Chapter 5: Conclusion

Over the last eight years, since India conducted its five nuclear tests in May 1998, the security dynamics in South Asia have been deeply influenced by concerns of nuclear conflicts in the region. In the aftermath of the Shakti test series of May 1998, much of these concerns were further heightened in the absence of any detailed guideposts of India’s nuclear deterrence. The element of ambiguity, which characterized India’s nuclear policy since May 1974, was once again highlighted by the political strategic community in India in recent times. However, much of this ambivalence and uncertainty was eliminated when India decided to craft out a practical doctrine for a system of deterrence that was reasonable, effective, affordable and defensive. The nuclear doctrine drafting group (NDDG), a small, voluntary association of around a dozen people constituted out of the National Security Advisory Board (NSAB) debated and discussed starting in December 1998 – a little over seven months after India’s nuclear tests – various aspects of a doctrine that was to be operational in letter and spirit (Karnad 2004: 66).

By May the following year (1999) the draft doctrine was submitted to the government as per the latter’s deadline (Karnad 2004: 66). Subsequently, India announced its nuclear doctrine on 17 August 1999, but preferred to call it a “draft” (Malviya 2004: 39). The doctrine was prepared by the 27-member NSAB and released by the then India’s National Security Advisor, Mr. Brajesh Mishra in New Delhi to encourage public debate over the draft that would be taken into consideration by the government in due course for a final decision. The cardinal elements of the draft nuclear doctrine are:

- Credible minimum deterrent
- No first use
- Effective Command and Control
- Survivability
- Unilateral moratorium on testing
- Global, verifiable and non-discriminatory nuclear disarmament

On the face of it, the draft doctrine is a result of the foreign policy speech by former Prime Minister Atal Behari Vajpayee in the Lok Sabha in early August 1998 and his
statement in Parliament on 15 December 1998 (Ministry of External Affairs (1998), where he spelt out the cardinal elements of the India's minimum nuclear deterrence posture (Khanna 2000: 99-100). Any study on India's nuclear doctrine is open to inherent contradictions and tensions. Regardless of its status of being the single most coherent document on India's nuclear doctrine, the NSAB report was highly controversial at the time of its release. Besides stirring the hornet's nest in Pakistan (The Times of India 1999; Asian Age 1999a) and intensifying Chinese suspicion (Yali 1999) it annoyed the Indian politico-strategic community, who severely criticized the doctrine for being inconsistent, unrealistic and lacks ingenuity (Chari; Nayar 1999; Menon 1999; Joshi 1999). Prof. Kanti Bajpai argues that,

"As a doctrine it was supposed to enhance the credibility of India's nuclear posture. Unfortunately, it appears set to achieve the opposite because it ignores the military, technological, economic and diplomatic context of India's strategic situation so much so that if one removed the word India from it, it could have been written anywhere, perhaps in Washington" (Vandana and Shukla 2004: 147).

The principal Opposition party, the Congress was also incensed by its circulation viewing the doctrine as merely an electoral ploy to garner public attention and possibly votes in the upcoming national election (Tellis 2001: 253-254). Former Defence Minister and senior Congress leader, Pranab Mukherjee, expressing resentment against the doctrine remarked:

"the caretaker government (NDA coalition) had no business politically [or] morally, to bring out [a] document of this nature, which will affect the life of the entire continent. The basic question is how can a government which has lost its mandate bring out such a document......They are not running a college union, but a federal government" (Asian Age 1999b).

The nuclear doctrine was further criticized for being ambiguous in terms of its status as a policy document; it did “not constitute a settled policy”. In the face of such intense indignation from both domestic and international quarters, the government redefined the doctrine as merely as a “draft” (Tellis 2001: 254). Prime Minister Vajpayee further trivialized the report of the NSAB by stating that “there is nothing new in the policy announced by us ....We have talked about command and control in the new policy, but it is a draft policy which can be changed” (The Pioneer 1999). The draft report was regarded as a document that was open for “public discussion” (The Hindu 1999). At this point, it is imperative to define what is a doctrine? Doctrine
comprises the set of principles that define the conditions under which a certain type and quantum of force would be used (Sahni 2004: 141). To the degree that a state is implicitly threatening to use nuclear weapons in the future, even nuclear weapons that have not been built or are in a military inventory, this intent must be communicated in some way to a potential adversary (Sidhu 1994). Brigadier Vijay K. Nair argues that a nuclear doctrine is an explicit body of publicized principles concerning the physical and psychological employment of nuclear weapons to fulfill the imperatives of national security interests (Nair 1999: 14-15).

A nuclear doctrine is thus identified as a State doctrine based on the general “political guidelines” and “economic and moral resources” existing in the State. It cannot be the product of political ideology of a single political party (Lin 1984: 3). The Western connotation of the concept of doctrine would refer to certain “fundamental principles by which military forces or elements thereof guide their actions in support of national objectives” (Department of Defence 1984: 113). This definition implies that a doctrine seeks to regulate the military forces in a battlefield and acts as a centralized command structure for securing specific operational objectives in a combat situation. However, the doctrine is just not limited to operational achievements. It lays down broad guidelines fundamentally anchored in the form of a grand strategy and a policy that determines a nation’s military posture and its material capabilities. Thus the authoritative Dictionary of Military Terms defined doctrine as

“a nation’s officially accepted......views on the nature of modern wars and the use of armed forces in them, and also on the requirements arising from these views regarding the country and its armed forces being made ready for war....Military doctrine has two aspects, political and military-technical. The basic tenets of a military doctrine are determined by a nation’s political and military leadership according to the socio-political order, the country’s level of economic, scientific and technological development and the armed forces’ combat material, with due regard to the conclusions of military science and the views of the probable enemy” (Soviet Faculty of the General Staff Academy 1984: 37).

It thus becomes apparent that a nuclear doctrine comprises of the elements of a grand strategy and strategy. A doctrine defines the national objectives and their rationales and the means to achieve them. Strategy involves the art of controlling and utilizing the resources of a nation – or a coalition of nations – including its armed forces, to the
end that its vital interests shall be effectively promoted and secured against enemies, actual, potential or merely presumed (Earle 1943: viii). Paul Kennedy defines grand strategy as integration in a “coherent fashion [of] over-all political, economic and military aims...to preserve long term interests” (Kennedy 1991: ix-x).

India’s nuclear doctrine is a declaration of the supreme national views of its nuclear capabilities. It is deeply rooted in its understanding of the nature and limits of nuclear war as an instrument of policy, the role of its own military forces in the political life of the state, the country’s future levels of economic and technological modernization, and the demands imposed both by military science insofar as it pertains to nuclear weapons and by the attitudes and capabilities of its principal adversaries, China and Pakistan (Tellis 2001: 253-254). Two crucial aspects need attention here. Firstly, this is not the doctrine accepted or endorsed by the Government of India.... [till then] (Singh 1999). Secondly, as enunciated in the Preamble of the paper, it “outlines broad principles for the development, deployment and employment of India’s nuclear forces” (Draft Report of National Security Advisory Board 1999: Para 1.6). It defines the cardinal features of the draft document from which the “details of policy and strategy concerning force structures, deployment and employment of nuclear forces will flow” (Draft Report of National Security Advisory Board 1999: Para 1.6). It is not to be confused with policy, strategy or even posture which no doubt may be expected to flow from it (Singh 1999).

On 4 January 2003, the Cabinet Committee on Security approved the draft nuclear doctrine and adopted it as the official nuclear doctrine of India (Ministry Cabinet Committee on Security (2003). This document is the official declaration on India’s nuclear policy. India can now boast of an official document underlining its nuclear posture in the international community.

Declared vs. Implied
After the May 1998 tests, India confirmed its overt nuclear weapon status. In the statements made by the political authority following the tests, India declared the rationale and intention of its nuclear weapons policy. At the declaratory level, the most distinguishing feature of India’s nuclear doctrine is its claim that nuclear
weapons are primary meant to act as political leverages rather than to serve any military purpose. During the era of Cold War politics, nuclear strategy not only prescribed a military role for nuclear weapons but also projected a doctrine of nuclear war-fighting. After four decades of nuclear weapon deployment, United States and United Soviet Socialist Republics (USSR) realized that "nuclear war cannot be won, and, therefore must never be fought" (Singh 1998a:11). The end of Cold War militarized confrontation made clear that nuclear weapons are proper political instruments more than any military tool of war-fighting. This conception is derived from the universal understanding that nuclear weapons are "emphatically not usable weapons in any military sense". This understanding was evident in the former Prime Minister's statement in Lok Sabha when he stated: "nuclear weapons are weapons of mass destruction" (Tellis 2001: 261). It implied that these weapons cannot be used, must not be used and will never be used as any instrument of war-fighting by India.

Similar views were echoed by the former President K.R Narayanan on the occasion of the fiftieth year of India's Independence, when he solemnly stated that, "nuclear weapons are useful only when they are not used. They can only be a deterrent in the hands of a nation" (India News 1998: 3). Carrying this argument forward, defence specialist, K. Subrahmanyam asserted that "India does not subscribe to the outmoded war-fighting doctrine [followed by the US and USSR], and [compared to the nuclear doctrines adhered to by these states], the Indian nuclear weapons are meant solely for deterrence" (Subrahmanyam 1998d).

Nuclear weapons in the Indian politico-strategic community are thus considered to have functional relevance in the form of "pure deterrents than as implements of war". These weapons possess enormous destructive capability and can unleash catastrophic devastation. The functional capability of nuclear weapons is in negation of any rational political purpose and their utility is significantly reduced in an adversarial situation where all the antagonists possess similar military potential. In such a combat situation, any threatened or attempted use of nuclear weapons by one nation would be responded by a symmetrical or threatened nuclear riposte from others. This implies that nuclear weapons have low utility when all adversaries have similar capabilities. Under situations of asymmetry nuclear weapons can play a more dominant role as instruments of coercion. This fact has been well illustrated by the
former IDSA Director, Jasjit Singh, In his book *Nuclear India*, Singh after surveying 47 incidents involving the threat of nuclear weapons starting from 1946, concluded that “nuclear weapons played an important political role rather than a military one” (Singh 1998a:13). The threatened party could ignore the threat only at its peril (Singh 1998a:13). India has been deeply influenced by such contingencies. As asserted by K. Subrahmanyam, “the main purpose of a third world arsenal is deterrence against blackmail” (Subrahmanyam 1993: 7). The Prime Minister speaking in the Parliament reiterated that India needed nuclear weapons to immunize itself from potential nuclear blackmail in a world in which nuclear threats are growing (Jones 2002: 21). This aspect has been elaborately discussed by the then Foreign Minister, Jaswant Singh in his article “Against Nuclear Apartheid” in the US Council of Foreign Relations Journal (Singh 1998: 41-52).

India supports a system of global disarmament; but in the absence of a nuclear weapons free environment and to neutralize any nuclear threats, blackmail and compellence tactics and discriminatory policies from the existing nuclear weapon states or rogue elements, India decided to acquire nuclear weaponry. Thus the dominant rationale behind’s India’s development and deployment of nuclear weapons is that they are primarily useful as deterrents and are an effective safeguard against adversarial nuclear weapon states. It is important to take note of the fact that the political and the military roles of nuclear weapons are inextricably linked with each other. The political (non-usable) role of nuclear weapons is the direct consequence of the military (operational) role. This inherent contradiction between the political and operational components of nuclear weapons can never be satisfactorily resolved. However, since politics takes precedence and that by and large, even those who contemplate nuclear weapons in usable terms would refer that they not be actually used (Basrur 2003: 41-52).

**Credible Minimum Deterrence**

On 15 December 1998, India publicly committed itself to a “credible minimum deterrent” policy. Speaking before the Parliament, Prime Minister Atal Behari Vajpayee stated:

“Just as our conventional defence capability has been employed in order to safeguard the territorial integrity and sovereignty of India
against any use or threat of force, the adoption of our nuclear deterrent posture has also followed the same logic. We have announced our intention to maintain a minimum nuclear deterrent, but one that is credible" Vajpayee (1998b).

We have formally announced a policy of No first use and non-use against non-nuclear weapon states. As Hon’ble Members are aware, a policy of No first use with minimum nuclear deterrent, implies deployment of assets in a manner that ensures survivability and capacity of an adequate response. We are also not going to enter into any arms race with any country. Ours will be a minimum credible deterrent, which will safeguard India’s security, the security of one-sixth of humanity, now and into the future Vajpayee (1998b).

