USA AND SOUTH ASIA: THE ISSUE OF NUCLEAR PROLIFERATION

ABSTRACT
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By
HINA MIRZA

Under the supervision of
PROF. T.A. NIZAMI

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Abstract
USA and South Asia: The Issue of Nuclear Proliferation

Abstract

One of the greatest evil of scientific discoveries in the mid-twentieth century is the success of American scientists, engaged in the Manhattam project. Infact it was a German initiative. But the German talent was transferred to America due to Hitler’s anti Jewish policies and succeeded America in manufacturing the first ever nuclear device. Other European countries and Russia and China also joined the armament race. USSR got the second position in the race as she had detonated its first nuclear device in 1949. After that, Britain had tested its nuclear device in 1952, France in 1960, and China in 1964 test fired their first nuclear devices and became party to the nuclear weapons states.

Its immense devastating capability was realized by almost all the countries of the world. Therefore, efforts for controlling and eliminating these weapons were started immediately after the Second World War. Throughout the Cold War period, a number of treaties and agreements were signed among the independent nations to reduce, control, restrict and abolish these weapons. But the whole Cold War period witnessed a mad arms race between the two superpowers.

The treaty on the non-proliferation of nuclear weapons signed on July 1, 1968 remains the bedrock of the post-second World War global non-proliferation regime. With 187 states parties, this Treaty is the most widely adhered to and the most successful multilateral arms control agreement in history. The successful conclusion, in 1968, of negotiations on the NPT was a landmark in the history of non-proliferation.
The NPTs main objectives are to stop the further spread of nuclear weapons, to provide security for non-nuclear weapons states which have given up the nuclear option, to encourage international co-operation in the peaceful uses of nuclear energy, and to pursue negotiations in good faith towards nuclear disarmament leading to the eventual elimination of nuclear weapons.

The NPT is fundamental, but the broader regime is a complex system of multilateral and bilateral agreements, arrangements and mechanisms intended to promote and achieve a world without nuclear weapons, sooner rather than later. This was valid during the Cold War and remains valid today. At the same time, the regime is intended to provide a framework to enable the world to make effective use of nuclear capability for peaceful purposes.

The International Atomic Energy Agency (IAEA) was set up by unanimous resolution of the United Nations in 1957 to help nation develop nuclear energy for peaceful purposes. Allied to this role is the administration safeguards arrangements. This provide assurance to the international community that individual countries are honoring their treaty commitments to use nuclear materials and facilities exclusively for peaceful purposes.

The IAEA therefore undertakes regular inspections of civil nuclear facilities to verify the accuracy of documentation supplied to it. The agency checks inventories and undertakes sampling and analysis of materials. Safeguards are designed to deter diversion of nuclear materials by increasing the risk of early detection. They are complemented by controls on the export of sensitive technology from countries such as UK and USA through voluntary bodies such as the Nuclear Suppliers’ Group.

Traditional safeguards are arrangements to account for and control the use of nuclear materials. This verification is a key element is the international system which ensures that uranium in particular in used only for peaceful purposes.
The IAEA therefore undertakes regular inspections of civil nuclear facilities to verify the accuracy of documentation supplied to it.

The aim of traditional IAEA safeguards is to deter the diversion of nuclear material from peaceful use by maximizing the risk of early detection.

IAEA safeguards together with bilateral safeguards applied under the NPT can, and do, ensure that uranium supplied by countries such as Australia and Canada does not contribute to nuclear weapons proliferation. In fact the worldwide application of those safeguards and the substantial world trade in uranium for nuclear electricity make the proliferation of nuclear weapons much less likely.

There are also several other treaties and arrangements designed to reduce the risk of civil nuclear power's contributing to weapons proliferation.

Shortly after entry into force of the NPT, multilateral consultations on nuclear export controls led to the establishment of two separate mechanisms for dealing with nuclear exports: the Zangger Committee in 1971 and the Nuclear Suppliers Group (NSG) in 1975.

Though the official policy goal of the United Nations is general and complete disarmament, it has never been seriously pursued because such an idea runs into tremendous problems of definition. From its inception commentators have tended to use "arms control" as a synonym for "disarmament" and then judged arms control by the degree of disarmament occurring at any particular time, there are crucial differences in the meaning and approach to the two terms.

