

Nuclear Risk Preventive Approaches in Adversarial Indo-Pakistan Scenario (First Draft)

By

Zafar Nawaz Jaspal♦

(18th European Conference on Modern South Asian Studies

Lund, Sweden, 6–9 July 2004)

India and Pakistan have active nuclear weapons programmes. Both states had rejected UN Resolution of 1172—which urges India and Pakistan in conjunction with other states that have not yet done so, to become party to the Nuclear Non-Proliferation Treaty (NPT) and Comprehensive Test Ban Treaty without delay and without conditions.¹ Significantly, so long as the global nuclear environment remains similar to what it is now, India and Pakistan would not move in the opposite direction towards denuclearization. It is because, India's traditional stance that the status of nuclear weaponry is a global rather than a regional problem determine the direction, level, and patterns of both India and Pakistan's future nuclear policy.

As long as the Indian decision makers perceive that the existing Nuclear Weapons States (NWS) either will not or cannot move toward deeper stockpile reductions that will ultimately lead to nuclear abolition, India will not countenance the prospect of rolling back its own nuclear program.² Thus, in this scenario, India would not alter its nuclear policy. Similarly, Pakistan would not succumb to any pressure for denuclearization as long as India refuses to move in a similar direction first.

The United States has been pressurizing and asking India and Pakistan to exercise nuclear restraint and finally end their nuclear weapons programmes. In the aftermath of September 11, 2001, however, Washington placed its South Asian nonproliferation issues on the back burner, because of its perceptions about India's strategic worth and Pakistan's need in countering terrorism. Consequently, the US ended nuclear sanctions against Indian and Pakistan. In future, the U.S. nonproliferation objectives in South Asia would remain secondary to other perceived political, strategic, and commercial goals.

The future of South Asia would remain overshadowed with obvious perils of nuclear arms race between India and Pakistan. India and Pakistan's nuclear programmes are prone to serious risks. Both countries are not parties to the NPT. Therefore, all their nuclear facilities are not subject to International Atomic Energy Agency safeguards. In addition, their nuclear facilities—power stations, research reactors and laboratories—are vulnerable to acts of sabotage and blatant terrorist attacks that could cause the release of dangerous amounts of radioactive materials. There is also a danger of theft of nuclear weapons and radioactive material. To be precise, the ongoing war against terrorism and

♦ Mr. Zafar Nawaz Jaspal is Assistant Professor at the Department of International Relations, Quaid-I-Azam University, Islamabad, Pakistan.

¹ Resolution 1172 (1998), adopted by the Security Council at its 3890th meeting on 6 June 1998. <<http://www.un.org/Docs/scres/1998/sres1172.htm>>

² Ashley J. Tellis, *India's Emerging Nuclear Posture: Between Recessed Deterrent and Ready Arsenal* (US: RAND, 2001), p. 21.

recent political events has lent a new urgency to the task of preventing the acquisition of such weapons by irresponsible groups.

India and Pakistan have had severe tension in their relations. Both countries have failed to solve their disputes by peaceful means. Strictly speaking Pakistan's defense structure, from conventional to nuclear capabilities, has been a response to the threat from India. The nuclear weapons have arguably prevented total war between the belligerent neighbors through deterrence, but their use would cause not only immediate catastrophic casualties but environmental damage that could threaten all human life, including aggressor, defender, and neutral bystander.

The Kargil crisis of 1999 made clear that India and Pakistan overt nuclearization did not remove the danger of war but certainly increased the stakes if war occurred. In 2002, both countries were twice at the brink of war.³ Strictly speaking, dangerous strategic competition is dominating the security paradigm of South Asia. Issues such as strategic planning, weaponization, deployment, and command and control may no longer be deferred.

The nuclear debate in India and Pakistan indicates that strategic thinking in India and Pakistan is strongly committed to use strategic nuclear assets as instruments of retribution incase nuclear deterrence fails between them. They, therefore, may well opt for operational nuclear forces and increase their fissile material stockpiles. The mating of nuclear warheads with delivery systems and placing them on hair-trigger alert would increase the chances of accidental, unauthorized or inadvertent nuclear use. Therefore, the subject—Nuclear risks in South Asia—has attracted great attention from strategic analysts. For example, the US officials and American media have called South Asia the most dangerous place on earth. Deputy Secretary of State, Richard Armitage, told reporters on October 11, 2001 that Kashmir “is the most dangerous place in the world”.⁴ Raju G. C. Thomas argued that “The periodic warnings by the West that India and Pakistan are on the brink of nuclear war may compound the dangers of nuclear war and become a self-fulfilling prophecy”.⁵

Whether a nuclearized South Asia is the most dangerous place on earth- is a debatable argument. The works of McGeorge Bundy and Kenneth Waltz suggested that nuclear weapons ensure greater peace in conflict-ridden regions.⁶ But one cannot underestimate the risks of nuclear catastrophe due to escalation from freedom movement in the Indian held Kashmir to conventional war and to nuclear exchanges. In addition

³ Amy Waldman, “India Announces Steps in Effort to End Its Conflict with Pakistan” *The New York Times*, May 3, 2003.

<<http://www.nytimes.com/2003/05/03/international/asia/03INDI.html?ex=1052539200&en=cbeb243969384622&ei=5040&partner=MOREOVER>>

⁴ “Kashmir Most Dangerous Place: US”, *Times of India*, October 12, 2001.

⁵ Raju G.C. Thomas, “Whither Nuclear India?” in D. R. Sar Desai and Raju G. C. Thomas, *Nuclear India in the Twenty-First Century* (New York: Palgrave-Macmillan, 2002), pp. 4-5.

⁶ McGeorge Bundy, *Danger and Survival: Choices About the Bomb in the First Fifty Years* (New York: Random House, 1988). Kenneth N. Waltz, “The Spread of Nuclear Weapons: More May Be Better”, *Adelphi Paper*, No. 171 (London: International Institute for Strategic Studies, 1981).

loose nuke or fissile materials falling into the wrong hands, command and control structures' problems, etc pose severe challenges to South Asian security.