A day later on 16 December 1998, Foreign Minister Jaswant Singh defined the concept of 'minimum deterrent' in Rajya Sabha.

“What is the minimum credible deterrent? The minimum is not fixed physical quantification. It is a policy approach dictated by and determined in the context of our security environment. There is fixity. Therefore, as our security environment changes and alters and as new demands begin to be placed upon it, our requirements too are bound to be re-valuated. Both in the determination and re-valuation, India shall not accept any other criteria but national interests and it shall not (accept) any intrusive or sovereignty violative suggestions” (Rajya Sabha 1998).

Elaborating the concept further, Prof. Kanti Bajpai has stated that minimum deterrence can be understood as the fewest number of deliverable weapons that will dissuade an adversary from carrying out a nuclear strike against India (Bajpai 2000: 269). India's nuclear doctrine does not quantify minimum in terms of numbers or types of nuclear weapons. Thus, immediately after the tests, the National Security Advisor, Brajesh Mishra in an authoritative statement made clear, “We do not seek parity with China; we don’t have the resources, and we don’t have the will. What we are seeking is a minimum deterrent” (Burns 1998b: A7). This official statement unambiguously suggests that India is neither interested in any nuclear arms race nor has it embarked upon any open-ended nuclear weapons programme. This perspective projects a minimalist strategy. India’s nuclear minimalism can be understood in terms of its strategic philosophy that power is a prerequisite for security in a realist society. At the same time, it acknowledges that nuclear weapons are instruments that can cause destruction of diabolical nature; hence they are morally unacceptable. Thus ‘minimum deterrence is a way of looking at nuclear issues and not a set of fixed
numbers'. The simplest way of defining the concept of minimum deterrence is that it is a "nuclear strategy in which a nation (or nations) maintains the minimum number of nuclear weapons necessary to inflict unacceptable damage on its adversary even after it has suffered a nuclear attack" (Hollins et al. 1989: 54-55). Speaking in the same vein, Barry Buzan defines minimum deterrence as a secure second-strike force of sufficient size to make threats of assured destruction credible (Buzan 1987: 193). Highlighting the same aspect, K. Subrahmanyam wrote:

"Those against India being a nuclear weapon state and those conditioned by the US nuclear strategic theology both raise the question of what is minimum nuclear deterrent, the Indian Government has adopted as its declaratory policy. It is an arcane question and cannot be answered in precise terms like 30,300, 3,000 or 30,000. The very idea that there must be a precise numerical value to the deterrent arsenal is part of the sedulously fostered nuclear theology of former US Defence Secretary, Robert McNamara....Minimum deterrence is not a numerical definition but a strategic approach. If a country is in a position to have a survival arsenal, which is seen as capable of exacting an unacceptable penalty in retaliation, it has a minimum deterrence [as] opposed to an open-ended one aimed at matching the adversary's arsenal in numerical terms" (Subrahmanyam 1998e).

Notwithstanding, the official reticence about India's 'minimum' force structure, the Draft Report of the NSAB speaks of a "credible minimum nuclear deterrence" (Para 2.3) against any state or entity. It advocates a comprehensive strategic force consisting of a triad of air, naval and land-based nuclear force structure (Para 3). India's nuclear forces and their command and control shall be organized for very high survivability against surprise attacks and for rapid punitive response (Para 4.1). Thus the principle of minimum deterrence is based on the credibility of India's nuclear weapons, their effectiveness and survivability. The object of deterrence is to convince the adversary that the costs of seeking a military solution to his political problems will outweigh the benefits. Deterrence is the power to frighten nations with an adversarial bent of mind so that they do not threaten our national interests, territorial integrity and sovereignty. Therefore, it acts as a restraint or check on antagonistic nations. In a political environment flanked by nuclear-armed neighbours, on either side of our borders, it was necessary for India to acquire a credible deterrence. Besides, in recent years, when both Russia and the United States have agreed to reduce their stockpile substantially, China has been engaged in modernizing its nuclear arsenal and developing other state-of-art weapons. This northern neighbour
of India has always been regarded with extreme caution within our strategic circles. Nuclear weapons are thus a measure of ensuring sufficiently stable security against potential threats.

As argued by Maj. Gen. Dipankar Banerjee (Retd.), "deterrence has been a fundamental part of military doctrine through the ages. It has relied essentially on two basic principles: one is through the threat of punishment.... The other is through dissuasion or denial" (Banerjee 1998: 278-279). The first rests on the belief that any adversarial action by a hostile nation would be reciprocated with an equally devastating response. Offensive forces held in reserve are meant to enforce this threat (Banerjee 1998: 278-279). The other implies any intention of a hostile nation to attack would be so difficult and certain to be defeated that it would not be worth the effort. In either case, deterrence ensures sufficiently stable security and protects the sovereignty and territorial integrity of India. Thus minimum deterrence is the capability that India should strive for within a projected time-frame. However, the interim period would also require a credible strategy. This interim period could vary over a long period of time. Such interim period requires a doctrine and strategy of "recessed deterrence". Recessed deterrence may be defined as a credible nuclear weapons capability which the country is able to draw upon for political and diplomatic purposes, and is able to deploy a nuclear arsenal within a defined time-frame and effectively use it physically for military purposes (Singh 1998b: 318).

The strategy of recessed deterrence would need a non-weaponized state but one in which all the necessary steps for nuclear weaponization and its usability has been undertaken. Recessed deterrence would thus require ballistic missiles of ranges up to 5000 km along with capable delivery systems. Effective recessed deterrence expands the options for minimum deterrence posture for the future. Recessed deterrence requires the development of crucial, albeit hidden and oft-forgotten command and control structures as well as the operational and ideational elements relating to sufficiency requirements use doctrines, targeting options and conflict terminations (Tellis 2001: 213-216). Effective deterrence is derived not only from the possession of nuclear weapons and delivery systems but also from an integrated capability of command, control, communication, computer, intelligence and information (C^4i^2) structures. Hence, recessed deterrence prescribes that India develop
the above mechanisms while refraining from producing any new nuclear weapons and deployment of dedicated delivery systems. The variable of recessed deterrence cannot be detected from external entities and do not manifest any challenge to the international proliferation regime. Under the strategy of recessed deterrence, India will be able to maintain its existing stockpile of nuclear weapons and yet refrain from further developing new weapons and the explosive testing of both current and improved nuclear weapons design.

The concept of minimum nuclear deterrence has been vehemently criticized by both Western and Indian analysts. The United States have never been satisfied with the Indian conception of minimum nuclear deterrence. They have repeatedly pressed India for a more specific and precise definition of the concept of ‘minimum’ in numerical terms. While negotiating the specificities of the recently concluded Indo-US nuclear energy agreement, Washington insisted India to qualify the meaning of the term ‘minimum’. Within the Indian strategic circles, minimum nuclear deterrence has been criticized for lack of clarity. The draft paper proposes that India’s nuclear deterrent capability should comprise of sufficient, survivable and operationally ready nuclear forces based on the principle of no first use. It emphasizes that the level of India’s nuclear capability should be consistent with maximum credibility, survivability, effectiveness, safety and security (Kanwal 2001: 60). It provides for the establishment of an effective and instantaneous intelligence and early warning system coupled with an instantaneous communication system linking the key institutions. It also recommends that the force structure shall comprise of a triad of strategic bombers, land-based ballistic missiles and a sea-based deterrent consisting of submarine launched ballistic missiles (SLBMs) configured to inflict punitive retaliation, the consequences of which will be unacceptable to a potential adversary.

The proposed doctrine also rejects the concept of nuclear war-fighting and does not consider it necessary for India to match its nuclear warheads and delivery systems with those of its nuclear adversaries. The logical question that arises here is how India can aspire to achieve ‘maximum deterrence’ out of such an expansive ‘minimum’ nuclear deterrent policy. Highlighting the inherent contradiction within the draft doctrine, Brigadier V.P. Naib asserted that: “Security depends upon assuming the worst possible case and developing the capability to cope up with it. We
must be able to absorb the total weight of a nuclear attack on our nuclear stockpiles and installations, on our air ground and naval capacity to make war, our vital industrial complexes, oil installations, on our cities and on our people. We can only do this by having in readiness a reliable ability to inflict unacceptable damage at any time during the strategic exchange, or as Robert McNamara termed it, “an assured destruction capability”. This is the true meaning of deterrence, and it cannot be achieved by the so-called minimum deterrence or by the government’s bland assurances that “it will be able to retaliate at short notice when the need arises” (Naib 1993: 61-62).

The BJP Government was chastised by prominent maximalist, Bharat Karnad for pursuing minimum deterrence posture when “other, more effective, solutions lie shimmering in the broad ‘daylight’ of deterrence theory” (Karnad 1998: 108). The minimalist view advocates for a limited and restrained posture comprising of nuclear forces in a de-alerted, de-mated form, which abrogates a “more effective” “maximally strategic” (Karnad 1998: 135) deterrence posture built around ‘multiple’ kinds of megatonnage weapons and a myriad of delivery systems that would ensure a “full and robust deterrent” (Karnad 1998: 135) deemed essential for India’s security interests.

Another criticism leveled against the draft doctrine is the lack of clarity on the concept of ‘credible’ as enshrined in the concept of credible minimum nuclear deterrence. The classical meaning of ‘credible’ can be understood in terms of the following:

- capability of a triad for launching a decapitating second strike;
- communicating the will to the adversary that India can and will retaliate and;
- resolve that is determination to use the nuclear option in case of any attrition attempts

Nuclear weapons by virtue of its great magnitude of destructive capability are qualitatively different from conventional weapons. Hence, their political role of deterring a war by the threat of a decapitating retaliation is primarily against their operational characteristics, which is secondary. The draft paper fails to incorporate this prioritization. As a result, the notion of what is ‘credible’, which has never been adequately defined, leans toward a technologically sophisticated, large and expensive
arsenal. This is implicit in the draft doctrine that calls for an "adequate retaliatory capability" based on a triad of weapons whose survivability depends upon "multiple redundant systems". All this reflects an expansive operational capability that contradicts the minimalist logic of the political role of nuclear weapons. At the same time, the draft doctrine for credible deterrence, leans heavily on the operational component of deterrence for facilitating deterrence stability, arms control and confidence-building, it shifts to the political component in the form of declaratory positions on no first use and on non-use against non-nuclear states (Basrur 2000: 612).

This logic obscures the distinction between conventional and nuclear weapons. Numbers, reliability, accuracy, etc become features determining the credibility (Basrur 2000: 612). Thus the draft paper seeks to breed a 'self-regarding' logic that analyses strategic imperatives in terms of concrete characteristics of nuclear weapons. This kind of thinking pertains to conventional weapons logic. However, conventional weapons are different from nuclear weapons and cannot be viewed as 'Clausewitzian' instruments of politics. As Kenneth Waltz states that "contemplating war when the use of nuclear weapons is possible focuses one's attention not on the probability of victory, but on the possibility of annihilation [and so] "the problem of the credibility of deterrence, a big worry in a conventional world, disappears in a nuclear one" (Waltz 1990: 734). Thus, Indian strategic thinking contradicts the rules of minimum deterrence.

An interesting feature that deserves attention is that the Annual Report of the Ministry of External Affairs, 2002-2003 dropped the word 'minimum'. (IPCS Special Report 13 2006) In a similar vein, the Defence Minister, Pranab Mukherjee in an interview to the Press Trust of India asserted that India's 'credible nuclear deterrence' is in place thus consciously dropping the word 'minimum' (The Hindu 2004). Is it because of the inherent tension between minimum deterrent and maximum credibility? Is India considering shedding a minimalist posture and adopting a more hawkish nuclear policy in its security interests? In a seminar held in New Delhi, it was stated that the deletion of the word "minimum" is intentional in light of the ambiguity over the definition of "unacceptable damage" (IPCS Special Report 13 2006). Another reason cited for the deletion is the 'greater weightage...being attached to "credibility" (IPCS Special Report 13 2006). Despite such controversies, the concept of minimum deterrence has been strongly upheld by the strategic community. Major
General (retired), Ashok Mehta, noted that “minimum deterrence and a no first use policy allow for the maintenance of a limited nuclear arsenal – warheads and delivery systems – and a small not too elaborate command and control structure. This makes the strategic deterrent affordable and prevents a nuclear arms race” (Mehta 1998). Reiterating the same view, former Indian Chief of Army Staff, General V.P. Malik suggests that India’s May 1998 nuclear tests themselves functioned as some sort of limited deterrent, since they demonstrated the country’s nuclear weapon capability and in so doing “had fulfilled a long-standing demand of the armed forces” (Tellis 2001: 253-254). Minimum deterrent is a relative term and every country has to develop this capability subject to an empirical analysis of its threat perspectives and adversaries’ potential. Minimum deterrence is not dependent on matching warhead to warhead but hinges on the capacity to survive a first attack and then retaliate with a punitive second attack. Thus when faced with insistent demands from the US to quantify the concept of minimum deterrent, Prime Minister Vajpayee stated in Parliament minimum deterrence “is not a question of numbers” (Sibal 1999). It “implies [the] deployment of [nuclear] assets in a manner that ensures survivability and [the] capacity [for] an adequate response” (Economic Times 1998).