Arms control came into being partly in response to the advent of the nuclear "balance of terror" and partly as a response to a perceived failure of the disarmament approach in the years immediately before and after World War II. In 1945,
While disarmament was seen as an alternative to military strength, arms control was seen as a complement to it, since both enhance national and international security in different ways. While proponents of disarmament saw the existence of weapons as a cause of arms races and war, arms control was felt to represent a recognition of the continuing utility of military power in the modern world and the new arms controllers believed that there was no simple cause and effect relationship between the possession of weapons and the outbreak of war as armaments were ever present features in the landscape of international politics and they were as much a part of the peace-time as well as the war-time environment.

Throughout the cold war period, the armament race between the Soviet Union and the United States was controlled by a number of bilateral agreements. The US-Soviet/Russian agreements are: the treaty on the limitation of anti-ballistic missile systems or ABM Treaty (signed 1972); the treaty on the limitation of underground nuclear weapon tests or Threshold Test Ban Treaty/TTBT (signed 1974); the treaty on underground nuclear explosions for peaceful purposes or the Peaceful Nuclear Explosions Treaty/PNET (signed 1976); the treaty on the elimination of intermediate range and shorter-range missiles or INF Treaty (signed 1987); the treaty on the reduction and limitation of strategic offensive arms or START I Treaty (signed 1991); and the treaty on further reduction and limitation of strategic offensive arms or START II Treaty (signed 1993).

John Kennedy tried to revive efforts to eliminate nuclear weapons. On September 25, 1961, he presented to the UN a “Program for General and Complete Disarmament”, “The weapons of war must be abolished”, he said, “before they abolish us”. His ambitious plan included all the elements that negotiators still pursue today: a comprehensive nuclear test ban; a ban on the production of fissionable materials for use in weapons (plutonium and highly enriched uranium); the placement of all weapons materials under international safeguards; a ban on the transfer of nuclear weapons, their materials or their technology; and deep reductions in existing nuclear weapons and their delivery vehicles, with the goal of eventually eliminating them.
During the 1980s and early 1990s the Regan administration developed the Strategic Defense Initiative (SDI) which was an Anti Ballistic Missile System. The concept was to form a defensive shield against the nuclear attack from the Soviet Union. The popular press designated the program as “Star Wars” and was often critical of its extreme cost. The initial focus of the SDI was a nuclear explosion powered X-Ray laser designed at Lawrence Livermore National Laboratory by a young scientist named Peter Hagelstein who worked with a team called O Group, doing much of the work in the late seventies and early eighties. O Group was headed by physicist Lowell Wood, a friend of Edward Teller, the “father of the Hydrogen bomb”. In 1983 President Reagan was told of Hagelstein’s breakthrough by Teller, which prompted Reagan’s ‘Star War’ speech on March 8, 1983.

Though the program initially focused on large scale systems designed to defeat a Soviet offensive strike. However, as the threat diminished, the program shifted towards smaller systems designed to defeat limited or accidental launches. By 1987 the SDIO developed a national missile defense concept called the Strategic Defense System Phase-1 Architecture. This concept consisted of ground and space based sensors and weapons, as well as central battle management system. The ground based systems operational today trace their roots back to this concept. In his 1991 State of the Union address George H. W Bush shifted the focus of SDI from defence of North America against large scale strikes to a system focusing on theatre missile defense called Global Protection Against Limited Strike (GPALS).

Reagan’s vision of missile defense turned this address into one of the most controversial and influential presidential speeches of the 1980s. Some political analysts argue that by dramatically raising the stakes in the military competition between the US and the Soviet Union, Reagan’s missile defense program paved the way for the success of later arms reduction talks.

In subsequent decades, the notion of effective missile defence was gradually displaced by the principle of nuclear deterrence (appropriately known as MAD, for Mutually Assured Destruction). However, in the late 1970s, interest in strategic
defence systems re-emerged in certain scientific, military and political circles which exerted a strong influence on Reagan, who was already opposed to the concept of offence-based nuclear deterrence and genuinely concerned about the vulnerability of the US in the event of a nuclear attack.