India and Pakistan in particular and South Asia in general, are exposed to nuclear Armageddon and Nuclear terrorism. Who is to blame for continued tensions between the two neighbors? There is enough literature available on this issue. Moreover, scholars have written a lot on the causes of South Asian nuclearization. But the instantaneous question is that how the nuclear risks are avoided? What are the nuclear risks preventive approaches? These questions do attract the attention of many strategic analysts. The available literature indicates that they are debating and emphasizing on the nuclear weapons competition, the nuclear doctrines, and the horrendous consequences of the failure of nuclear deterrence between India and Pakistan. There are some interesting studies, which recommend a few strategies for addressing this problem.

India and Pakistan have negotiated a variety of confidence-building measures over the past decade. Many analysts concluded that Nuclear Confidence Building Measures (hereafter referred to as NCBMs) approach between India and Pakistan is a practicable solution to the *nuclear flash point* in South Asia. The NCBMs between India and Pakistan increase openness and transparency in military activities and in arms acquisitions, thus increasing the predictability of each other's actions and behavior.

It is believed that under the NCBMs arrangement, normal military activities would not mistakenly perceived as threatening. In addition, military activities that do pose a threat are immediately identifiable as out of the ordinary, allowing time for a state to seek clarification or react militarily if necessary. Admittedly, NCBMs approach is an important mechanism for avoiding the nuclear war between India and Pakistan, but it does not address adequately many other nuclear program-related risks. Therefore, both countries have to take bold steps—safeguard, verification, transparency and monitoring—for avoiding the nuclear risks' in South Asia.

Though it's a very optimistic wish that India and Pakistan would share information related with their nuclear warheads or military fissile materials (namely, holdings of highly enriched uranium and plutonium) with each other or the regional regime. The traditional strategic thought gives great importance to deception and suspense in the making of strategy. Which entails that information related to weapons' warheads and warhead materials remains a tightly kept secret in both antagonistic countries. However, the nuclear strategy, precisely nuclear deterrence theory requires the transparency and demonstration. Which is entirely opposite to keeping the weapons related information secret in totality. Therefore, it is argued that verification, transparent monitoring, etc arrangements would assist in stabilizing the deterrence arrangement between India and Pakistan.

The following study is an attempt to illustrate Nuclear Risk Preventive Approaches in an Adversarial Indo-Pakistan Scenario. The Preventive Approaches are categorized into four parts. Significantly, each part supplements one another. The first part analyzes the unilateral undertakings, which are primary barriers against the nuclear-

related risks. The second part focuses on the nuclear risk reduction measures, which require close collaboration for reducing the security dilemma in the subcontinent. The third and fourth sections assess carefully the positive impact of the participatory role of the regional and international communities in the nuclear risk preventive setup between India and Pakistan.

Preventive Approaches

Safeguarding nuclear arsenals is a major task for all the NWS in general, and which possess the largest number of weapons and a huge amount of nuclear radioactive material, in particular. A great deal of nuclear material, equipment, and component for nuclear weapons programs have been, and are being, smuggled from the United States and Russian Federation in the past. An early example of the illicit acquisition of nuclear material is the smuggling of the enriched uranium to Israel between 1962 and 1965. About 100 kilograms of highly enriched uranium disappeared from a factory in Apollo, Pennsylvania, owned by the Nuclear Materials and Equipment Corporation.⁷

In the aftermath of September 11, 2001, there has been a spate of news reports, which suggests a far more active nuclear black market. The resurgence in nuclear trafficking enhanced the efficacy of nuclear risk preventive approaches in an adversarial Indo-Pak scenario. Though as part of a well-considered nuclear policy, India and Pakistan have implemented stringent measures to ensure that their nuclear weapons are not used, either intentionally or by accident, except under properly authorized circumstances. Consequently, not a single nuclear theft or nuclear related accident has happened in Pakistan's nuclear installations, till the writing of these lines. The record of Indian nuclear industry is not too bad, except a few minor incidents of accidents and trafficking, which could be avoided by taking adequate measures.

Admittedly, the prevalent nuclear risk avoiding arrangements by India and Pakistan seems adequate. But the nuclear risk's problem is dynamic and the nuclear risk avoiding mechanism requires continuous up-gradation. Therefore, Delhi and Islamabad need reformation and improvement in their nuclear related arrangement in order to meet the new challenges and threats. Moreover, they have to improve the security of warhead transportation and storage sites, as well as develops a modern accounting and warhead-tracking system. In this regard, certainly, India and Pakistan need the assistance from developed world.

National Preventive Approaches

The National Preventive Approaches are the main barriers against the nuclear capability mismanagement or risks. They collectively ensure the safety and security of nuclear capabilities of the State. The following discussion prescribes those approaches, which India and Pakistan ought to take unilaterally. Their unilateral initiatives would effectively do away with many nuclear risks.

India and Pakistan Nuclear Doctrines: Declaration

⁷ Frank Barnaby, *The Role and Control of Weapons in the 1990s* (New York: Routledge, 1992), p. 64.

On August 17, 1999 an officially constituted advisory panel to the Indian National Security Council released India's draft Nuclear Doctrine.⁸ Significantly, the approval from the Indian parliament is awaited. Whereas, Pakistan's Nuclear Doctrine has yet to be announced. Admittedly, some of the nuclear doctrines' salient features are known. But these known features do not serve the real purpose, i.e. understanding the nuclear policy of India and Pakistan. In simple terms these arrangements do serve some purposes, but they are insufficient for sustainable and durable nuclear stability in the region. Therefore, it's imperative that both India and Pakistan should make clearer declarations, linking their doctrines to realistic and rational strategic objectives.

National Command Authorities: Institutionalization

The establishment of credible command and control systems is an important element of nuclear risk reduction. On February 2, 2000 Pakistan announced her National Command Authority (NCA). The NCA comprises Employment Control Committee and Development Control Committee as well as Strategic Plans Division, which will act as secretariat. The apex Employment Control Committee would be chaired by the head of government and include minister of foreign affairs (deputy chairman), minister of defense, minister of interior, chairman of joint chiefs of staff committee, services chiefs, director-general of Strategic Plans Division and technical advisers and others, as required by the chairman.⁹ This arrangement thwarts the possibility of any irrational decision by an individual. Notably, in the beginning of 2003, the NCA was chaired by the head of the state-President Pervaiz Musharraf instead of the head of government-Prime Minister Mir Zafurullah Jamali. It seems that there is an amendment in the NCA of Pakistan.