Deterrence is not a static concept; it is dynamic. A nation has to plan for deterrence on the basis of anticipated changes in the security community. Thus a country’s credible minimum deterrent posture entails a limited force structure comprising of adequate numbers of warheads, missiles and delivery systems credible enough to launch a second-strike. In considering India’s military strategy, China and Pakistan are perceived as principal nuclear threats of which Beijing being a superior nuclear power is more threatening. As regards, Pakistan, a nominally weaker nuclear adversary, India should acquire the capability to target:

Six metropolitan centres including port facilities; one corps-sized offensive formation in its concentration area; three sets bottlenecks in the strategic communication network; five nuclear capable military airfields; two hydroelectric water storage dams. A total of 17 nuclear engagements (Nair 1992: 170)

As regards China, Nair advocates large punishment strikes, which implies,

Initially, India needs to create a weapons capability to pull out five to six major industrial centres plus two ports to service China’s SSBN fleet. This makes a total of eight nuclear strikes (Nair 1992: 170).
Nair suggests that against such a target range India would require,

Two strikes of one megaton each for metropolitan centres and port facilities; two strikes of 15 kt each for battlefield targets; one strike with a yield of between 200 and 500 kt each for dams; one strike of 20 to 50 kt each for military airfields; and one strike each of 15 kt for strategic communication centres (Nair 1992: 170-171).

After reliability parameters are factored in at rate of two weapons for each autonomous strike, with 20 percent of the entire force structure maintained as a postwar reserve, the 25 designated targets in China and Pakistan are calculated as requiring an overall Indian arsenal of 132 weapons of varying size and yield (Nair 1992: 181). Other commentators like General K. Sundarji, estimated that against Pakistan “upto 1 MTE (megaton equivalent) (say 50 × 20 kt weapons) might do. Even for deterring a large country, one is most unlikely to require more than 4 MTE” (Sundarji 1992: 48). According to Sunderji, targeting five value targets in Pakistan and ten in China would be sufficient for purposes of credible minimum deterrence. Each of these targets could be attacked with “three fission warheads with 20 kt each, detonated as low outbursts” (Sundarji 1996). India will thus require 45 warheads (and their delivery means) to survive an adversary first strike (Sundarji 1996: 18).

After factoring in the reliability parameters and the calculated losses following a first strike, Sundarji concluded that “a low estimate of 90 weapons and an upper estimate of 135 weapons would be reasonable” to inflict a punitive retaliation against China or Pakistan. Arguing in 1994, K. Subrahmaniam asserted that India needed “sixty deliverable warheads” (Subrahmaniam 1994: 189) carried on 20 Prithvi SRBMs and 20 Agni IRBMs and the rest on strike aircraft (Subrahmaniam 1994: 193). Bharat Karnad argues that India’s strategic sufficiency cannot consist of anything less than the ability to interdict some 60 primary and secondary targets in China and Pakistan, thereby necessitating a nuclear force of well over 300 weapons by the year 2030 – most of which must be high yield thermonuclear devices (Karnad 1998: 143). Jaswant Singh believes that two or three dozen weapons are sufficient to deter China.

Thus in quantitative terms, the notion of minimum deterrence is a purely academic one. The concept is dynamic and cannot be defined in fixed numerical terms. It also depends on the kind of nuclear adversary that we are facing – China or
Pakistan. Besides, with the passing of time, India might require less nuclear weapon. So the number is not static; it goes up and down. What is more relevant while discussing the concept of minimum deterrence is to quantify it in terms of its "credible" posture which implies the adequate force structure and the survivability factor of the nuclear arsenal to impose a decapitating second-strike on our adversaries. This is what is advocated in the draft paper proposed by the NSAB.

No First Use

India has been an ardent advocate of the global elimination of nuclear weapons since the 1950s and has vehemently supported the idea of no first use (NFU) and non-use-of nuclear weapons as significant factors in the way towards achievement of total nuclear disarmament. For India, global nuclear disarmament is a remarkable aspect of its national faith and India's strong insistence upon the NFU policy logically flows out of its strong conviction in the complete abolition of nuclear weapons. It was formally proposed to Pakistan first in 1994 as a formal arms control measure and has been affirmed on several occasions since that time by leading Indian political leaders in Parliament (Tellis 2001: 302). Immediately after the testing of its nuclear weapons in May 1998, India made a categorical and unambiguous commitment that NFU of nuclear weapons against nuclear armed powers and the non-use of nuclear weapons against non-nuclear states would constitute integral components of its nuclear doctrine. Prime Minister Vajpayee in the official paper, Evolution of India's Nuclear Policy reiterated New Delhi's "readiness to discuss an NFU agreement [with Pakistan] as also with other countries, bilaterally, or in a collective forum" (Government of India 1998: 4-5). This commitment was further discussed in Parliament on 4 August 1998 by Prime Minister Vajpayee who declared that India "will not be the first to use nuclear weapons. Having stated that, there remains no basis for their use against countries which do not have nuclear weapons" (The Times of India 1998a).

Para 2.1 of the draft doctrine makes it clear that the sole purpose of nuclear weapons is to deter the threat or threat of use of nuclear weapons. The draft doctrine states that India will not be the first to initiate a nuclear strike, but will respond with punitive retaliation should deterrence fail. (This is in total conformity with Article 51
of the UN Charter under Chapter VII that clearly endorses "the inherent right of individual or collective self-defence if an armed attack occurs against a Member of the United Nations"). The prospect of inflicting unacceptable damage upon the aggressor would increase the efficacy of nuclear deterrence. Thus the NFU policy strengthens the concept of deterrence. The underlying objective of the NFU strategy is to promote crisis stability and propagate strategic restraint (Kazi 2004: 28).

The NFU doctrine is a sound pillar of India's nuclear doctrine. India strongly supports, both politically and morally, a collective agreement among all nuclear powers on NFU. Such a stand would eventually pave the way towards global disarmament. Unfortunately, this has not been the case so far. Except for China, the other four nuclear weapons states retain first-use strategy for the indefinite future. In the case of China, its stand is diluted as it has qualified that NFU is not applicable on its own territory. This implies that China can resort to the use of nuclear weapons over the disputed territories like Arunachal Pradesh which it claims as its own territory. That leaves India as the only country resolutely adhering to an unambiguous NFU doctrine, which clearly indicates India's perseverance towards total disannament.

Despite global non-cooperation, India has committed itself to the NFU policy primarily because of five considerations. First, the NFU strategy projects India as a restrained power in nuclear matters. Following the May 1998 tests, India's declaration of NFU helped propagate an image of strategic restraint. Obviously, this entails enormous diplomatic advantage. New Delhi's NFU policy offer to Islamabad in 1999 and other nuclear powers is an attempt at displaying moderation and responsibility in nuclear and international matters. India's commitment to the NFU doctrine is not merely a verbal assurance. It has unambiguously expressed its commitment to a minimum deterrent-retaliatory capability that has to be credible in terms of force structure, deployment and survivability and operational preparedness of nuclear forces. The emphasis is clearly upon minimum. This will certainly depict India as a conservative and incrementalist power instead of a revolutionary one and enhance peace prospects within the subcontinent (Kazi 2004: 29).

Second, a restrained nuclear weapons programme without tactical nuclear weapons and a complicated command and control system is economically a viable
choice that provides an affordable deterrent. India is determined not to commit the follies of other nuclear powers in building a large nuclear arsenal. During the Cold War, both the United States and Soviet Union invested billions in building an elaborate arsenal consisting of 67,000 nuclear warheads which posed the gravest threat to humanity and to peace and stability in the international system. The deployment pattern of their nuclear forces clearly indicated that they were ready to fight a nuclear war. India’s NFU policy strongly rejects the concept of nuclear warfighting and, to this extent, does not consider it necessary that its nuclear warheads and missiles should be equivalent with that of its potential adversaries. A modest sufficiency in terms of survivable nuclear warheads and delivery systems that can inflict unacceptable damage upon the adversary is considered adequate for the purposes of deterrence. A minimum deterrent will certainly bolster India’s image as a restrained power and signal other countries to desist from indulging in irrational military expenditure detrimental to their respective socio-economic needs.

Corollary to this, a modest nuclear force as proposed by the NFU policy will provide a decisive setback to any vicious arms race and give peace a chance in South Asia. When a country renounces a first-use option and tailors its policy in terms of NFU, the prospects of any arms race is inherently curbed. Moreover, if other countries exemplify India’s NFU policy, it would gradually result in a global arms reduction and consequently check arms race. Thus the charge that India’s nuclear doctrine would initiate an arms race in the Southern Asian region is specious and unjustified (Kanwal 2001: 63). New Delhi has lived with a nuclear Beijing since 1964 and even after a period of three-and-a-half decades, India does not feel it necessary to match China’s 400-plus nuclear warheads. India’s nuclear doctrine pillared upon the NFU policy is exemplary and certainly the enhances the prospects for peace, stability and security in the subcontinent.

Third, the NFU policy offers military-strategic advantages. If Pakistan commits to NFU, India’s conventional superiority can be directed against Pakistan, especially in a situation of unjust warfare such as in Jammu and Kashmir. By means of its conventional superiority, India can embark upon an operation of exterminating the terrorists and restore peace and order within the State. Such a development would contribute to the efficiency of the Indian Government and repose civilian faith in it.
Needless to say, resolution of the Kashmir issue would defuse a highly potential nuclear flashpoint zone in the world and establish peace and normalcy in the region.

Simultaneously, India’s commitment to NFU will reassure Pakistan that it does not wish to threaten the existence of its neighbour. This is in sharp contrast to the Pakistani policy which has often emphasized the rationale for its nuclear capability is not only to deter the threat of India’s nuclear weapons but also to counter New Delhi’s conventional military superiority. Interestingly enough, India is against any form of nuclear warfighting as it is well aware of the futility of a nuclear war—a nuclear war would not be a war of conquest. By extending an NFU offer to Islamabad, New Delhi seeks to implement a vital confidence-building measure between them. This would also facilitate a nuclear risk reduction measure and increase peace prospects within the subcontinent. Strongly advocating the NFU policy, India is in favour of a totally uncaveated policy, with no reservation whatsoever on NFU (Subrahmanyam 1998: 57). The nuclear weapons of India are meant for a punishing retaliation, only if New Delhi is attacked (Subrahmanyam 1998).

Fourth, India’s NFU strategy avoids requirement of nuclear arsenal at launch-ready deployment and thus forswears brinkmanship in the early stages of conflict. Consequently, NFU terminates the possibility of nuclear blackmail. India’s NFU strategy negates any possibility of deploying nuclear weapons in a ready-to-fire mode. It provides sufficient time to confirm that a nuclear attack has taken place so as to retaliate in an assumed manner, thereby avoiding any danger arising from hair-trigger deployment of nuclear weapons. The NFU policy is significant, precisely because it affords a more relaxed, safe and a less stressed command and control system. The contrast between the superpowers nuclear command and control system and the one commanded by the Indian NFU policy is obvious. During the Cold War, the command and control system was designed to detect and identify a nuclear attack and launch a response—all within thirty minutes (Rajagopalan 2000: 16). This created ‘severe stress on the system and several breakdowns’. Though none of these breakdowns led to any major disaster, there were close calls such as in 1998 when the Russian early warning radar mistook a Norwegian sounding rocket for an American ballistic missile (Rajagopalan 2000: 16). Such mistakes are unlikely with an NFU
policy. A deterrent-force based on the NFU strategy considerably reduces the possibility of retaliation against a presumed adversary within minutes of a suspected nuclear attack at the national command authority.