Since the end of the Cold War, a number of arms control advocates, politicians, and military officers have argued that the United States should substantially reduce its reliance upon nuclear weapons. Taking that argument to an extreme, a loosely knit group of retired military officers, scientists, and defense intellectuals maintains that the elimination of nuclear weapons should be an explicit goal of the United States. The abolitionists contend that the only plausible use of nuclear weapons is to deter nuclear attack and that getting rid of nuclear weapons would eliminate this rationale. Although those holding more moderate views find this argument impractical, they too are ambivalent about nuclear deterrence, claiming that the risk of accidental or unauthorized launch of nuclear weapons outweighs any conceivable benefit. Some abolitionists and many military officers maintain that conventional precision-guided munitions (PGMs) offer an effective alternative to nuclear weapons.

The overriding interest of the United States in South Asia lies in the establishment of positive and constructive relations with India, a rising power with one sixth of the world’s population. India is growing economically at an average annual rate of 7%, and is developing significant military power projection capabilities that will make it an increasingly important factor in the Asia balance of power and in global councils.

The most sensitive issue in American relations with the South Asian countries especially India and Pakistan is the issue of nuclear non proliferation and nuclear arms control. Since the end of the cold war and the collapse of the Soviet Union, American self image as the “only super power” has reinforced the American assumption that the nuclear club should be restricted to its five present members and that the United States is entitled to have the biggest—and best—nuclear arsenal in order to preserve international stability. In pressing India and Pakistan to sign the NPT, the United States has presented its position in
benign, altruistic terms, emphasizing its desire to help prevent a nuclear war in South Asia. The implication is that South Asian are irrational fanatics who cannot be trusted with the bomb and that deterrence, which was the basis of the United States strategic doctrine during the cold war, will not work in the non-Western world. Since the United States is the only country that has ever used nuclear weapons, this American emphasis on the nuclear danger in South Asia is viewed in India and Pakistan as at best patronizing and at worst racist.

Despite a number of pronouncement, the United States has failed to give India and Pakistan concrete incentives to cap their nuclear weapons potential at present levels. Yet the Perry declaration has opened up the possibility of a pragmatic bargain between India and the United States that could achieve the capping objective and, more broadly, reduce tensions over nonproliferation that could threaten the stability of the Indo-American relationship.

The United States for its part, would have to make clear that it is reconciled to India’s acquisition of the nuclear weapons option and avoid policies suggesting that it still harbors the “rollback” objective. In particular, the United States would have to end its ban on the sale of nuclear reactors to India and other restrictions on United States cooperation with India’s civilian nuclear power program, starting with restrictions on United States cooperation on nuclear safety. This would require amendment of the 1978 Nuclear Non-Proliferation Act to allow exports of Nuclear technology under specified conditions.

India tested five tests on may 11, 13, 1998 and almost a year later, declared herself to be a state of nuclear weapon. Rather than a nuclear weapon state, by disclosing to the public its draft nuclear Doctrine. Even before the development of an operational Indian nuclear force, however, a doctrinal framework for it has been proposed. The document proposing a Nuclear Doctrine for India is designed to stimulate informed discussion on the “credible minimum deterrent”. India has decided to put in place to safeguard its strategic autonomy. The Nuclear Doctrine Group of the National Security Advisory Board prepared a draft after detailed discussions spread over several months. This consensus draft a consensus document of the entire National
Security Advisory Board. It is now for the Strategic Policy Group, the National Security Council and then the Cabinet to approve, or reject the document.

The Draft Nuclear Doctrine (DND) formulated by the National Security Advisory Board and released for public debate by the departing Vajpayee government in August 1999, is a remarkable documents (National Security Advisory Board 1999). Not only has it in simple, clear language brought together very divergent views on the controversial issue of nuclear policy, it has shifted the intellectual level of debate, so heated in the aftermath of Pokhran-II, from the polemical to the thoughtful.

The DND envisages a triad of air, land and sea-based delivery systems whose “survivability will be enhanced by a combination of multiple redundant systems, mobility, dispersion and deception”. It distinguished between an unspecified “peacetime deployment” and a shift to “fully employable forces” in the event of a conflict arising. There is an emphasis on credibility – “any adversary must know that Indian can and will retaliate” – and on effectiveness based on “reliability, timeliness, accuracy and weight of attack”. The DND goes on to outline the requirements for command and control, security and safety, and research and development, and concludes by focusing on disarmament and arms control.