On January 4, 2003 India publicly announced a formal nuclear command structure under civilian control.¹⁰ Which made public a set of political principles and administrative arrangements to manage its arsenal of atomic weapons. Although the broad outline of India's nuclear doctrine was already known, but the nature and chain of its command and control over the nuclear weapons had remained unclear. The Indian Cabinet Committee on Security (CCS), however, did not announce all. Missing from its statement is the actual composition of the NCA at its Political and Executive levels.

The CCS also mentioned that it had reviewed and approved the arrangements for alternate chains of command for retaliatory nuclear strikes in all eventualities. This is a reference to a situation in which the Prime Minister may be incapacitated during a crisis. But the CCS did not reveal how the power to press the nuclear button would move down to the political chain in the event of such a contingency.

⁸ Text of the Draft Report of National Security Advisory Board on Indian Nuclear Doctrine, announced on August 17, 1999 (New Delhi: Government of India, August 17, 1999).

⁹ "National Command Authority formed", *Dawn*, February 3, 2000.

¹⁰ C. Raja Mohan, "Nuclear Command Authority comes into being", *The Hindu*, January 5, 2003. <<http://www.thehindu.com/stories/2003010504810100.htm>>, Josy Joseph, "India sets up Strategic Forces Command", *Rediff. Com*, January 4, 2003, <http://www.rediff.com/news/2003/jan/04nuke1.htm> and see Kerry Boyd, "India Establishes Formal Nuclear Command Structure", *Arms Control Today*, January/February 2003.

Importantly, the acute problem—technological backwardness—exists in the process of succession within the command authority. India and Pakistan lack the ability to install uninterrupted communications channels between different levels of succession. The need is that both states should rectify these drawbacks in their command structures. In addition, the negative statements by the Indian and Pakistani leadership must be avoided, because such statements escalate bilateral crises and constitute a form of verbal brinkmanship. Which pose a serious challenge to the deterrence stability between India and Pakistan.

Personnel Reliability Program (PRP)

Nuclear weapons shall not be subject to loss, theft, sabotage, unauthorized use, unauthorized destruction, unauthorized disablement, jettison, or accidental damage. Therefore, only those personnel who qualified PRP would be allowed to perform duties associated with nuclear weapons, and they shall be continuously evaluated for adherence to PRP standards. In addition, procedural controls, such as the two-man rule (no single employee is left alone in a sensitive area), decrease the chances of nuclear mishaps. Scott D. Sagan wrote that “individual military officers certainly have become mentally unstable; but psychological testing under the military’s PRP and the two-man rule system (under which two people are required to be involved in all nuclear weapons operations) are designed to ensure that no unstable individual could ever gain control of a US nuclear weapons”.¹¹ The important qualification standards of PRP are the following:

1. Physical competence, mental alertness, and technical proficiency commensurate with duty requirements.
2. Evidence of dependability in accepting responsibilities and effectively performing in an approved manner; flexibility in adjusting to changes in the working environment.
3. Evidence of good social adjustment, emotional stability, and ability to exercise sound judgment in meeting adverse or emergency situations.
4. Positive attitude toward nuclear weapon duty.

Any of the following traits or conduct should be grounds for the disqualification or decertification of individuals from the PRP standards:

1. Alcohol Abuse—individual(s) diagnosed as alcohol dependent.
2. Drug Abuse.
3. Any individual found to have been involved in the unauthorized trafficking, cultivating, processing, manufacturing, or sale of any narcotic or dangerous drug, shall render an individual ineligible for PRP duties.

Significantly, India and Pakistan’s armed forces employ a rigorous clearance procedure. In addition, the officers who are appointed at sensitive posts require medical clearance to prove that they have no psychiatric problems. These procedures remove the risk of unstable civilian or military officers getting control of a nuclear weapon. However, the Western analysts expressed their reservations about the PRP arrangements of India and Pakistan. Therefore, it is important that India and Pakistan improve their

¹¹Scott D. Sagan, *The Limits of Safety: Organizations, Accidents, and Nuclear Weapons* (Princeton: Princeton University Press, 1993), p. 250.

PRP standards, by rectifying the drawbacks, which had been pointed out by the neutral observers.

Check on the employees

Without the assistance of the employee(s) of nuclear facilities, theft of nuclear material from the facilities is very difficult. The nuclear trafficking in the former Soviet Union reveals the involvement of the employees in the theft cases. In 1992, for example, an employee of the facility stole approximately 1.5 kilogram of Highly Enriched Uranium from the Luch Scientific Production Association in Podolsk, Russia.¹² William C. Potter and Elena Sokova wrote: “sources of material for the ten cases in 1992-1995 varied from nuclear submarines fuel storage sites to research institutes to fuel fabrications facilities. In the majority of cases, the material was stolen by an employee of the facility acting alone and motivated by dire economic circumstances”.¹³

The New Delhi and Islamabad must take precautionary measures to avoid or disrupt the nexus between the employees of nuclear facilities/research institutes and organized criminal groups—more inclined today to accept the risk of nuclear trafficking because of the promise of financial gain. Significantly, recently the government of Pakistan has started scientists’ de-briefing program. Despite the public opposition, the government is continuing the process of de-briefing. This would control the nuclear scientific community in Pakistan from transferring of nuclear weapons know how to other potential nuclear proliferates. Similar, program is missing in India. Therefore, it seems essential that the Indians would take appropriate measures in this regard.

Transparency mechanism: Maintenance of Data

India and Pakistan should maintain a nuclear weapons register. The nuclear weapons register maintains the following information:

- Data with regard to weapons holdings.
- Data regarding nuclear weapons storage sites and facilities.
- Data about the information on military stocks of fissile material.

This data would be used for extending bilateral transparency and confidence-building mechanisms related to nuclear weapons and fissile material holdings between India and Pakistan.

Establishing trained Units to deal with nuclear smuggling

¹² William C. Potter and Elena Sokova, “Illicit Nuclear Trafficking in the NIS: What’s New? What’s True?”, *The Nonproliferation Review*, Vol. 9, No. 2 Summer 2002. p. 113.

¹³ Ibid.