The NFU strategy facilitates greater political control over nuclear forces. Rapid response of nuclear forces requires greater delegation of authority to lower levels of command. This leads to inflexibility, particularly in war plans. During the Cold War, the US nuclear war plans—the Single Integrated Operation Plan (SIOP)—allowed the US President little choice of alternate sets of attack, all of which included grave nuclear offences. The US President could either ignore the war plans or risk a total nuclear war. Greater flexibility in war plans allows the political leadership alternatives such as attacks on individual targets as a response to a limited attack. ‘Thus the NFU policy based on avoidance of deploying nuclear weapons at launch-on-warning posture and facilitating greater political control provides substantial benefits in terms of stability and safety, without diluting the capability of the deterrent’.

Finally, the NFU doctrine ensures the survival of its forces from a pre-emptive strike by maintaining its nuclear warheads and delivery systems in a de-mated posture. This defuses the chances of accidental or inadvertent use of nuclear weapons. It also reduces the danger of rapid escalation in a crisis with the consequent risk of unintentional nuclear war. New Delhi’s initiative on de-alerting its nuclear forces further reinforces its national commitment to a minimum nuclear strategy. It also serves as a confidence building measure towards Pakistan as part of an effort to promote nuclear restraint in South Asia.

However, Pakistan’s refusal to accept India’s NFU offer would imply that it intends to use nuclear blackmail to have its way on the Kashmir issue. It would also explain Pakistan’s reluctance to hold bilateral dialogue with India on Kashmir, why it is intensifying terrorism and stepping up cross-firing in Jammu and Kashmir. Thus Pakistan’s opposition to NFU will only reinforce Islamabad’s image as a troubling one. On the other hand, India’s adherence to the NFU doctrine and its command and control systems amply demonstrate that nuclear weapons are not meant for warfighting. By deploying its nuclear weapons in a de-mated state, India will avoid
the risk of their accidental or unauthorized use and exhibit nuclear restraint. The Indian diplomacy on de-alerting hopes to bring other nuclear weapons powers to commit themselves to an NFU policy which can eventually culminate in the de-legitimization of nuclear weapons.

The no first use principle has generated a lot of debate in both academic and strategic circles. The principle has been attacked episodically on several grounds. The first criticism leveled against the NFU principle is that it is merely a paper policy that cannot be dependent upon in an situation when the strategic stakes are high. Since the Indian policy is a unilateral declaration, it can if the need arises, be overturned or ignored (Conference on Disarmament 1999). This disparagement is difficult to ignore. As pointed out by the former British Permanent Under Secretary of Defence and member of the NATO Nuclear Planning Group, Sir Michael Quinlan, “There is absolutely no way of making a promise of NFU dependable – no way of making nuclear weapons incapable of first-use.....Recall that a promise differs from an expectation, however confident; it is an undertaking to act, or not act, in a certain way regardless of whether it is found convenient to do so when the situation actually arises” (Quinlan 2000: 10). Speaking in a similar vein, Amitabh Mattoo argues, “We need to look at the question of “no first use”.....It does make strategic sense. Eventually, when you are planning your force structures you will have to factor in whether you want to do a “no first use”. But in any case it is not an irrevocable declaration. You can change it any time you want to” (Mattoo 1999: 127). The criticism against NFU has been further reinforced by the maximalists who have put forth a rather skeptical view of the principle. For example, Vijai Nair challenged the credibility of a NFU posture in an extreme situation.

“May I ask in this, sir, if we are so sure that the world will believe us when we say “no first use”.....Are we then implying that we believe China’s “no first use” policy will stand up under the rigours of war.....We shouldn’t take this “no first use” claim very seriously in terms of what would happen once the ball gets rolling” (Nair 1999: 115).

Maximalist, Bharat Karnad has been more emphatic in his analysis of the NFU posture. He described the no first use policy as a “rhetorical bravado, an overstatement of political intent, a hoax and as something that this country will abide by except in war” (Karnad 2005: 436). Major General Ashok Mehta, though not a
maximalist himself, has also questioned the utility of the NFU posture. According to him the government has displayed undue haste in its offer of the NFU. "Those who are involved in this question of offering 'no first use' need to examine the various conditions that are involved and I would suggest this being done quickly because it impacts on a host of arms structures" (Mehta 1999: 123). Although these criticisms cannot be rejected, the only counter-argument that can be fielded is that the NFU is more than just a paper commitment. Besides, India’s targeting philosophy and its command control structure will significantly diminish the probability of first use. Nevertheless, 'the possibility will remain, however improbable it is in reality, this line of criticism cannot fully be refuted (Rajagopalan 2005: 16).

The second criticism regarding the credibility of NFU pledge in times of crisis have been by leveled by the Indian strategic community. Their basic contention is "would India be able to stick to this pledge if there is credible intelligence information that India is about to be attacked?" (Karnad 1994: 34). In other words, should India wait and suffer a nuclear attack because of its adherence to NFU policy, especially if India possesses the capability to neutralize such attack by pre-emptive measures. Related to this, the NFU policy has a negative impact on our deterrent posture. Any adversary can make sufficient preparations for a first strike, convinced that it will not invite any pre-emptive attack, which will put it at a comparable advantage to India. Such a scenario gives rise to the problem described by Thomas Schelling as ‘the reciprocal fear of surprise attack’ (Schelling 1980: 207-230). According to Schelling, ‘if surprise carries an advantage, it is worthwhile to avert it by striking first’ (Schelling 1980: 207). In other words, if India opts to hold back by virtue of its adherence to NFU pledge in the face of an impending nuclear attack, it would negate any strategic sense and tactical pragmatism. As regards the operational posture, de-alerting and de-mating nuclear warheads, which flows out of the NFU pledge, is inconsistent with a credible nuclear posture. The armed forces cannot adopt a strategic doctrine in which nuclear weapons are not "ready to go". In a crisis situation, where deterrence has failed, India might need to resort to the use or threat of use of nuclear weapons first, especially against a superior adversary.

On 4 January 2003, the Cabinet Committee on Security reviewed the operational aspect of India’s nuclear doctrine and laid down that in the events of any
major attack against India with any chemical or biological weapons, India will retain
the option of retaliating with a nuclear attack (Ministry of External Affairs 2003). This
move was resisted by the committee on several grounds: (a) it is difficult to
conclusively differentiate between a biological attack and the sudden outbreak of an
epidemic due to natural causes, as evident from the onset of plague in Surat in 1994;
(b) it will be very difficult to prove the onus of responsibility on the country
responsible for such attacks and; (c) it might lead to catastrophic disaster to resort to a
nuclear riposte against any state on the basis of such unconvincing pretext. The Indian
government, however, has stated in its wisdom that no difficulty will be encountered
in identifying such enemy and assured that every step will be taken to prevent any
rapid escalation while inflicting condign punishment to such aggressor.

The problems inherent in the NFU policy are not completely baseless. Yet it
provides sufficient benefits in terms of safety, stability and greater flexibility. It
reduces the risk of a pre-emptive attack and the resultant insecurity. Besides, a relaxed
and de-stressed command and control gives adequate time to detect and identify a
possible nuclear attack before launching any reciprocal attack. This diminishes any
inadvertent or accidental use of nuclear weapons. India’s NFU policy forms a critical
component of nuclear deterrence and the way it has evolved from the draft doctrine; it
has developed a unique form of its own. The conventional views on India’s policy
eminently justify it as a national security imperative. It seeks to propagate mutual
confidence among warring factions, and contributes in de-escalating any adversarial
situation. The value of NFU is premised on declarations on the conduct of war having
some relevance which cannot be outrightly dismissed. It prescribes certain limits to
the levels of permissible violence. It establishes useful norms and affords a crucial
step towards the eventual de-legitimization of nuclear weapons. The NFU doctrine is
consistent with its strategic culture and mindful of the devastation that nuclear
weapons can cause. India views nuclear weapons as political weapons and not as
instruments of warfighting. Their sole purpose is to deter the threat or threat of use of
nuclear competition in the subcontinent. At the level of India’s defence policy, the
doctrine of no first use (NFU) constitutes one of the most vital components of India’s
nuclear posture. Demonstrating India’s non-aggressive position, the NFU doctrine
seeks to outline crisis stability and strategic restraint.
Non-use of nuclear weapons against non-nuclear weapon states
As a corollary to the NFU policy, India has clearly stated that the it will not resort to the use or threat of use of nuclear weapons against states which do not possess nuclear weapons, or are not aligned with nuclear weapon powers (Para 2.5). The doctrine further provides that the fundamental purpose of Indian nuclear weapons is to deter the use or threat of use of nuclear weapons by any State or entity against India and its forces (Para 2.4). After the events of 11 September 2001 attack on New York’s World Trade Center in the United States, there has been a growing spate of terrorist attacks all over the world. India has also become the target of several terrorist groups whose sole target is to disrupt the stability and security of the Indian establishment. The subsequent terrorist attack on the Parliament of India on 13 December 2001 is a case in example. In addition, there has been a steady influx of jihadi groups like the Harkat-ul Mujahideen (HuM), the Hizb-ul-Mujahideen (HM), The Jaish-e-Mohammed (JeM), and the Lashkar-e-Toiba (LeT) operating in Kashmir that have close links with the Al-Qaeda. In December 1999, Nazeer Ahmad, military advisor to the Al-Qaeda, in fax message to the Voice of America in Washington, proclaimed that the goal of these groups is to fight against Americans, Russians and Indians (Kazi 2005: 22). Many of these groups also operate from neighbouring territories. There is a growing apprehension about terrorists gaining access to fissile materials. How can these groups be neutralized without threatening or attacking the country where they are based. Bangladesh, for example, is a non-nuclear state which is increasingly becoming the den of dangerous non-state actors. The doctrine remains silent on what should India’s policy be towards Bangladesh in eliminating the terrorist activities operating there. The doctrine also does not prescribe what should be India’s position towards Pakistan which provides safe haven to the ISI, Taliban and Al-Qaeda groups.

Command and Control
The efficacy of a nuclear force depends on the capability of how it is commanded and controlled in times of crisis. The nuclear doctrine provides for an elaborate command and control structure (Para 5). The command and control are the supporting infrastructure that makes a strategy of nuclear deterrence viable. An effective command and control system is indispensable to analyze options, formulate plans and implement them effectively. Several times, when confronted with crisis situation,
India’s military force has been left in a precarious position due to the lack of an efficient support structure. Arbitrary decisions undertaken without analyzing the short or long term alternatives have borne serious ramifications on the security environment. The Kargil War was essentially the result of discontinuity in the understanding of international relations and security related issues by the political leadership; lack of suitable institutions which could render proper advice and formulate appropriate options; and a propensity on the part of the political leadership to operate through informal non-specialized coteries (Nair 1992: 117). There are situations even when policies are implemented, there is no effective mechanism to modify them according to the ephemeral nature of the international and political system. In order to eradicate such ambiguity, a viable command and control structure has been envisaged to deal effectively with any crisis situation. Command and control may be defined as “an arrangement of facilities, personnel, procedures and means of information acquisition, possessing dissemination and decision-making process used by national command authorities and military commanders in planning directing and controlling military operations” (Gregory 1996: 3-4). Command is concerned with the conduct of military operations in order to achieve the goals set by the political leadership. The issue of control is associated with ‘technology and wiring’ and of delegation and devolution of authority in crisis. A viable nuclear command and control organization must consist of: (Nair 1998: 94)

- a National Command Authority (NCA)
- a strategic command
- an integrated intelligence instrument
- national command centres
- weapon research, development and production complex
- a communication infrastructure

**National Command Authority**

The draft report of the NSAB had recommended that the National Command Authority (NCA) would be headed by the Prime Minister and the authority to release nuclear weapons shall be vested in the executive command of the highest political office. Given the nature of our constitutional system, the command and control of the nuclear weapons can hardly lie with anyone else. The Prime Minister will be
politically assisted in the decision making process by the Cabinet Committee on Political Affairs (CCPA), which is the final stage of collective decision making process. The Prime Minister and the CCPA would require 'specialist advice' to carry out threat assessments; development of nuclear policy options; finalization of employment policies and targeting plans; planning developing of weapons capabilities; policy for security of nuclear forces; cost analysis and prioritization of resource allocation (Nair 1992: 119). The NCA shall be assisted by a National Security Council (NSC) to provide specialized staff support. The NCA will be entrusted with the responsibility to monitor and implement the nuclear strategy. The nuclear command structure must cater to the needs of alternative command centres stationed at Delhi and selected Command Headquarters (Nair 1998: 95). They must be capable enough to deal with any but accurate pinpoint nuclear strikes. On 4 January 2003, Cabinet Committee on Security formally laid the foundations of an effective command and control organization. The Government established the two-layered structure Nuclear Command Authority (NCA) that was responsible for the management of its weapons. The NCA comprised a Political Council and an Executive Council. The Political Council was chaired by the Prime Minister and "is the sole body which can authorize the use of nuclear weapons," the CCS said (Mohan 2003). The Executive Council, chaired by the National Security Adviser to the Prime Minister, "provides inputs for decision making by the NCA and executes the directives given to it by the Political Council" (Mohan 2003).