Assuming that states such as India make decision according to realist models and are driven primarily by national security imperatives, Western theorists and policymakers expect that India should build and deploy a nuclear arsenal of sufficient quantity and operational quality to ensure that it could withstand an adversary’s first strike and retaliate with enough nuclear force to end a war on India’s terms. Indeed, according to these theories India should have built, deployed, and operationally fine-tuned such a survivable second strike arsenal long ago.

The May 11 and 13 tests do not give India the minimum nuclear deterrence it intends to acquire. In order to acquire such a deterrence it would be necessary for India to fabricate more
nuclear weapons, and to test and produce the Agni missile, both of its proven range as well as of the improved range. In addition, it will also become necessary for India to deploy its nuclear weapons and put in place the command, control and intelligence system, and define its new security strategy. All these may take a minimum of two to five years or may be even longer. It is, therefore, premature to declare ourselves as a nuclear weapon state now.

All this must be weighed against the situation India had confronted in May-June 1998. An angry and shaken United States imposed wide-ranging sanctions against India. Japan, India’s largest donor, cut off all new assistance and put a freeze on high level contacts. The G-8 industrialized nations joined the United States in blocking multilateral lending to India. China reacted with venom against India’s identification of Beijing as the principal factor in its decision to test. The diplomatically active Anglo-Saxon nations, Australia and Canada led the charge against “a deviant India” in various multilateral forums.

Yet in the wake of its nuclear tests, India understood that it has to work hard to limit the political damage from Pokhran-II and find a basis to revive relations with the major powers. After it completed the series of five tests, India announced that it was ready to consider signing the CTBT, join the negotiations on the Fissile Materials Cut-off Treaty that limits the production of material for nuclear weapons, and reasserted its commitment to prevent the spread of weapons of mass destruction. Given the fact that Indian had opposed with such vehemence these very same ideas in the recent past, the turn around in New Delhi’s policy was nothing less than dramatic. The focus of India’s diplomacy since then has been a willingness to negotiate adherence to internationally binding obligations such as the CTBT in return for other political and technological gains. From being a “perpetual dissident” against the global nuclear order, India, now having converted herself into a nuclear weapons power, was now eager to deal. Having shed its nuclear ideological virginity, India will never again be the same.

Pakistan’s nuclear policy has been develop in reaction of India’s Pokhran 1 explosion Bhutto reacted strongly to this test and said Pakistan must develop its own “nuclear capability”. Regarding
the program he said; “We will defend our country using any means necessary and build a nuclear capability second to none. We will eat grass for 1000 years, if we have to, but we will get there.”

In fact, Pakistan’s emphasis on opacity and its rejection of a no-first use doctrine reflects its concerns about conventional inferiority vis-à-vis India. Nuclear opacity and nuclear weapons capability are regarded as means of deterring conventional war. Senior officials have implied that Pakistan could resort to nuclear use in the event of an Indian attack, conventional or nuclear, on its territory. However, Pakistan refuses to officially define its nuclear threshold even as it rejects nuclear first use. While a nuclear no first use policy was a luxury for Pakistan, a participant pointed out India would likely reverse its no-first use posture during a military conflict. In any case India has already revised that policy to cover other unconventional attacks by weapons of mass destruction on Indian troops within or outside Indian territory.

Pakistan’s nuclear program is based primarily on highly enriched uranium (HEU), which is produced at the A.Q. Khan Research Laboratory at Kahuta, a gas centrifuge uranium enrichment facility. The Kahuta facility has been in use since the early 1980s. By the early 1990s, Kahuta had an estimated 3,000 centrifuges in operation, and Pakistan continued its pursuit expanded uranium enrichment capabilities.

Bhutto had been concerned with India’s pursuit of the “nuclear option” for several years, and this was the first opportunity he had to put his declaration of 1965 into effect. A key motivation for this program was concern over India’s well known progress toward having its own nuclear option, and the public declarations by key leaders in India that they must acquire nuclear arms. Years later, after India’s 1974 nuclear test, when Pakistan’s nuclear program became public knowledge persistent attempts were made to paint the weapons program as a response to the test. It was a response to India’s developing nuclear challenge, but not to the Pokhran test per se. To the extent that it was a response to a specific event, it was a response to India’s conventional arms superiority as manifested in its victory during the Bangladesh War.
The Bangladesh War also helped create a relationship between Pakistan and the Democratic People’s Republic of Korea (DPRK) or “North Korea” which would later help Pakistan considerably in acquiring delivery systems for its nuclear arsenal in the 90s.