The possibility that nuclear weapons or their essential ingredients could be stolen and smuggled to terrorist organizations is an important risk. Well-organized terrorist groups could potentially make at least a crude nuclear bomb if they could get enough of the necessary plutonium or highly enriched uranium (HEU). The amount of material needed for a bomb is small—4 kilograms of plutonium, an amount smaller than a soda can—and about three times that amount of HEU is potentially enough for a nuclear weapon.¹⁴

Both India and Pakistan, therefore, should have at least a small unit of law enforcement officers capable of investigating nuclear smuggling cases. These officers would have the training and equipment to distinguish between, for example, intensely radioactive cesium and weapon-usable plutonium, or between relatively innocuous low enriched uranium and weapon usable highly enriched uranium.¹⁵

Bilateral Preventive Approaches

Like National Preventive Approaches, which require unilateral undertakings, the Bilateral Preventive Approaches that need close collaboration, have been receiving a high priority in the process of nuclear risk reduction process. It is because unilateral steps are widely viewed as essential, but insufficient. India and Pakistan, therefore, sincerely engage in cooperative arrangements to build trust, control their nuclear competition, and reduce the security dilemma. The following discussion would indicate the possible areas where the bilateral cooperation is essential and possible.

Implementation of Lahore Memorandum of Understanding

In February 1999, during the Lahore Summit the Memorandum of Understanding (MOU) was signed by Indian Foreign Secretary K. Raghunath and Pakistani Foreign Secretary Shamshad Ahmad. According to the MOU, both India and Pakistan had approved confidence-building measures for improving their security environment. Seven of the eight points enlisted in the MOU directly addressed nuclear reduction for the first time. The issues decided upon were: -

1. The two sides shall engage in bilateral consultations on security concepts, and nuclear doctrines, with a view to developing measures for confidence building in the nuclear and conventional fields, aimed at avoidance of conflict.
2. The two sides would undertake to provide each other with advance notification in respect of ballistic missile flight tests, and shall conclude a bilateral agreement in this regard.
3. The sides are fully commitment to undertake national measures to reduce the risks of accidental or unauthorized use of nuclear weapons under their respective control. The two sides further undertake to notify each other immediately in the event of any

¹⁴ Matthew Bunn, “A Detailed Analysis of Urgently Needed New Steps to Control Warheads and Fissile Material”, in Joseph Cirincione, edit., *Repairing The Regime: Preventing The Spread of Weapons of Mass Destruction* (New York: Routledge, 2000), p. 74.

¹⁵ Ibid., pp. 103, 104

accidental, unauthorized or unexplained incident that could create the risk of fallout with adverse consequences for both sides, or an outbreak of a nuclear war between the two countries, as well as to adopt measures aimed at diminishing the possibility of such actions, or such incidents being misinterpreted by the other. The two sides shall identify/establish appropriate communication mechanism for this purpose.

4. The two sides shall continue to abide by their respective unilateral moratorium on conducting further nuclear test explosions unless either side, in exercise of its national sovereignty, decides that extraordinary events have jeopardized its supreme interests.
5. The two sides shall conclude an agreement on prevention of incidents at sea in order to ensure safety of navigation by naval vessels, and aircraft belonging to the two sides.
6. The two sides shall periodically review the implementation of existing (CBMs) and where necessary, set up appropriate consultative mechanism to monitor and ensure effective implementation of these CBMs.
7. The two sides shall undertake a review of the existing communication links (e.g. between the respective Directors- General, Military Operations with a view to upgrading and improving these links, and to provide for fail-safe and secure communications.)
8. The two sides shall engage in bilateral consultations on security, disarmament and non-proliferation issues within the context of negotiations on these issues in multilateral fora.¹⁶

The technical details of these measures were to be worked out by experts of the two sides before mid 1999, with a view to reaching bilateral agreements, however it never moved beyond the signing ceremony. In fact, the Kargil Conflict undermined the process of NCBMs, which was initiated in the post May 1998 nuclear weapon tests. The official dialogue process between the belligerent neighbors would be revived and the measures listed in the MOU could be pursued, sincerely.

Increase the Strategic Warning Time: Bilateral Agreement

The “Strategic Warning Time” term denotes the time interval between the emergence of a nuclear threat and one’s ability to respond to it. So far the world has sought to bring it as close to zero as possible. In India-Pakistan case we need to fix it to a

¹⁶ “Text of Document signed at Lahore,” *Dawn*, February 22, 1999. Text of the Lahore Declaration, February 21, 1999. <<http://www.ipcs.org/documents/1999/1-jan-mar.htm>> See also Chris Gagne, “Nuclear Risk Reduction in South Asia: Building on Common Ground”, in Michael Krepon and Chris Gagne, ed., *The Stability-Instability Paradox: Nuclear Weapons and Brinkmanship in South Asia*, Report No. 38 (Washington, Dc.: The Henry L. Stimson Center, June 2001), p. 52.

The MoU signed in Lahore was the result of the nine months long parallel diplomatic dialogue facilitated by the US, which brought the two sides to negotiating tables. The US initiative primarily was to encourage India and Pakistan into taking five steps to help avoid a destabilizing nuclear and missile competition, reduce regional tension and bolster global non-proliferation. The main contours of the Talbott Mission broadly were a) declaring a voluntary moratorium on further testing. b) Further refrain from producing more fissile material. c) Observing a restraint in the development and deployment of missiles and aircraft capable of carrying weapons of mass destruction. d) Tightening export control on sensitive material and technology. e) Finally to engage into a direct, high-level frequent and above all a productive dialogue.

reasonable interval, say forty minutes, so that a potentially disastrous situation can be defused through dialogue. For that, time is essential. This solution will imply putting a physical distance between the delivery vehicle and the warhead.¹⁷ Both states would place de-alerted warheads in storage sites at some distance from their launch vehicles. They would also allow placing the neutral observers at those sites, with authority only to count what went in and what went out. The increase in warning time, certainly, reduced likelihood of preemption success.