**Strategic Forces Command**

The Strategic Forces Command (SFC) would consist of the Joint Chief of Staff Committee (JCSC) as a member and the Vice Chief of Staff from the NSC for expert strategic advice. The JCSC and the Strategic Nuclear Command Headquarters must have identical communication facilities in order to meet the military requirements of the nuclear strategy. There have been several demands to make the SFC functional so as to upgrade the state of readiness of the strategic forces. The Group of Ministers in their report, *Reforming the National Security System*, suggested in February 2001: "Given India's nuclear status, there is a pressing need to establish a Strategic Forces Command, to manage all strategic forces. While the operational control of the strategic forces should unambiguously vest in the highest political authority, the Chief
of Defence Staff [CDS] should, as stated earlier, exercise administrative control over these forces and also be the channel of communication between the government and the Strategic Forces Commander” (Group of Ministers Report 2001: 13). The report further stated that “the highest importance must be attached to the creation of appropriate structures for the management and control of our nuclear weapons and strategic forces. The CDS should exercise administrative, as distinct from operational military control, over these strategic forces” (Group of Ministers Report 2001: 13). In addition, the Cabinet Committee on Security on 4 January 2003 stated that the SFC will exercise overall operational control over the nuclear forces and for which it approved the selection of senior Air Force officer, Air Marshall T.M. Asthana as the Commander-in-Chief of the SFC who would be responsible for the administration of the nuclear forces (Group of Ministers Report 2001: 13). In this scheme of arrangement, a political decision on nuclear weapons will go through the Executive Council to the Strategic Forces Command. The Commander in Chief will report to the Chairman, Chiefs of Staff Committee. The NCA and SFC constitute the crucial link between the civilian and military leadership on nuclear decisions and their execution.

**Integrated Intelligence Instrument**

The NCA requires comprehensive integrated intelligence inputs to formulate its nuclear strategy and monitor the security position in the country. Credible intelligence about hostile nuclear forces operating within the country is also needed to undertake measures for exterminating such groups. In order to meet the stringent time constraints in a nuclear era, the command structure must harmonize the efforts of the existing disparate intelligence committee; deploy suitable intelligence gathering satellite; achieve qualitative and quantitative increments in electronic intelligence assets to infiltrate inimical communications and enhance the security by providing adequate forces, equipment and well integrated plans (Nair 1992: 123).

**Weapon Research and Development**

The NCA must also ensure that India’s weapons capability is compatible with the existing strategic commitments. It must guarantee weapons capability in keeping with the declaratory and employment policies. In addition, Research and Development
wing must strive towards the modernization of nuclear devices, production of warheads and capable delivery systems to combat future exigencies.

Communication Infrastructure

The NCA must be supported by a secure communication network to develop strategic plans and timely implement them. It is therefore necessary to develop a viable communication system constituting air-borne relay stations to meet range limitations of equipment; alternate ground based radio and radio relay networks and a multiplicity of systems to provide minimal degree of redundancy (Nair 1998: 98). Communication is the crux of the command and control system and they will determine how a system will work in a crisis after absorbing a first strike. India adheres to the strategy of placing its nuclear arsenal in a widely dispersed and mobile situation, to thwart any attempt by an adversary to decapitate the nuclear capabilities in a decapitating strike (Singh 2001: 155-156). Efforts are being initiated to set up a Defence Communication Command under the Chiefs of Staff Committee.

The establishment of an elaborate command and control system is vital to ensure the existence of a functionally effective nuclear force to meet its national security objectives. Some strategists have pointed that with a no first use policy and a doctrine of minimum deterrence that limits the size of arsenal, an elaborate command and control apparatus is unnecessary (Subrahmanyam 1994: 191-192). This approach implies that India’s present military system is capable enough to control any exigency. This criticism can be refuted on the ground that modern day warfare has reached higher levels of technological sophistication that requires a competent and advanced supporting infrastructure to the armed forces for ensuring the safety and security of the national interests. However, there are certain issues that warrant attention.

The Indian government has stated that ‘credible alternative lines of command at the political and the military levels have been fully worked out’ (Mohan 2003). There could be more than one alternative command structure to make certain that an Indian nuclear riposte would inevitably follow a nuclear attack on the nation. The government has also reiterated that the country’s nuclear command chain, including
alternative “nerve centres” was in place, giving India an effective retaliatory capability (The Hindu 2003f). However, the CCS does not specify the composition and the manner in which the alternative chain of command is to function in the event of a nuclear attack decapitating the first line of leadership in the country. The CCS has assigned a pivotal role to the national security advisor who shall head the Executive Council within the NSA and act as a conduit between the political and military components of the NCA. On this issue one cannot but question, the pragmatism to vest such vast authority and responsibility on one individual who also acts the Principal Secretary to the Prime Minister and has to deal with a host of national and international issues. The CCS also remains silent on the issue of who will control the strategic forces in peacetime. The Indian nuclear forces are kept in a de-alerted and de-mated status. While the Atomic Energy Commission has the nuclear cores, the nuclear assemblies are in the custody of the DRDO; the delivery systems are kept with the services. How are these adjuncts going to work together in any crisis situation without communicating the message for a pre-emptive strike, remains vague altogether?

The Government’s response to the above criticism has been forthright. India has credible alternative lines of command at the political and strategic levels. It has also indicated that in the event of a nuclear attack that targets the nation’s leadership, the alternative command authority will be in a position to take charge and ensure massive retaliation against the adversary (Mohan 2003). Regarding more transparency on the command and control organization, government sources said that there must be an “effective balance between considerations of secrecy and transparency”. If the adversary “knows there are alternative arrangements but not where” he would be deterred from launching any offensive attack. The government sources also declared, “As always, there will be a process of evolution. As we gain experience, we could consider a few changes in the nuclear command and control system” (Mohan 2003). India’s fail-safe command and control infrastructure as indicated by the government is competent to inspire international confidence when stakes are high. An effective command and control system provides foolproof arrangements to prevent any accidental and unauthorized use of nuclear weapons. It is the most vital ingredient of India’s nuclear doctrine. As pointed out by Bruce Blair, “if Command and Control fails, nothing else matters” (Blair 1985: 34).
Survivability

The draft nuclear doctrine states that India’s nuclear forces and their command and control shall be organized for very high survivability against surprise attacks and rapid punitive response. They shall be designed and deployed to ensure the survival against a first strike and to endure repetitive attrition attempts with adequate retaliatory capabilities for a punishing strike, which would be unacceptable to the aggressor (Para 4.3). In this ‘retaliation policy’ the survivability of India’s nuclear force is indispensable. The survivability factor as described in the draft doctrine is in conformity with the principles of no first use and credible minimum deterrent. According to this deterrent posture, the country’s nuclear arsenal, C4I2 and support systems must be efficient enough to absorb a first strike and then retaliate with punitive punishment against any adversary that indulges in any foolish nuclear adventure against India. In order to endure “repetitive attrition attempts”, India must possess numerically significant nuclear arsenal that can absorb first strikes and withstand escalatory attrition.

The residue nuclear forces, meant for a punishing retaliation must be qualitatively at least par or superior to that of the potential adversary. The concept of “effectiveness” as enshrined in Para 4.2 of the doctrine further enhances the survivability factor. It states unambiguously that “the efficacy of India’s nuclear deterrent be maximized through synergy among all elements involving reliability, timeliness, accuracy and weight of attack” (Para 4.2). To augment this effectiveness, the NSAB has recommended for a triad of aircraft, land-based missiles and sea-based nuclear delivery systems along with a robust command and control and space assets to ensure the survivability of retaliatory forces and a capability for a nuclear retaliation after any offensive nuclear strike on India. The survivability of the forces will be further enhanced by a combination of multiple redundant systems, mobility, dispersion and deception (Para 3.1). This ensures the peacetime deployment to fully employable forces in the shortest possible time, and the ability to retaliate effectively even in the case of significant degradation by hostile strikes (Para 3.2).

The CCS indicated in January 2003, that India’s credible nuclear deterrence is in place and specialized forces were being raised to tackle the nuclear threat in all its
dimensions. Despite this, in keeping with the future direction of war, a great deal of innovation would need to be thought of for misleading the adversary and giving him a false picture of the damage caused to confuse his post strike damage assessment of our delivery systems (Gautam 2004: 83). The survivability factor has been criticized on the grounds of overlooking the option of tactical nuclear weapons that forms a vital aspect of ‘flexible response’ in nuclear crisis. No mention has been made of this aspect, which leaves it as an ‘open option’.

Unilateral Moratorium on Testing

After the May 1998 tests, the Indian scientific community was satisfied with the results and stated no further testing was required (Hindu 1998; Mukherjee 1998). In a paper titled Evolution of India’s Nuclear Policy, Prime Minister Vajpayee stated: “in terms of technical capability, our scientists and engineers have the requisite resources to ensure a credible deterrent”. Following this, the Prime Minister announced unilateral moratorium on nuclear testing as a measure to reinforce and reiterate its commitment to global nuclear disarmament. The moratorium on nuclear testing is regarded as a self-inflicted blow by the Indian Government. There have been strong appeals from the NSAB to reconsider this pledge by the Indian Government.

Need for Testing

Eight years have passed since India tested its nuclear devices in May 1998. Although the tests results were controversial, the scientific community was fully convinced that India has acquired the relevant nuclear weapons capability. However, it has been argued from several quarters that to self-impose unilateral moratorium on further testing is detrimental to India’s security needs. With the passing of time, technology will scale further heights in all spheres including military. The Gulf War of 1991 is a classic example. Therefore, to say that India has acquired sufficiency in nuclear capability by testing five low yield fission and fusion nuclear devices is tantamount to exhibiting overconfidence and disregarding the future threats. Keeping in tune with future directions of warfighting, India has to undertake adequate measures for the security of its national interests. The need for testing is further intensified by virtue of India’s commitment to no first use and minimum deterrence policies. India’s nuclear doctrine abrogates any warmongering strategy and maintains its nuclear arsenal in a
de-mated and de-alerted posture. But the efficacy of India’s deterrent posture is dependent upon its credibility in communicating its will to a potential enemy that it will be retaliated against with symmetrical attack, in case it has any ambitions of launching a nuclear attack upon India or its armed forces. Such symmetrical attack against any attrition requires the development, production and stockpiling of modern state-of-art weapons that can inflict punitive attack to the degree of unacceptable damage upon the aggressor. For such purpose, the Indian forces would require weapons of high yield that will prove decisive in achieving their combat targets.

The strategic-scientific community has to undertake several trial and error methods to devise weapons of maximum yield and capability. The Indian armed forces will never agree to the proposition of entering combat situations with weapons that have not been prior tested. They have to be convinced about the reliability of India’s nuclear armaments. The Chief Advisor (Technologies), DRDO, K. Santhanam stated that having confidence in a weapon system is no assurance that it will work! “The soldier must have faith in his weapons......Someone, somehow, must make the man at the sharp end believe that the weapons with which he has been provided are, at least as good as those of the potential enemy has at its disposal. This trust is at the root of the discipline found in a military organization” (Zuckerman 1993: 75-76). Besides, to build up a credible and substantive deterrent, India needs to test so that the weapons inventory do not become vintage and weighed down by doubts of faulty designs and non-performance. These arguments are convincing enough for India to resume testing.