During mid-1971 Bhutto approached North Korea in an effort to obtain critically needed weapons.

There was a widespread recognition that nuclear were Pakistan’s only viable deterrence against an Indian conventional onslaught. Some strategists even urged the recapture of Kashmir under a nuclear umbrella. Zia became committed to the nuclear option as a last resort instrument to save Pakistan “with whole world against him,” an argument made by Agha Shahi, then the Foreign Minister.

Moreover, Zia saw in the acquisition of nuclear weapons a key instrument to break Pakistan’s isolation and transform it into the leader of the rejuvenating Muslim World. In July 1978 he outlined his perception: “China, India, the USSR, and Israel in the Middle East posses the atomic arm. No Muslim country has any. If Pakistan had such a weapons, it would reinforce the power of the Muslim World.”

Pakistan had nuclear weapons potential in 1987, and operational nuclear weapons since 1988. At first, Pakistan stuck with Zia’s doctrine of relying on nuclear weapons as the last resort key to Pakistan’s survival against India and the USSR. However, at the same time, Zia-ul-Haq’s pan-Islamic world view was expressed in the willingness to facilitate and expedite other Islamic, primarily Iran’s, nuclear weapons program, but not at the expense of, or as part of, Pakistan’s own strategic weapons programs. It was through its close cooperation with Iran, that Pakistan also assisted other radical states including Libya and North Korea.

Despite their best efforts the supporters of the concept of nuclear deterrence cannot prove that nuclear weapons preserved the peace in Europe or elsewhere in the world. What can be claimed though is that they played a supporting role in
preserving the peace. Nor can supporters of deterrence prove that the many crises during the Cold War were resolved or contained primarily by the threat of nuclear war. The history of the Cold War is replete with compelling evidence of the pernicious effects of the open-ended quest for nuclear deterrence, as shown by Professors Janice Stein and Richard Ned Lebow in a study entitled We All Lost the Cold War.

In today’s post-Cold War World, defining national security merely, or primarily, in military terms conveys a false sense of reality. Nearly half a century of Cold War fashioned the issue of security into powerful conventional simplifications that are no longer valid. Unfortunately, many of these traditional and outmoded concepts retain great currency amongst certain security analysts and defense planners, and the dominance of military and strategic considerations in the conduct of international relations endures as a legacy of the Cold War. While stability was and continues correctly to be of prime strategic importance in a transforming world its pursuit by some influential countries places exaggerated emphasis upon nuclear weapons and military concepts that are presumed still to lie at its core.

In a post-Cold War world, the political value of nuclear weapons has declined markedly rendering them, more a liability than an asset. Despite the changed political climate and the window of opportunity to restructure international relations away from reliance on nuclear weapons, many influential thinkers and military planners in the United States, NATO, the Russian Federation and in some other countries still believe in the integrity of nuclear deterrence—i.e. that stability and security would necessarily be jeopardized in the absence of nuclear deterrence. Such deeply embedded beliefs are extraordinary resistant to new thinking or to change. They also reflect the reluctance of national security planners in the NWS to conceive of a security architecture that does not rely on nuclear arms.

Nuclear weapons are held by a handful of states which insist that these weapons provide unique security benefits, and yet reserve uniquely to themselves the right to own them. This situation is highly discriminatory and thus unstable, it cannot be sustained. The possession of nuclear weapons by some states
is a constant stimulus to other states to acquire them... a central reality is that nuclear weapons diminish the security of all states.

The WMD proliferation problem will not be solved by short-term solutions. What is obvious is the need for a re-orientation of the technological determinants of our industrialized global culture. The civil-military ambivalence of many advanced research and development program needs to be addressed, and proposals for radically new research policies outlined which will safeguard against the commercial exploitation of weapons relevant technologies.