Non-deployment of nuclear weapons: Bilateral Agreement

The non-weaponized deterrence regime between India and Pakistan is transformed into weaponized regime after their nuclear tests and both states' policies of weaponization. India and Pakistan had commissioned their short and intermediate range nuclear capable ballistic missiles to their armed forces. The deployment of ballistic missiles would pose severe consequential security risks given the relatively short distances between major population centers in India and Pakistan and the brief time required for missiles to travel such distances, i.e. three to eleven minutes.¹⁸

The deployment of nuclear weapons compresses decision-making cycles for national leaders and battlefield commanders, reducing stability during times of crisis. Moreover, operational capabilities would create a hair trigger situation that would put societies under an acute psychological strain. Moreover, in an era of potential nuclear terrorism, the theft of a nuclear weapon from a storage site could spell an eventual disaster for a city, but the seizure of a strategic missile or group of missiles ready for immediate firing could be apocalyptic for entire nations.¹⁹

Therefore, the non-deployment of nuclear weapons by India and Pakistan would be an effective strategy to avoid one of the biggest terrorist threats—which stem largely from the extremely high launch-readiness of tactical and strategic missiles. To be precise, it is critically important that India and Pakistan avoid going further down the nuclear road as a buildup of operational capabilities.²⁰ For achieving this objective they must sign non-deployment of nuclear weapons agreement.

¹⁷ Shaukat Qadir, "Op-ed: Nuclear South Asia: reducing risks", *Daily Times*, May 11, 2002.
<<http://www.dailytimes.com.pk/default.asp?date=5/11/02>>

¹⁸ Pakistan's geographical narrowness or lack of strategic depth and the Indians' commitment to introduce more sophisticated nuclear capable delivery systems, like cruise missile, and ballistic missile defense systems undermine Pakistan's security. Consequently, limit its choices during the crisis.

¹⁹ Dr Bruce G Blair, "The new nuclear threat", *Daily Times*, May 5, 2003.

²⁰ India's declared China's specific nuclear deterrent compels her to deploy her nuclear capable missiles or operationalize its nuclear capabilities. But many analysts, for example Nazir Kamal believe that "India does not need to nuclearize against China. China has a no-first-use policy and a conventional conflict between them, as in the past, is most likely to be limited in scope, both geographically and politically. They are also well-matched along the Himalayan frontiers. Furthermore, the danger of conflict between them is much lower than between India and Pakistan, as they have moved toward a significant reduction of border tension over the past decade." See Nazir Kamal, "Pakistani Perceptions and Prospects of Reducing the Nuclear Danger in South Asia", *Cooperative Monitoring Center Occasional Paper/ 6* (US: Sandia National Laboratories, January 1991).

Nuclear Risk Reduction Centers

Communication systems form a necessary backbone for threat-reduction and monitoring. Kent L. Biringer argued that “the process of managing missile possession in tense regions demands a reliable, secure, dedicated, and timely communications infrastructure”.²¹ India and Pakistan would establish Nuclear Risk Reduction Centers (NRRCs) in their capitals and to establish a special facsimile communications link between these Centers. Michael Krepon wrote, “....key element in Cold War nuclear risk reduction was the establishment of reliable lines of communication across borders, for both political and military leaders”.²² The Centers are intended to supplement existing means of communication and provide direct, reliable, high-speed systems for the transmission of notifications and communications at the Government-to-Government level.

The Centers communicate by direct satellite links that can transmit rapidly full texts and graphics. In addition, NRRC could be manned by mixed groups of officials from both sides to defuse crises before they erupt. In this respect, the Centers have a communications capability very similar to -- but separate from -- the modernized "Hot Line," which is reserved for Heads of Government.

The NRRCs would serve an effective, exclusive and a dedicated technical means of official communication for exchanging rapid, accurate and factual information. This could help prevent misperception or unintended reactions that could lead to accidental or inadvertent escalation. The second element of NRRCs may be a verification mechanism, which could prove essential in building trust. It may include observers or inspectors to physically verify the authenticity of intelligence when there is doubt. Certainly, it could set a positive precedent by incorporating transparency and verification measures into military procedures. Consequently, it could serve to build trust and confidence between two sides.²³

Force Limitation Zone Mutual Agreement

The nuclear danger could also be reduced through conventional stability. It is because; the strategic experts have a consensus that a nuclear strike between India and Pakistan would be the cause of an escalation of conventional conflict. A force limitation zone along the border would lower armament levels in forward positions and eliminate the threat of surprise attack, thereby greatly reducing the danger of miscalculation.²⁴ Significantly, an agreement exists in the Indian-Pakistan context prohibiting military

²¹ Kent L. Biringer, “Missile Threat Reduction and Monitoring in South Asia”, in in Michael Krepon and Chris Gagne, ed., Op. Cit, p. 68.

²² Michael Krepon, “Nuclear Risk Reduction: Is Cold War Experience Applicable to Southern Asia”, in Michael Krepon and Chris Gagne, ed., Op. Cit, p. 6.

²³ Colonel Rafi uz Zaman Khan, “Pakistan and India: Can NRRCs Help Strengthen Peace?” *Occasional Paper No. 49* (Washington Dc. : The Henry L. Stimson Center, December 2002).
< <http://www.stimson.org/southasia/pdf/nrrcsouthasia.pdf>>.

²⁴ Nazir Kamal, op. cit.

aircraft from flying within specified distances of the border, which is generally being observed.

Mutual Ban on Nuclear Exercises

When states conduct their nuclear related military exercises, it gives impression that they would be making operational their nuclear capabilities. During the summer 2001 Indian military exercise Poorna Vijay (complete victory) aroused many questions among the Pakistani policy makers. In fact the official stated purpose of the exercise was to evaluate concepts and practice battle procedures during offensive and defensive operations on the future battlefield, with a nuclear backdrop.

Islamabad viewed that the exercise was an attempt by India to legitimize conventional war waged under a nuclear umbrella. Therefore, in July 2002, Pakistan conducted a joint weeklong war game. One of the important objectives of the war game was to enhance joint planning and to explore ways to increase Pakistan's tactical planning capabilities, especially its nuclear deterrence. Importantly, the Strategic Plans Directorate (SPD) also participated in the nuclear related war games.²⁵ This indicates that in the war game Pakistan brought nuclear factor into the practical consideration.

The nuclear related military exercises by India and Pakistan further endanger the regional strategic environment. These exercises do not only increase the importance of nuclear weapons in the military calculations of both states, but also promote a spiral of competition that usually manifests itself in an arms race that, ultimately, leads to war. Its because, these exercises increase misperceptions and mistrust. Therefore, such nuclear related military exercises ought to be avoided. In this context, the already existing India-Pakistan agreement for restriction on certain military exercises should be updated.