In modern day warfare, maximalists like Bharat Karnad argues that against potential nuclear adversaries like China, it would be strategically wise, to develop thermonuclear weapons of megatonnage yield buttressed with ICBM and SLBM capabilities. Apparently, this posture negates the proposed doctrinal principles in our draft document, but the prevailing strategic scenario compels us to adopt a pragmatic approach. India has categorically stated that it will not resort to the use or threat of use of nuclear weapons against non-nuclear states and states that are not aligned with any nuclear powers. This makes it obvious that India’s nuclear weapons are meant to deter any adversarial designs from the United States, Russia, United Kingdom, France and China. The allies of these powers, that did not possess nuclear weapons – for example
the thirteen non-nuclear allies of the United States in NATO, the two non-nuclear allies of the United States in the ANZUS treaty and the three non-nuclear allies of the United States in the Five Power Defence Agreement, the six or more non-nuclear allies and partners of the United States in East Asia and the eleven non-nuclear partners of Russia in the Commonwealth of Independent States (CIS) could now be subjected to Indian nuclear threats in some extreme circumstances (Tellis 2001: 304). This list also includes Pakistan, Israel and North Korea. However, the present day international scenario indicates that Iran is emerging as a strong nuclear power who can challenge the world community on the basis of its nuclear weapons capability and its geographical resources — oil. Pakistan’s A.Q. Khan has done irreparable damage by proliferating nuclear technology, blueprints and other WMD materials to several countries like Syria, Iran and Libya. At the same time, terrorism is on the rampant throughout the world. The brutal killing of Indian citizens by the Taliban and [as believed] the ISI groups makes it further necessary to raise India’s defensive postures (The Indian Express 2006). The possibility of these terrorist organizations launching a biological or chemical attack against India cannot be totally dismissed. India has to factor in all these eventualities and formulate its strategy accordingly to guard against any offensive designs undertaken by these countries in future.

In addition, former DAE chief, P. Chidambaram stated, India has the capability to develop nuclear weapons of 200 kt yield. This capacity needs to further explored and tested to develop high yield weapons. Testing is essential to develop a credible and efficient deterrent system. For this, it is important that India has the best inventory of weapons system, tried and tested at its disposal to deter any future exigency. To this extent, India’s voluntary test moratorium does not indicate cessation of testing but that it only meant ‘utmost restraint’ in testing (Charette 1995). India retains the right to resume testing if its national interests are at any point jeopardized. This Indian understanding was conveyed to the Bush administration to the Indo-US deal negotiations.

**Global, verifiable and non-discriminatory nuclear disarmament**

India’s Nuclear Doctrine has iterated its pledge to universal global disarmament. Despite the May 1998 tests and India’s overt weaponization, it continues to support
the goal of nuclear disarmament. Ever since independence, India has urged upon the
international community the need for universal and time-bound nuclear disarmament.
India has undertaken a number of initiatives in the sphere of nuclear disarmament. In
1978, India proposed for an international convention that would prohibit the use or
threat of use of nuclear weapons. In 1982, India called for a ‘nuclear freeze’ - a
prohibition on the production of fissile materials for weapons and related delivery
systems. In 1988, Prime Minister Rajiv Gandhi had put forward an “Action Plan” for
phased elimination of all nuclear weapons within a specified time-period. India
remains committed to the basic tenet of our foreign policy that is global elimination of
nuclear weapons will enhance the security of India as well as all nations of the world.

India’s commitment to pursuing global nuclear disarmament in order to
achieve a nuclear-weapons-free-world remains undiluted. India firmly believes in
total abolition of nuclear weapons, and refused to sign the CTBT in 1996 which
permits the existing powers to retain their weapons while prohibiting others from
testing and acquiring such weapons in future. India was forced to conduct the Shakti
series of tests and go in for overt nuclear weaponization because of the discriminatory
policies of the nuclear powers and their refusal to respond positively to India’s
initiative for global disarmament. Despite overt weaponization, the concept of phased
elimination of all nuclear weapons has been, and still is, the cornerstone of India’s
nuclear doctrine. It was with aim in view that India after the May 1998 tests declared
a moratorium on further nuclear testing. In addition, India is prepared to consider
signing the CTBT and ready to join the talks in Geneva at the Conference on
Disarmament on a fissile material cut-off provided the nuclear weapon states removes
the discriminations and inequalities in these treaties. India stands for the total
elimination of all nuclear weapons. However, till this is achieved, India will be
compelled to keep open the nuclear option.

From Deterrence to Compellence
The Indian strategic community perceives nuclear weapons as strong elements of
stability that underpins its commitment to minimum deterrence and no first use. Since
its inception, Indian nuclear thinking has been always been political-strategic rather
than military-strategic. Nuclear weapons constitute various military and technical
qualities that are difficult to distinguish. One the one hand, they are regarded as military instruments and to that extent, they are inducted into our defence force structure. In this capability, nuclear weapons are treated as operational instruments to serve the battlefield purposes of armed personnel in terms of war tools. On the other hand they are predominantly political instruments in the hands of decision makers whose prime concern is to see that are not actually used. The two roles are intimately linked; “the political non-usability of nuclear weapons is the direct consequence of their operational usability”. Although the contradiction between the two roles is essentially irresolvable, it can be stated that the political role acquires precedence over the military. This perception bears enormous consequences for the India’s nuclear strategy. According to this view, nuclear weapons are dangerous and every effort must be made to avoid their utility. This perspective is in conformity with a minimalist strategy as opposed to the operational character of nuclear weapons that induces a maximalist position. India’s nuclear weapons strategy adheres to the former position. This approach has important merits. It promotes a restrained approach to nuclear policy that inhibits arms-race and encourages arms control.

Nuclear minimalism acknowledges that nuclear weapon is a prerequisite for security and stability in a realist world but at the same time, it renounces these weapons as morally unacceptable because of its highly destructive power. However, too much reliance on the political utility of nuclear weapons as instruments for deterring a potential adversary has serious drawbacks. First, the neglect of military role and operational understanding of nuclear weapons may place them in the hands of technical experts who have a maximalist approach towards nuclear weapons. Second, the relative unfamiliarity of decision-makers with the ground realities of nuclear weapons as military instruments may encourage them to initiate military actions whose nuclear-strategic implications are improperly understood (Basrur 2003: 67).

The basic framework of Indian strategic culture with respect to nuclear weapons was established during the Nehru era (Ganguly 1999: 148-147). The door to weaponization was kept open but little was done to embark upon a weapons programme because of Nehru’s belief that these horrendous weapons should be globally eliminated. However, following China’s first nuclear test immediately after
the 1962 war, the Indian government began to adopt a more cautious weaponization programme. India’s nuclear weapons programme thus vacillated between the postures of abjuration and overt nuclearization. The 1974 test left the nuclear option open by adopting a posture that might be appropriately termed as deterrence without weaponization. With the end of Cold War, India’s security environment further deteriorated. The China factor took a backseat with the disintegration of Soviet Union and hence there was significant pressure on India from the United States to cap and roll back its nuclear programme.

Simultaneously, Pakistan was also emerging as a nuclear capable power and there was substantial evidence to suggest China’s active cooperation in aiding Islamabad to develop nuclear and missile capability. In such circumstances, India’s decision to weaponize was pragmatic. Following the nuclear tests, India adopted a policy of deterrence without deployment and pledged its commitment to credible minimum deterrence. At the same time, significant political initiatives were made to neutralize potential nuclear threats. The Indian government in a bid to restore normalcy in Indo-Pak relationship cooperated on the Lahore Declaration in 1999 and the Agra Summit of 2001. India also steadily improved its relations with China. At the international level, India ‘accepted in principle the legitimacy of the Comprehensive Test Ban Treaty’ and reiterated its commitment to global disarmament. However, the leadership that viewed nuclear weapons merely as political instruments failed to realize the strategic implications of nuclear weapons and their role in India’s relationship with its adversaries, particularly Pakistan.

In the aftermath of the May 1998 tests, it was expected that India’s nuclear capability will play a decisive role in stabilizing India-Pakistan relationship. India’s nuclear weapons capability would deter Pakistan from engaging in a war that might escalate into a possible nuclear conflagration. Despite warnings from eminent strategic thinkers such as K. Sundarji and K. Subrahmanyam, the BJP-led government did not anticipate the emergence of the ‘stability-instability’ paradox in South Asia (Krepon and Gagne 2001: 134). Contrary to its expectations, Pakistan calculated that India’s conventional advantage has been overridden by mutual nuclear deterrence and that Pakistani covert pressure could henceforth be increased without fear of conventional retaliation from India (Siddiqa-Agha 2001: 178-183). The consequence
was the outbreak of Kargil War in May 1999 in which a major covert military operation by Pakistan in the Kargil sector of Kashmir resulted in a near-war situation between New Delhi and Islamabad.

The Kargil War left a mark deeply etched in Indian strategic thinking. Not only did it prove a deep sense of betrayal but also indicated that Pakistan must henceforth be dealt with in military terms. In addition, Pakistan’s newly acquired nuclear capability must not be allowed as a potent basis for it to muster cross-border terrorism. India’s politico-strategic leadership was thus left with no other option but to devise a sub-nuclear or conventional strategy against Pakistan. The first signs [of this strategy] were apparent much earlier during the Kargil conflict itself, when initial moves to mobilize Indian forces for a possible wider war began (Raghavan 2001: 89). This ultimately resulted in the draft nuclear doctrine in August 1999, which outlined India’s nuclear posture. Among other things, the drafting committee (NSAB) recommended that India must achieve the capacity for proactive conventional military response to nuclear threats (Jones 2002: 38).

However, Pakistan did not remain restrained. Barely four months later, in December 1999, the hijacking of Indian Airlines aircraft and the forced release of dreaded terrorists in exchange for the passengers dealt another major blow to the Indian government. The Indian policy makers began to reassess the security situation prevailing in the region. This led to the adoption of a limited war doctrine in a statement by the Indian Defence Minister, George Fernandes on 24 January 2000:

‘the issue is not that war has been made obsolete by nuclear weapons, and that covert war by proxy was the only option, but that conventional war remained feasible though with definite limitations if escalation across the nuclear threshold was to be avoided.....India has demonstrated in Kargil that its forces can fight and win a limited war, at a time and place chosen by the aggressor’ (Singh 2000: viii).

Reiterating the same posture, Lieutenant General R.K. Nanavati, Head of the Indian Army’s Northern Command, declared that ‘the nuclearization of the subcontinent might have altered the situation, but despite that, the stage exists for a limited conventional war’ (The Times of India 2001). There was a growing consensus among the defence planners and strategic community on the issue of low intensity conflict. This view was further strengthened following the attack on the Indian Parliament on
13 December 2001, which provided enough provocation to the Indian government to mobilize its troops on the Indo-Pakistan border. As part of its coercive strategy India launched ‘Operation Parakram’ on 19 December 2001 that involved nuclear signaling through a spate of provocative statements which confirmed the ‘belief in New Delhi that the time has come to call Pakistan’s nuclear bluff’ [in case India reconciles itself] ‘in permanent vulnerability to cross-border terrorism from Pakistan’ (Mohan 2001). The state of affairs indicated a distinct shift from a strategy of deterrence to that of compellence. Pakistan also adopted a similar approach in the form of a compellent threat which was evident from a series of action including the demand to hand over terrorists. The Pakistani threat was neutralized and ‘decomposed’ by a series of provocative and inflammatory statements.

As part of its coercive strategy, on December 21 India recalled its High Commissioner, Vijay Nambiar and terminated bus and train services to Pakistan (Aneja 2001). On December 25, it was reported that the Army had moved its nuclear capable short range Prithvi missiles to the frontiers (Thapar 2001). The Defence Minister George Fernandes further stated that India had deployed its fighter-jets along frontier bases and that its missiles were in position (The Hindu 2001). On December 28, India ordered the reduction of the Pakistani High Commission in New Delhi by half within 48 hours, restricted the movements of Pakistani diplomats in the country and banned all over-flights facilities to Pakistan (Aneja and Dikshit 2001). Less than an hour, Pakistan reciprocated in equal degree. Continuing the coercive diplomacy, on 25 January 2002, India fired the nuclear capable Agni missile.