It seems this would only be workable if the current security paradigm of the western hemisphere was changed and deterrence replaced by cooperation. Only then is a long-term solution imaginable. Bearing in mind the political arena, with its many different players, their various ambitions, and the ongoing struggle for western domination.
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Certificate

This is to certify that **MS. HINA MIRZA** has pursued research for Ph.D. Degree on the topic entitled, "**USA and South Asia: The Issue of Nuclear Proliferation**" under my supervision and guidance.

Her research work is original and in my opinion suitable for the submission for the award of the Ph.D. Degree of the Department of Political Science, Aligarh Muslim University, Aligarh

(T.A. NIZAMI)
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HINA MIRZA
The greatest evil of scientific discoveries in the mid-twentieth century is the success of American scientists, engaged in the Manhattan project. Infact it was a German initiative. But the German talent was transferred to America due to Hitler’s anti Jewish policies and succeeded America in manufacturing the first ever nuclear device. Other European countries and Russia and China also joined the armament race. USSR got the second position in the race as she had detonated its first nuclear device in 1949. After that, Britain had tested its nuclear device in 1952, France in 1960, and China in 1964 test fired their first nuclear devices and became party to the nuclear weapons states.

The demonstration of this nuclear weapon of mass destruction was done by the United States on the two cities of Japan in 1945.

Its immense devastating capability was realized by almost all the countries of the world. Therefore, efforts for controlling and eliminating these weapons were started immediately after the Second World War. Throughout the Cold War period, a number of treaties and agreements were signed among the independent nations to reduce, control, restrict and abolish these weapons. But the whole Cold War period witnessed a mad arms race between the two superpowers with Europe being their center of activities.
The collapse of the Soviet Union in the early 1990s marked the end of
the Cold War and the erstwhile bipolar world transformed into a
unipolar world with United States being the only superpower.
The last decade of the 20th century witnessed the nuclear developments
in Asia, especially the South Asia. India and Pakistan detonated their
nuclear devices in 1998 which, to a large extent, has changed the world
scenario.
The second chapter deals with the United State's policy of nuclear
weapons. The major part of U.S. Policy throughout the Cold War
period was dominated by deterrence. Hence, a large amount was spent
on defence expenditure. The decade of 80s and 90s was dominated by
United States Star Wars program, which is often criticized for its
heavy cost, and the S.D.I.
The Third Chapter is a description of India's nuclear policy especially
after the second Pakhran test of 1998, followed by India's Draft
Nuclear Doctrine. The various reasons for adopting this nuclear policy
were placed by India and her commitment to non-escalation and non-
proliferation of these nuclear weapons put India into a category of
responsible nuclear power.
Pakistan's nuclear policy covers the forth chapter. It is more or less a
reaction of India's nuclear policy.
The United State interest in other country's acquisition of arms are
supposed to be related, in one way or the other, as a reaction of
9/11 especially the attack on Iraq.
CHAPTER I

Nuclear Weapons and South Asia
CHAPTER - 1

NUCLEAR WEAPONS AND SOUTH ASIA

On the first Saturday of May and October, the bi-annual open-house day of the Trinity Site National Historic Landmark, thousands of people travel to the New Mexico desert in order to visit the site of the world's first atomic explosion. When they get there, they discovered that there's not much to see. A Scrubby patch of sand and weeds encircled by a chain-link fence, the Trinity Site is distinguished mainly by a stone obelisk and a few shards of the weaponised detonation tower, to some visitors, the obelisk stands in for a moment of national pride, and the end-point of a period of collaborative scientific genius. Others, however come to Trinity to mourn—or protest—the beginning of the atomic era and the arms race.

In the history of modern world the year 1932 was marked as one of the fateful ironies of the brutal 20th century. In Germany, the discoveries in Physics by James Chadwick, John Cockcroft and Ernest Walton, followed by the assumption of the Chancellorship of Germany by Hitler in 1933 and the Nazi persecution of the Jews disturbed the peace of German Universities where a large number of physicists happened to be of Jewish ancestry. In the meantime, French scientist were conducting research on nuclear fission technology, which was delicate to develop nuclear energy. Their research program ended abruptly with Hitler's invasion in 1940. This resulted in the exodus of the scientists. About hundred Physicists found refuge in the United States between 1933-1941 and most of the French scientist fled to
Canada. The US President F. Roosevelt was impressed to see the nuclear power and decided to develop this technology as quick as possible. The United State started its first atomic bomb program in 1942 under the code name “Manhattam Project”. The remaining German scientists were busy in developing Atomic weapons program. This fear of German Atomic bomb became the driving force which eventually ushered the world into the Nuclear Age.