Bilateral Tactical Nuclear Weapons Ban Agreement

The definition of "tactical," or "sub strategic," nuclear weapons is somewhat tenuous and can include many criteria, such as range, yield, target, national ownership, delivery vehicle, and capability. In simple terms, tactical nuclear weapons have smaller explosive power and limited blast damage radii measured in hundred of meters, cause relatively low levels of casualties than strategic nuclear weapons. The tactical nuclear weapons are intended for "battlefield" use against enemy forces, rather than against enemy cities or strategic nuclear forces. Tactical nuclear weapons include a broad array of devices, from so-called nuclear landmines and nuclear artillery shells to air-dropped or missile-launched nuclear warheads. Their yields can be relatively low (0.1 kiloton), equal

²⁵ Dr. Ayesha Siddiqi-Aga, "War-gamming in a nuclear environment", *The Friday Times*, July 26 – August 1, 2002. < <http://www.thefridaytimes.com/news6a.htm>. >

to those of the bombs dropped on Hiroshima and Nagasaki (15-20 kilotons), or very large (1 megaton).²⁶

There are chances that India and Pakistan would deploy very low yield nuclear weapons in the sub-kiloton or 1-2 kiloton range because of their apparent utility on a battlefield and in compact form can even be fired from artillery guns. This apprehension is valid, because both India and Pakistan tested small yield nuclear weapons. On May 28, 1998, for example, Pakistan conducted four tests of small/ low yield weapons. The collective yield of these four weapons was 4-10 kiloton. India had also demonstrated such a capability through its sub-kiloton tests in May 1998. According to Dr. R. Chidambaram India had developed tactical nuclear weapons.²⁷

Significantly, if India and Pakistan use tactical nuclear weapons in the battlefield, they have strategic implications. Pakistan's major industrial and populous cities are near to its eastern border. Secondly the use of tactical nuclear weapons increases the possibility of escalation. In 1962, President Kennedy said, "The decision to use any kind of a nuclear weapon, even tactical ones, presents such a risk of getting out of control so quickly...".²⁸ The uncertainties associated with the employment of tactical nuclear weapons are simply too great. Therefore, the tactical nuclear weapons use by India would have strategic implications for Pakistan and vice versa. Moreover, they could lead to the all-out nuclear war.

The smallness of tactical nuclear weapons and their trouble-free portability increases their vulnerability to theft by terrorists. Even in the hands of state militaries, tactical nuclear weapons are more susceptible to unauthorized or accidental use than strategic weapons—they are often deployed near the front line; they are far more sensitive to communication problems under crisis conditions; and they can be fired by a soldier in the field without going through the stringent safety precautions that govern the launch of strategic nuclear weapons. P. R. Chari argued that "War-fighting requires tactical nuclear weapons which could be very destabilizing in the sub-continental scenario".²⁹

Therefore, it's imperative that India and Pakistan negotiate a bilateral treaty for countering the tactical nuclear weapons threat. Of course such an agreement requires intrusive monitoring and verification. The mistrust between India and Pakistan does not ensure the practicability of such an agreement. But the dividends of an agreement between India and Pakistan disallowing the development and deployment of tactical nuclear weapons are impressive in terms of deterrence stability.

²⁶ Alistair Millar, "The Pressing Need for Tactical Nuclear Weapons Control", *Arms Control Today*, May 2002. < http://www.armscontrol.org/act/2002_05/millarmay02.asp

²⁷ Brahma Chellaney, "India's Nuclear Planning, Force Structure, Doctrine and Arms Control Posture", in Dr. Digumarti Bhaskara Rao, *Nuclear Materials Issue and Concerns*, Vol. 11(New Delhi: Discovery Publishing House, 2001), p. 997.

²⁸ Stansfield Turner, "The Specter of Nuclear Proliferation", *Security Dialogue*, Vol. 29(3) (SAGE Publications, 1998), p. 296.

²⁹ P. R. Chari, "Nuclear Restraint, Nuclear Risk Reduction, and the Security-Insecurity Paradox in South Asia", in Michael Krepon and Chris Gagne, ed., *Op. Cit.*, p. 32.

Nuclear Data Exchange Agreement to Reduce the Threat of Nuclear Terrorism

The Terrorists' patterns have fundamentally changed since the last quarter of the twentieth century. Therefore, new trends are different from old trends along at least three related dimensions- fewer incidents, greater casualties; the growth of religious terrorism; and Nuclear, Biological, Chemical terrorism. The emerging new trends warn increase in lethality and ruthlessness in death and destruction. In the light of these emerging trends in terrorism, the most serious threat to the regional security is that a small portion of India or Pakistan nuclear stockpile would fall into the hands of terrorists' organizations, which have been involved in terrorists' activities in South Asia.

India and Pakistan must negotiate data exchange agreement about their respective arsenals and a comprehensive inventory of all nuclear weapons and material in both countries, for reducing the serious threat of nuclear terrorism.

Qualitative Restrain on the nuclear weapons

India and Pakistan face a choice between the assured dangers of proliferation or the challenges of disarmament. The better choice is to cap, progressive reduction, and complete elimination of nuclear weapons. But the international and regional environment and their security needs do not allow them to opt for this better choice. What's possible in the current scenario is that they opt the strategy of minimum nuclear deterrence keeping in view of the reality of nuclear asymmetry and refrain from developing overkill nuclear capabilities. According to P. R. Chari, "Pakistan need to accept the fact that India's nuclear capability has to be designed against Pakistan and China, just as India would have to accept that China's nuclear capability must configure to the United States and Russia. Strict parity would be unrealistic in the light of differing security perceptions, and seeking this goal could lead to an unrestrained arms race".³⁰

India and Pakistan's geo-strategic environment also permits them that they could live with the first generation of nuclear weapons. This entail that they do not require further nuclear weapons tests. In addition, minimum nuclear deterrence also permits them to keep fissile material of nuclear weapons limited. Thus, the favorable move is that both India and Pakistan either join the international movement for CTBT and FMCT or they make similar arrangements at the regional level.³¹

Bilateral Agreement on the Monitoring System

³⁰ Ibid., pp. 32-33.

³¹ Both India and Pakistan have declared a moratorium on nuclear tests and have said that a test ban would not impinge on their security, as the tests conducted in May 1998 have given them an assured capability. However, recently it was reported in the newspaper that India had been planning for conducting some more nuclear tests.