The Indian rhetoric remained undeterred. India made it clear that given its no-first use stand, India will not resort to launch a nuclear attack, but if Pakistan were to resort to a first strike, New Delhi would retaliate with a crushing second-strike inflicting unacceptable punishment to Islamabad. Though, India did not specify the nature of India’s retaliation, the prevailing events indicated a major conventional thrust. On December 29, Defence Minister George Fernandes, warned:

‘Pakistan can’t think of using nuclear weapons despite the fact that they are not committed to the doctrine of no first use like we are. We could take a strike, survive, and then hit back. Pakistan would be finished. I really do not fear that the nuclear issue would figure in a conflict’ (Hindustan Times 2001).
The threat of nuclear desolation came frequently and consistently. On 11 January 2002, India’s Army Chief, General S. Padmanabhan stated that India possessed the capability of a retaliatory strike and warned that if any country initiated a nuclear attack against it, then “the perpetrator of that particular outrage shall be punished...severely”. According to the National Security Advisor, Brajesh Mishra, from 13 December 2001 to 14 May 2002, when the Army residential camp in Kaluchak was attacked by terrorists, New Delhi came close to using force against Pakistan (Mishra 2002). This period of conventional as well as non-conventional signaling continued till June 2002. The point that India wanted to drive at was that nuclear weapons are not equalizers and that asymmetry does matter. India was convinced that its conventional and nuclear superiority gave an edge to its capabilities. Pakistan could not resort to a nuclear strike since the costs of a nuclear war would be disproportionate and though in a nuclear war, India would be hurt, Pakistan would be annihilated. Even in a conventional war, Pakistan has to exercise caution for fear of escalation to a nuclear war. Thus a compellence strategy to inflict punishment on a politically and economically unstable Pakistan would be of benefit to India. After all as pointed out by Admiral Sushil Kumar, “The nukes are for negotiation, they are not weapons of war (Kumar 2002).

India’s compellence strategy under a nuclear shadow is fraught with serious problems. A sub-nuclear war always poses the risk of escalating into a full-fledged nuclear war. One cannot rule out the risk of loss of control in a crisis situation or accidental war caused by unforeseen events that can include possibilities such as a terrorist attack misunderstood for an enemy strike; a false warning of a nuclear strike or even unexpected move by a military commander inviting nuclear retaliation. During the crisis of 2000-2001, a senior Indian official commented that, ‘we’ve found there is a lot of strategic space between a low intensity war waged with Pakistan and the nuclear threshold [and so] we are utilizing military options without worrying about a nuclear threshold’ (Hersh 2002). The fallacy of this kind of assessment lies in the fact that the Indian strategists and politicians did not realize the pitfalls of an action-reaction process leading nuclear adversaries on the brink of a catastrophe. The problem in a conventional war is that the risks involved in it can never be quantified. If India’s threat of a compellence strategy is to break down, then Pakistan would not hesitate to resort to a first strike of nuclear weapons, followed by a devastating second
strike by India. Thus, India is in effect caught in a rather unique Pakistani pincer movement, not geographically of course but rather along the escalation ladder (Sahni 2004: 140). Unlike in the case of the Sino-Soviet conflict of 1969, Pakistan has been able to hostage India between its self sponsored cross-border terrorism and the threat of a nuclear war. Nuclearization of South Asia has left a disproportionate impact on India and Pakistan as far as their inclination to resort to the use of force against each other is concerned. In other words, the acquisition of nuclear deterrent by Pakistan has provided it not only with a capacity but also confidence to launch an offensive attack against India. Simultaneously, the strategic parity has impaired India’s ability to counter Pakistan. Though the object of a compellence strategy may be an inducement to submit, it can be reversed at any chosen time by the weaker state.

Another aspect that needs attention is the relationship between the conventional and the nuclear capability in general and how the conventional forces should be harmonized with the capabilities of the SFC in particular. This is of crucial importance as it poses critical strategic concerns. First, as a consequence of the nuclear no-first-use posture there might be a tendency on the part of the Indian armed forces to launch pre-emptive conventional operations, during the course of which the nuclear assets of the potential adversaries would also be targeted. This was clearly evident in the ‘limited war’ concept propounded in the wake of the Kargil conflict. Such a strategy, especially one designed to take out the nuclear delivery capability of the adversary, might well force the nuclear-armed opponent into a “use them or lose them” corner and lead to an inadvertent nuclear exchange (Sidhu 2003). Second, there exists a lot of ambiguity on how India would respond to a similar conventional contingency. For example, if an enemy were to attack its nuclear forces using conventional means, would New Delhi perceive this as a first use, thus giving India the right to resort to a nuclear riposte with its second-strike nuclear capability? This would result in a violation of its no-first-use posture. Or would India chose to limit itself to a conventional response and try to take out the nuclear assets of the adversary even at the risk that such retaliation might lead to a nuclear escalation? The compellence strategy falls short of providing conclusive answers to these important questions.
Nuclear Terrorism and Safety Measures

The events of 11 September 2001, left a major impact on the issue of nuclear terrorism and the related aspect of nuclear safety. The brutal attack on the World Trade Center in New York has magnified the problem of nuclear terrorism leaving it virtually impossible to rule a possible nuclear, chemical and biological attack against India. In the aftermath of September 11 events, the risk of nuclear weapons or materials falling into the hands of non-state actors have emerged as a worrying concern. The global stockpile of nuclear weapons runs into thousands, but these are mostly stockpiled in US and Russia. While the nuclear stockpile of US and Russia runs into tens of thousands, that of UK, France and China are in hundreds, while that of India and Pakistan are at most in tens (Balachandran 2003: 89). According to reliable estimates, the global stock of weapon-grade fissile material at the end of 1999 was 248 of plutonium and 1665 MT of highly enriched uranium (Albright and Gorwitz 2000: 56). Of these, the five NPT recognized nuclear weapon states had an estimated 247 MT of Pu and 1664 MT of HEU. India and Pakistan had between them an estimated stockpile of 0.315 MT of Pu and 0.690 MT of HEU. The existence of a thriving nuclear black-market revealed while investigating the AQ Khan’s case have greatly heightened concerns of smuggling and trafficking of nuclear materials, technologies and blue-prints falling in the hands of terrorists.

Besides, the risks posed by concerns of nuclear terrorism, nuclear safety is yet another area that requires critical attention. The Three Mile Island incident in USA in 1979 and the far more serious Chernobyl accident in Ukraine in 1986 shook the complacency of International Atomic Energy Agency (IAEA). In India, the Bhopal gas tragedy has left deep scars in the minds of many. It is thus imperative that the strategic managers of India take adequate steps to safeguard against any such disaster in the future. The international community has regarded the problem of nuclear safety with grave concern. Post Chernobyl, the international community under the aegis of the IAEA have formulated a number of legally binding international safety arrangements aimed at strengthening international co-operation in nuclear radiation and waste management issues. They include the following:

- the Convention on the Physical Protection of Nuclear Material
- the Convention on early Notification of a Nuclear Accident
• the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency
• the Convention on Nuclear Safety

Of these five international conventions, India has ratified the first three. India’s reluctance to sign the other two conventions is based on the distinction made by them between civilian and military nuclear activities. According to India, ‘a convention on nuclear safety should cover all power plants, civil and military’ (Balachandran 2003: 87). However, the ratification of the first three conventions indicates India’s commitment to adhere to the highest international norms and standards for the safety and security of these sensitive materials from falling into the hands of dreaded terrorists. India’s responsibility towards the safeguard and protection of fissile materials has been further made obvious during the Indo-US nuclear deal. As part of the separation plan, India has agreed to place 65 percent of its nuclear plants under IAEA safeguards. These safeguards shall be “in perpetuity” and shall not be abrogated till uninterrupted supply of civilian energy is continued by the US. This step has further enhanced the security of the nuclear reactors and plants in India from being targeted by any adversary or terrorist outfit. Hence, India will be under less pressure and will be able to exercise stringent controls and constant vigilance over the remaining 35 percent of our nuclear plants constituting military reactors. India has undertaken adequate measures to effect foolproof safeguard of its nuclear weapons and fissile material stockpile commensurate with its status of a responsible nuclear power.

India’s Nuclear Weapons and its Grand Strategy

Nuclear deterrence has not changed by a degree, since the time it began to be experienced in the 1950s. Nuclear deterrence used pragmatically in an anarchic world provides stability and security. The aim of India’s nuclear deterrence capability has been to safeguard itself from blackmail and coercive diplomacy of adversarial nuclear enemies. Its doctrinal principles of minimum nuclear deterrence and no first use are consistent with India’s declaration of a modest nuclear weapons policy. The official announcements, in the aftermath of the May 1998 tests indicate that India is set out on
a pragmatic course of action. Judging by these official statements, India’s nuclear policy adheres to a credible minimum deterrent, no first use, a relaxed approach to deterrence, possible accession to CTBT and negotiating the FMCT. Eight years after the tests, Indian government policies reflect this approach substantially. The Indian government has also respected its commitment to the non-use of nuclear weapons against non-nuclear states, continued missile testing, a moratorium on testing, tightening export controls on dual-use technology and global nuclear disarmament.

The CCS in January 2003, proposed certain modifications in the draft doctrine. The committee made clear that in future if India is attacked by any biological and chemical weapons then it will retain the option of retaliating with nuclear weapons. This has received criticism from several quarters. Such an explicit link reduces the deterrence value of nuclear weapons and particularly enhances the value of chemical weapons, which have always been regarded as “a poor man’s nuclear weapons”. It also is not clear about India’s potential adversaries that are likely to launch a chemical or biological weapons attack against New Delhi.

Most of India’s neighbours and potential adversaries have signed and ratified the Chemical Weapons Convention (CWC) and the Biological Weapons Convention (BWC) which not only prohibit the possession but also ban the use of these weapons. Countries such as Afghanistan, Bhutan and Myanmar who have signed but not ratified the CWC and BWC, do not have the capability to use these weapons against India even if they possessed them. Moreover, even if a chemical attack had been launched, for instance, from Afghanistan, it would be highly unlikely that New Delhi would retaliate with a nuclear strike, given the US presence and other international forces stationed there. The list excludes North Korea, Egypt, Iraq, Libya, Syria (non-signatories to the CWC) and Israel and Kazakhstan (non-signatories to the BWC) — which could use these weapons against India. But there appears no reason for them to resort to such offensive action against India. The Government response to these criticisms has been carefully measured. India’s stand is based on its careful assessment of the security dynamics prevailing in the world in the aftermath of 9/11. With an upsurge of terrorist groups in the global scenario, India’s official declaration is a safeguard measure and a call to all nations to adopt a united approach to exterminate these non-state actors with an adversarial bent of mind.
India's official nuclear deterrence posture, has of late received appreciation and accolades especially in the backdrop of the Indo-US nuclear deal. India has demonstrated restraint and responsibility in all its nuclear policy issues. In May 2005, India enacted the Weapons of Mass Destruction and their Delivery System (Prohibition of Unlawful Activities) Bill 2005, to impose stringent controls on illegal trafficking of WMD materials. The US has globally proclaimed India to be a responsible nuclear weapon power with a clean non-proliferation record. The allegations leveled against India that it utilized the fissile material produced in the CIRUS reactor for weaponization purpose in violation of the Indo-Canadian agreement has been annulled by the US. There exists no substantial evidence to implicate India for nuclear proliferation. India's nuclear record has earned it a prestigious place in the global scenario. In view of its responsible nuclear policies, the United States with Russia have expressed their eagerness to enter into civilian nuclear energy cooperation with India. In addition, India has also been considered an apt partner for the ITER project that was negotiated in January 2006 with European Union, China, Japan, South Korea, Russia and the United States.

Nuclear weapons have come to acquire a distinct place in India's grand strategy. The role that nuclear weapons would play in India's strategic policy has been articulated by various strategic thinkers. India's pro-bomb strategic community puts forth, three viewpoints on nuclear policy each contending for dominance. These are known as rejectionism, pragmatism and maximalism. Although, these schools of thought differ grossly on crucial matters relating to the nature of the deterrent, there is a general agreement on only one thing substantially, namely, that nuclear weapons are vital for India's security. But each of these schools have their own rationale for India's nuclear deterrent.

