other advantage is to draw China into a more accommodative relationship with the rest of Asia. The U.S. itself is strengthening its strategic ties to India, Japan, Korea and Indonesia in part to caution China that further assertiveness towards its neighbors also threatens U.S. interests and would drive all these countries even closer together. Neither the U.S. nor the other Asian powers seek to contain China, but to strengthen Asia's great democracies to maintain a stable balance of power in Asia and thus enhance the chances of a peaceful rise of China.⁴¹

⁴¹ For a discussion of how a strengthened India fits into this balance of power, see Richard L. Armitage, R. Nicolas Burns and Richard Fontaine, *Natural Allies: A Blueprint for the Future of U.S.-India Relations* (Washington D.C.: Center for a New American Security, 2010).

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