The bilateral agreements, of course, need a system of monitoring of nuclear storage areas and nuclear facilities. This indicates that monitoring system involves the declaration of nuclear storage sites and facilities and permitting monitoring team to inspect them.

Technical monitoring of storage areas involves use of a number of sensors to detect activity level in or around the facility. Ground sensors such as seismic, magnetic, or acoustic sensors could be used to detect movement around the facility boundary or on access roads leading to the facility. Through these sensors data could be collected and stored on site and sent by radio, satellite, phone, Internet or other communication means to party/parties of the agreement.³²

Technical monitoring of sensitive facilities involves sensors such as door switches, motion sensors, or electronic seals to detect entry or activity in the facility. The seals would indicate any incident of tampering with containers, monitoring equipment, or portions of the facility that have been closed and sealed. Moreover, the technique about the use of sensor-triggered video systems, which capture a digital image when another sensor is activated, could be used to better characterize any detected interior or exterior event. The video systems based on periodic recording of video images in nuclear facilities of interest.³³ Admittedly, both India and Pakistan lack such technologies at this time, but they would develop or procure such technical equipment from the developed world.

Resolving Kashmir Issue

Kashmir is the most important dispute between Pakistan and India. Both countries have dominant interests in Kashmir. They have rigid and contradicting approaches regarding the solution of Kashmir problem. Unless there is flexibility in both states stances, the solution is impossible. Both India and Pakistan have to acknowledge the fact that war between India and Pakistan is not a solution for the Kashmir dispute. President Musharraf has categorically stated in Agra 2001 during Summit and repeated afterward (at many occasions) that dialogue over the issue between the parties is a pragmatic approach for the resolution of the dispute.

Significantly, the present environment is quite different from 1948. The concepts and approaches that were operative in late 1940s do not help in the current scenario. Therefore, the Kashmir dispute requires innovative approaches for its solution. We have to take into account the realities and develop new models for the solution. Sticking to past could further deteriorate the relations between India and Pakistan.

The settlement of Kashmir dispute, certainly, dramatically lowers the tension between India and Pakistan. It would have a positive impact on the implementation of

³² Kent L. Biringer, "Missile Threat Reduction and Monitoring in South Asia", in in Michael Krepon and Chris Gagne, ed., *Op. Cit.*, p. 73.

³³ *Ibid.*

bilateral agreements between India and Pakistan. Consequently, both states would be in a better situation to cap, reverse and finally eliminate their nuclear weapons programmes. President Pervaiz Mushaaraaf had expressed a similar desire. In response to a question during an interview broadcast on May 4, 2003 night on television channel ARY, the president said if the Kashmir dispute is resolved and there is peace and security in the region, “South Asia could be denuclearised mutually by India and Pakistan”.³⁴

Regional Preventive Approaches

The mutual trust and confidence between India and Pakistan, realistically, does not exist and may not exist in the near future. Therefore, there are ample chances that the miscalculation due to antagonistic relations and ethnocentric strategic culture would lead to South Asian destruction. The strategic analysts have a consensus that the aftereffects of the future total war between India and Pakistan would not be limited to the subcontinent. But they do have regional, in particular and international, in general perilous backlash.

It’s deplorable that currently there is no regional (South Asian) nuclear non-proliferation or risk-avoiding regime in place. Though India had rejected Pakistan’s proposal for creating South Asia as a nuclear weapon free zone, it doesn’t mean that it would oppose all regional nuclear risk avoiding initiatives. Christoph Bertram argued, “As the South Asian experience once again demonstrates, however, the main push to go nuclear lies in regional competition and conflict. Global arms restraint will, therefore, only be effective if underpinned by regional arrangements of cooperation”.³⁵

India and Pakistan, certainly, accept or accommodate those regional initiatives, which do not undermine their nuclear deterrence—India against China and Pakistan against India. There are many areas where the non-nuclear weapon states of South Asia could play an impressive role. For instance, monitoring of nuclear facilities, checking and assisting in safeguarding the nuclear facilities, verification of data, nuclear confidence building measures, etc.

The credibility and working of the bilateral agreements, for example, requires a regional facilitator, who monitors and makes non-biased judgement about the commitment and sincerity of both states with the bilateral agreements. The facilitator must be a group of regional states, those securities have been jeopardized by the overt nuclearization of India and Pakistan. In fact, they have a legitimate interest in avoiding the nuclear risks in South Asia.

Therefore, it seems appropriate that the South Asian states constitute a regional forum/ regime for addressing nuclear related risks in South Asia. Admittedly, the success of this regime depends upon the sincerity and commitment of India and Pakistan with the

³⁴ “Mushaaraaf links nuke-free S Asia to Kashmir solution”, *Daily Times*, May 5, 2003.

³⁵ Christoph Bertram, “The Future of Deterrence and Non-Proliferation in the Asian Context”, in Jasjit Singh, ed. *Asia’s New Dawn: The Challenges to Peace and Security* (New Delhi: Knowledge World, 2000), p. 180

regime. Nevertheless, undermining the legitimate concerns of the South Asian neighbors is not an easy task for both the regional nuclear weapon states.

Nuclear Warheads and Military Fissile Material: The Regional Verification Regime

Agreeing on and setting up an effective regional verification regime is usually a long-term process. This process often starts with confidence building and transparency measures that eventually evolve into more intrusive verification regime. Especially in sensitive areas related to national security, prior experience with declaration and inspection procedures can facilitate the implementation of complex verification arrangements. The favorable precedent in this regard is that in February 1999, during the Lahore summit India and Pakistan agreed in promulgation of mutually agreed confidence-building measures for improving the security environment.³⁶

Under the regional verification regime both India and Pakistan will have to declare the numbers and locations of their nuclear weapons to the regime secretariat. They will probably also be required to publish a historical account of their nuclear weapons programmes. Notably, the exchange of nuclear information between the two countries has a precedent in the agreement to annually exchange information on the location of nuclear installations as per the 1991 Agreement on the Non-attack of Nuclear Facilities. Under this agreement, India and Pakistan are obliged to exchange lists of nuclear facilities on the first business day of each year. Thus far, lists have been exchanged each other. Such a "baseline declaration" submitted by both countries would establish the basis from which the level of nuclear weapons proliferation will be monitored. This objective, however, would be only achieved through the repeated process of declarations by both countries and their off-site and on-site monitoring activities.³⁷

International Preventive Approach

The Western States led by the US, in particularly, and other major powers in general, pressurized both India and Pakistan that they should cap, roll back and finally eliminate their nuclear weapons capabilities. Among international community the Americans have been very active and they have adopted a carrot and stick policy against India and Pakistan. When incentives had been ineffective, the U.S. had tried to apply sanctions, through denial of financial aid, economic assistance, military cooperation, and technology access. However, these sanctions endanger political relations and are

³⁶ See "Text of Document signed at Lahore," *Dawn*, February 22, 1999. Text of the Lahore Declaration, February 21, 1999.