It was Hitler’s anti-Jewish policies that enriched the American scientific community and triggered the massive American effort which enlisted the best scientific talent gathered from all over Europe. The assembled scientist were engaged in a crusade against the odious regime of Hitler and they, therefore, pushed the very boundaries of scientific knowledge outward on a grand scale in the pursuit of a weapon of mass destruction.  

In fact it was the first Atomic bomb that marked the end of the second World War. The differential impact of the second World War on fortunes of the countries involved in the Nuclear enterprise influenced their ranking in the post war world order.

The first Nuclear test conducted by United States under the Manhattan Project at Alamagordo, New Mexico on 16th July 1945, unveiled the gigantic secret from the mysteries of nature to show that if it was used cautiously it could proved to be a blessing for mankind or else it could prove disastrous.

The USA got the lead position with its first nuclear test and proved its superiority to the world, with its first nuclear attack on Hiroshima and Nagasaki on 6th and 9th August 1945.
respectively. USA remained the only super power for four years until the USSR developed a nuclear bomb in 1949. The Soviet nuclear technology was a result of passing-on of crucial data to the Soviet Union, by Klaus Fuches, a German émigré Scientist, living in Britain, who participated in the Manhattan Project as a member of the British team. He even passed on the design of the plutonium bomb tested in the New Mexico desert on July 16, 1945. Thus, the first Soviet nuclear test code-named “First Lightning” was conducted at Semipalatinsk in Kazakhstan on August 29, 1949. The second test in 1951 was based on a Soviet design.

The decision of Britain to develop nuclear weapons supports the realistic explanation of nuclear proliferation. Britain feared the possibility of US isolationism after the Second World War. The British decision to develop nuclear weapons was rooted in the fear of US isolationism in the face of the Soviet threat, and was the legacy of 1940 when Britain alone faced a great threat. There was a concern that America might lapse into a new isolationism from which it might emerge too late to benefit England.

Britain took the decision to produce a bomb in January 1947. Immediately after the World War II, the British Minister of Defense had ruled out any risk of a war for the next five years. Therefore, the British bomb was not viewed as a deterrent against the possible adversary, rather the decision emerged from an image of Britain as an imperial and self-sufficient power which should have the latest and the most powerful weapons.
The first British Atomic device was tested in the Monte Bello Island of Australia on October 3, 1952.7

The French technocrats pushed the nuclear weapons programs along with a minimum political leadership during the Fourth Republic. The Gaullist France adopted a hedging strategy. The uncertainty about the reliability of American nuclear extended deterrence was a factor that impelled France under de Gaulle to adopt a hedging strategy by developing an independent arsenal in the early 1960’s. A similar consideration for other U.S. allies, such as Japan, is a definite possibility in the post-cold-war era. De Gaulle’s suspicion of the United States for the defense of France in the case of a Soviet attack on Western Europe is clear when he said to President Eisenhower in September 1959.

“I, de Gaulle, known that you, Eisenhower, would dare to risk the survival of your country in order to safeguard Europe: You have already proved your devotion. But what of your successors? Will they take the risk of devastating American cities so that Berlin, Brussels and Paris might remain free?”8

Thus France had developed the nuclear device and even on UN General Assembly’s request to not to proceed with a forthcoming test, the French government stood firm in its decision to test the device. The French representative to the UN declared that in the absence of a general agreement on disarmament, France would resist any form of discrimination against her interests and would go ahead with her test program. The first French test was conducted on February 13th 1960, nearly 1000 miles from Algiers.9
The decision to build the Chinese bomb was driven largely by security considerations. Nie Ronngzhen pointed out that from a historical perspective, the possession of the atomic bomb helped China get rid of the heavy legacy of long being humiliated by foreign invasion and “imperialist bullying.” USA did consider using nuclear weapons against China on several occasions during and after the Korean War, the USA even deployed under armed B-29 bombers in Guam in 1951 for possible use against targets in China. The Korean War, events in Indochina, and the Taiwan Straits (Quemoy-Matsu) crises all demonstrated China’s insecurity in the face of US nuclear weapons and bullying. Therefore, China has started its weapon program after the second World War. The Soviet Union assisted China in their nuclear weaponisation through their participation in uranium mining, training Chinese scientists and giving valuable nuclear equipment and machinery. In October 15, 1957, Sino-Soviet New defence Technical Accord was signed by which Chinese request for a prototype of a bomb was made. China exploded its first nuclear device in 1964 at Lop Nor.