The Rejectionists
The Rejectionists holds a view that is in conformity with India's traditional oppositional stand on nuclear weapons. According to them, nuclear weapons are essential in a global order where there are others in possession of such weapons of mass destruction. Such states refuse to relinquish nuclear weapons and pose a serious threat to India's national security. Thus Arundhuti Ghosh, India's Permanent
Representative to the Conference on Disarmament (CD) in 1996, argues: “I would like to state that for long as we continue to live in a nuclear world, we would need nuclear weapons for our security” (Ghosh 1997: 244). It thus logically follows that nuclear weapons are essential not only as a deterrent against NWS but in a politically and militarily unequal world, they provide greater security and established security provides greater equality. The rejectionists opine that nuclear weapons act as a political and military equalizer and are thus an invaluable investment in security.

Rejectionists argue that the non-proliferation regime is fundamentally unequal and hegemonistic and hence it must be resisted. India refused to sign the CTBT in 1996 mainly because the test ban treaty was highly discriminatory. The treaty permitted the NWS to conduct sub-critical and other forms of sophisticated testing while prohibited other states from doing so. They are not in favour of signing the CTBT or fissile material cut off because all steps, including a test ban treaty, a convention on non-use, a fissile material cut-off treaty (FMCT) - even the Non-Proliferation Treaty - made no strategic or political sense unless they led to total nuclear disarmament (Bajpai 2000: 278). It is beyond doubt that the test ban treaty and the proposed FMCT are instruments of control of the non-nuclear weapons states by the nuclear weapon states. In order to maintain its military-technological superiority over all other countries, the United States proposed a political and legal framework in the form of an indefinite extension of NPT, a highly discriminatory and flawed CTBT and the application of non-proliferation as a customary norm of international law at the United Nations. This is certainly unequal. This inequality leads to instability, instability leads to insecurity which impinges adversely on India’s interest as well. Acquisition of nuclear deterrence is thus necessary, even indispensable condition for safeguarding India’s security, for gaining the bargaining clout which has so far been lamentably missing and for making an effective contribution to shaping a new world order (The Hindu 1998).

Nevertheless, the rejectionists are committed towards the goal of nuclear disarmament. It is desirable because if nuclear weapons are ever used whether accidentally or otherwise the effect would be catastrophic not just for the countries involved but also for the whole global community. Further, nuclear weapons are ethically repugnant. The events of Hiroshima and Nagasaki depict the horrific effects
of the atom bomb. Moreover, nuclear weapons in the hands of a few are discriminatory which can lead to a situation of instability and violence. The rejectionists thus insist on the abolition of nuclear weapons. Their contention is if the international community could abolish biological and chemical weapons, then it is quite possible to get rid of nuclear weapons. The first comprehensive step towards this direction must necessarily involve the existing nuclear weapons states commit themselves to its achievement in a time bound and phased manner. Once they do so, rejectionists suggest that India should join the non-proliferation regime.

The Pragmatists

The Pragmatists, like the rejectionists, also believe in the vital necessity of nuclear weapons for India’s security. According to them, the nuclear power insists on the fundamental importance of nuclear weapons for their security interests. Nuclear weapons serve different aspects of national interest of the five nuclear weapon powers (Subrahmanyam 1998: 2007). Hence they seek to legitimize the keeping of nuclear weapons while denying the same to non-nuclear weapons states. But at the same time, the pragmatists differ from the rejectionists on the crucial issue of non-proliferation regime. Whereas the rejectionists rule out any possibility of joining the non-proliferation regime, the pragmatists propose that the objections that CTBT was a threat to our national security are no longer valid. India is now an overt nuclear weapons state. Hence, India should seriously consider signing the CTBT. They suggest that by joining the CTBT and a possible FMCT, India would get a de facto if not a de jure recognition of its new found nuclear status.

Unlike rejectionists, the pragmatists are sceptical about the prospects of abolition of nuclear weapons. This is because the incipient “revolution in military affairs” (RMA) will give the US and its Western allies an insurmountable lead in conventional weaponry and this can only be balanced by nuclear weapons (Bajpai 2000: 281). Moreover, India wants to emerge as a player in the global nuclear order. Nuclear weapons would serve to keep India in the game of international politics. However, some pragmatists like, K. Subrahmanyam are not so sceptical about disarmament. They believe that an overt nuclear weaponized India is better placed to strive towards disarmament.
The Maximalists

The third school of thought on nuclear weapons is that of the Maximalists. The maximalists are in favour of India arming itself adequately with nuclear weapons at the earliest possible. They are not satisfied with the relaxed “minimum deterrence” strategy. This is in sharp contrast with the viewpoints of rejectionists and pragmatists who would be satisfied with 18-120 relatively small Hiroshima type devices. Some maximalists like Bharat Karnad want an arsenal as big as that of the secondary nuclear powers. India must embark upon a vigorous nuclear programme of research and testing to achieve at least national parity with the three “second tier” nuclear weapons states - the UK, France and China. India thus requires to build-up nothing less than 300-400 nuclear warheads before it considers capping the stockpile (Nair 1998: 149). Other maximalists like Vijay K. Nair, are in favour of a more modest arsenal but a classical deterrence force including a triad of air-land-sea launched nuclear weapons and sophisticated command and control systems. According to the maximalists, India must be prepared to fight and not just deter nuclear war.

The maximalists feel that India must not join the non-proliferation regime. The CTBT and a future FMCT must not constrain the achievement of a credible nuclear force. A credible nuclear arsenal would enable India to attain a more survival deterrent with greater lethality. This posture would act as a potent factor for India to play a significant role in the strategic playing field and establish its geopolitical role and global interests in the coming century. Maximalists regard nuclear disarmament as undesirable and impractical on strategic and technical grounds. Disarmament is harmful to India’s national interest in an era where military power is the pivot of international diplomacy. What India requires is a potent nuclear deterrent to safeguard its national security.

In spite of these differences existing between the three schools, they broadly agree on only one thing, namely, that India needs nuclear weapons in order to play a significant role in global politics and protects its vital interests. It is apparent that India’s grand strategy is inclined towards nuclear pragmatism. At the declaratory level, India’s nuclear doctrine has demonstrated its commitment to the principles enunciated it. At the same time there will always be a process of evolution. India will
have to assess and reassess it security dynamics and plan out its strategy to meet its requirements. To this extent, the draft nuclear doctrine has undergone evolution in January 2004 when certain new modifications were made to it.

The world has entered into the realm of the second nuclear age. The development is of crucial importance, particularly in the Asian context. The strategic weight of the world has shifted to Asia. To that extent, it can be said that the present period has witnessed the dawn of “Asian Nuclear Age”. The balance of power has considerably tilted to this part of the world with the existence of China as the top-ranking second tier nuclear weapon state (NWS) in South Asia. The concept is further reinforced with the emergence of Iran and India with evolving nuclear power capabilities. Clearly, Asia is emerging as the power centre in the second nuclear age wherein nuclear weapons occupy a vital place in security dynamics. Keeping in stride with this new development, India has exercised caution and demonstrated prudence in its exercise of nuclear politics. In July 2004, former Foreign Minister, K Natwar Singh proposed a common nuclear doctrine for India, Pakistan and China (Gupta 2004: 47). The idea is to create a confidence building measure premised upon the principle that though we deal with nuclear weapons (that underlies diabolical consequences) for the conduct of our political and strategic affairs, we must exhibit restraint, prudence and responsible attitude in our respective nuclear policies.

India has shown increasing commitment in engaging global powers within its defence parameters. India, China and Russia are forming a strategic triangle with a common approach towards global issues (Singh 2005). In the present regional and international context, India is faced with challenges that revolve around two fundamental issues: formulating a conceptual framework of India’s security; and the nature of challenges posed to the security and national interests of India. The pressing realities of the international order and their consequences cannot be overlooked on grounds of morality or pious righteousness. The most important objective of India is to provide a safe and secured future to its people. In order to fulfill this national goal, it is imperative for India to develop and obtain the requisite wherewithal and capabilities. The prime need of the hour is to build a conceptual framework for India’s security based upon four fundamentals: democracy, secularism, non-alignment and national power. The strategic requirements of India must be set in the global context
in relation to the strength of China Pakistan and other emerging powers like Iran. Therefore, it is essentially important for India to develop and sustain a viable minimum deterrent to protect its national interests, while at the same time, making every initiative to establish a new world order based on universal nuclear disarmament. Five decades ago, our first prime minister Jawaharlal Nehru led the nation to keep tryst with destiny; it is now for the Indian leadership and the people of today to realize that tryst with India’s destiny so that we can deal with future challenges and maintain our sovereignty, autonomy and strategic independence.

**Conclusion**

In the ultimate analysis, it can be said that India has traversed a long way on the nuclear path since independence. From a state of economic impoverishment, political uncertainty and scientific and technological backwardness, India has undertaken a long an arduous journey to achieve the status of a responsible nuclear weapon power in the present day. In this tedious journey; India encountered several limitations and constraints, the foremost being the lack of political will in the country. The limitations were further multiplied by the meager economic resources and lack of scientific temperament. How could a country think of developing nuclear weapons when it did have enough food and socio-economic security for its population? Despite these drawbacks and constraints, India has set its priority clear and evolved a pragmatic strategy that took care of not only are security requirements but also the economic problems.

From a state of initial reluctance, India embarked upon the nuclear path with little or no resources. The political will on the issue of nuclear weapons that was quite divided in the country in the initial years have undergone immense transformation. There is a now a consensus in the country in favour of sustaining our nuclear weapons programme. This was clearly evident in the aftermath of the Indo-US nuclear deal of July 2005. Along with all the major political parties, the Left Parties who have always stood against nuclear weapons, vehemently opposed the surrender of our military facilities to IAEA safeguards and expressed its unstinted support for sustaining our strategic programme. For a socialist party, that has abhorred nuclear weapons and advocated the economic development of the people as priority, this was definitely a
revolutionary stance. It only reinforces our belief that the political will in India strongly favours the continuance of the country’s nuclear weapons policy.

On the economic front, India faces several challenges. India is a developing country and can spend only the barest minimum on defence. For a country with over one billion population, it is an undaunting task to divert a significant portion of its resources for developing unconventional weapons in addition to other defence requirements. However, threat assessment is an important aspect of defence policy. Hence, it is the foremost duty of the government to make sufficient investment for creating and maintaining a force structure that will be able to defend against perceived threats and dangers. But that expenditure must provide a credible fighting force to safeguard our value assets. It was with this aim in mind that India made investment in our strategic programme. Today, sufficient investment has enabled India to have a vast nuclear infrastructure and a complete fuel cycle. This will help India to develop a limited nuclear weapons capability in both quality and quantity in keeping with her strategic requirements. In addition, this has also led to significant spin-offs in generating employment and attracting foreign investment. Thus, it can be assumed that with its limited economic resources, India has been able to achieve a viable strategic programme. At present, India has economically developed sufficiently with a growth rate of over 7 percent. It is expected that India will be able to maintain this growth rate that will enable it to invest adequately for sustaining a more sophisticated nuclear arsenal.

In the technological area, India has made vast achievements as is evident from our missile and space programmes. The nuclear tests of May 1998 provided a valuable database for upgrading India’s military capability so as to enable it to add some real teeth in its nuclear deterrent posture. India has already inducted the nuclear-capable Agni I and Agni II missiles within the army. The partial success of the 3,500-4,000 kms Agni III provides a stepping stone for developing more long-range intercontinental ballistic missiles. In addition, India’s space programme has also made significant progress and is high-rated in the world. India’s technological achievements have helped it to be part of prestigious projects like the ITER which will further boost India’s technological capabilities. India’s technological success has invoked the
interest of foreign powers and they have expressed their eagerness to enter into bilateral relations in the fields of technology and science.

Undoubtedly, there still exists a plethora of new challenges for India’s nuclear policy. There are elements of pessimism and constraints facing our nuclear weapons programme. Despite, the existing signs of pessimism, there are aspects of optimism that indicate that India is moving in the right direction. India nuclear weapons programme is chugging slowly but steadily towards developing and sustaining a credible minimum nuclear deterrent for the protection of our national interests.

Finally, having failed in its efforts for decades to achieve global nuclear disarmament, India has reluctantly resorted to weaponize its capability. The dominant rationale for the development and deployment of nuclear weapons is their prime utility as deterrents against other nuclear weapons states with a belligerent attitude, though in the long-term, India remains convinced to pursue disarmament as the ultimate guarantor of peace amongst nations.