<<http://www.ipcs.org/documents/1999/1-jan-mar.htm>>

³⁷ Russia and the United States have acquired verification experience during the implementation of the Intermediate-Range Nuclear Forces (INF), Strategic Arms Limitation Talks (SALT), and Strategic Arms Reduction (START) treaties, which limit numbers and types of certain nuclear delivery vehicles and deployed nuclear warheads. Both countries have already agreed in principle on a number of additional measures that would constitute first steps in implementing transparency and confidence building measures. Oliver Meier, "The Verification of a Nuclear Weapon Free World: Closing the Gaps", *Verification Research, Training and Information Centre*.

< <http://www.reachingcriticalwill.org/nwc/mon2oliver.html>>

frequently controversial. Sanctions against India and Pakistan did not prevent those countries from developing nuclear weapons and their delivery vehicles. Importantly, the sanctions were lifted in the aftermath of the September 11 attack to support anti-terrorism action in Afghanistan.

The shift in the US policy from sanctions to engagement has provided an opportunity to India and Pakistan that they would receive assistance from the developed world in the field of nuclear know-how, related with nuclear safety and security. The US and other States are in a position to guide and provide technical nuclear-related assistance to India and Pakistan. The Nunn-Lugar "cooperative threat reduction" program to improve the security of Russia's nuclear materials, technology and expertise can serve as a precedent in addressing nuclear-related security problems in India and Pakistan.

Recently, India signed an agreement with US to receive a dual-use technology and enhancing its non-defense nuclear and space programs.³⁸ Importantly, the US anti-proliferation laws prohibit transfer of dual use technology to countries that are not party to the NPT. Moreover, nuclear weapon's technology trade is banned under the Article 1 of the NPT. Thus, India does not qualify to receive technological assistance from the US in the nuclear field.

Nevertheless, one cannot ignore the dual policy of the US in the nuclear sphere. The US efforts to control the international diffusion of nuclear and missiles and other advanced military technologies traditionally have focused on protectionist and punitive measures against countries pursuing military programs which the United States does not sanction. For example, the US and Israel defense collaboration negate its anti-proliferation laws. What's the need is that the US export restrictions should be waived to transfer the technologies—vaults, sensors, alarms, tamper-proof seals, closed-circuit cameras and labels needed to protect India and Pakistan's nuclear facilities and materials from thefts, accidents and unauthorized use.

The dual use technological assistance not only improves the safety and security of nuclear facilities, but it also improves India and Pakistan's ability to deploy a warhead on a ballistic missile. It may signal other potential nuclear weapon states that the US and its allies are not serious about their non-proliferation goals. However, assisting India and Pakistan to improve the security of their nuclear facilities and weapons storage facilities is permissible because this assistance would not contribute to advances in India and Pakistan's nuclear arsenal.

Thus, there are some areas, where the developed world in general and the US in particular must assist India and Pakistan, without violating their national law(s) and international commitments. For example, the establishment of Nuclear Risk Reduction Centers between India and Pakistan at this stage requires the assistance from the US and

³⁸In the first week of May 2003, India's National Security Adviser Birjesh Mishra made the request during a series of meetings with President George W. Bush and other senior US officials in Washington. Jawed Naqvi, "US maintaining double standard, says Vajpayee: N-weapons technology", *Dawn*, May 12, 2003.

Russian Federation. Both the US and Russian Federation could share with them their experience, train both countries the technicians and give them the relevant technology.

Conclusion

Since May 1998, there is always a strong possibility exist that catastrophe awaiting India and Pakistan, if they play their nuclear cards badly and they make nuclear-related mistakes. Moreover, the nuclear risks in South Asia will further increase once India and Pakistan crossed the threshold of nuclear weaponization and deployment. With the nuclear weapons deployment, the possibility of inadvertent /unauthorized use of nuclear weapons and nuclear accidents, etc becomes more critical.

Presently, both India and Pakistan claim that they did not integrate warhead components into a military usable weapon system and also not transfer nuclear devices to military units for storage and rapid mating with delivery systems at military bases. For how long India and Pakistan will observe this restraint? If the present tension between the belligerent neighbors prevail, there are chances that they will deploy their nuclear weapons in the near future. Which will increase the nuclear risks in the region. Thus, its imperative that India and Pakistan chalk out strategies, which would not only check or prevent the nuclear weaponization and deployment, but also address adequately, their current nuclear programs' associated risks in both states.

What's the immediate need is a sustainable nuclear risk avoidance process in South Asia. Is it possible? India and Pakistan hostile relations do undermine the prospects of such process. But the encouraging factor between India and Pakistan is that despite the severe tension at the common border, they have been mindful and implementing their nuclear agreements. In addition, since SAARC summit of 2004, the relations between India and Pakistan have been improving. The meeting between Prime Minister Vajpayee and President Pervaiz Musharraf in Islamabad had opened a new chapter of normalization. The people in both states are optimistic about the future developments between India and Pakistan.

Importantly, the existing bilateral nuclear arrangements are not sufficient and satisfying. Both states have to improve collaborative and unilateral actions for avoiding nuclear risk threat. Therefore, India and Pakistan should take immediate unilateral steps for enhancing the safety and security of their nuclear infrastructure and do maintain the transparent record of their nuclear capabilities. They adopt bilateral transparency and confidence-building mechanisms related to nuclear weapons and fissile material holdings. Therefore, they must start serious, sustained, substantive and purposeful official dialogue. Negotiating, constituting and institutionalizing bilateral, regional and international nuclear risks avoiding arrangements/ regimes would definitely strengthen the unilateral and bilateral nuclear risk avoiding arrangements.

End