The issue of nuclear weapons had been the central feature of the East–West competition during the 1950s. Nuclear deterrence, Arms control and disarmament were the major techniques adopted by the United States to contain Communism and restrain Soviet hegemonic designs through out the early Cold war period. The issue of nuclear proliferation was a slowly developing force below the visible surface of the world politics.
Initially disarmament and arms control were the existing measures for nuclear proliferations. The abolition of existing nuclear weapons is a measure of disarmament and a check on the production of new nuclear weapons is a measure of arms control. Non proliferation is akin to disarmament in one respect and to arms control in another. It refers to:

i) Putting a stop to the nuclear arms race and

ii) Abolition of existing nuclear weapons.

Thus, non-proliferation means stopping the transfer of nuclear weapons by nuclear powers to non-nuclear powers. The term non-dissemination refers to a check on the sharing of nuclear secrets by nuclear powers with non-nuclear powers. In both cases emphasis is on the prevention of the expansion of the nuclear weapons. The expansion or spread of nuclear weapons is possible horizontally as well as vertically.

The horizontal dimension refers to the proliferation of weapons across the world; while vertical proliferation describes the progressive development of weapons of mass destruction. The dangers of horizontal proliferations are obvious these days. There are at least two dozen countries that have access to one of the technologies for enriching uranium, but apart from nuclear weapon states all but three are under safeguards and two are violating them. (Iraq and North Korea). But technical limitation will not safeguard us against the proliferation of biological and chemical weapons. Any country with chemical or biotech industry can develop these. Here, the issue of which of the
countries have pledged no-use and how this commitment is verified is of much greater concern.\textsuperscript{15}

Vertical proliferation was visible during the early 50's when the overkill capacity of the strategic weapon systems of the two super powers steadily increased. After the end of the US nuclear monopoly period, both USA and the Soviet Union were developing the second strike capability by a vigorous nuclear arms race never known in the history of the nations under the pretext of the Cold War rivalries. Then they moved on to the building up of a Mutual Assured Destruction (MAD) capacity in order to maintain the so called “delicate balance of terror”. Finally they succeeded in rationalizing the mad, run away nuclear arms race as an essential requirement of nuclear strategy to maintain the stability of the mutual deterrence. What was visible to all including, of course, the nuclear weapon states, was the uncontrolled vertical proliferation.\textsuperscript{16}

Hence the dangers of vertical proliferation are equally stark. Nuclear disarmament has progressed slowly. The reduction to less than 6,000 nuclear warheads in the US and the states of the former Soviet Union respectively, as prescribed by the START treaties, has been verified bilaterally. Nonetheless, it still allows both the US and Russia an “overkill” capacity many times over. Meanwhile, the concept of nuclear deterrence is not yet dead. Research and development programs for nuclear technologies progress unsupervised in the US, France, UK, Israel, India, Pakistan as well as China: either acknowledged nuclear weapon states or those not party to the NPT.
When it comes to the exporting countries for WMD usable technology, control mechanism, as for the importing countries are in effective. Export restrictions and effective monitoring of compliance, demanded again and again by NGOs, have been reported in the media, most noticeably after the first Gulf war in 1991 when western governments had to face the fact that the main export culprits were based in their countries. Methods to contain vertical proliferation simply lag far behind what is needed. Thus it is only through a two dimensional approach that a true non proliferation can be achieved. There is no end of horizontal proliferation without a stop to the vertical one. Some of the developing countries have repeatedly asked for an end to vertical proliferation in the nuclear weapon states in order to encourage horizontal non-proliferation. The argument from the nuclear powers, of course, is that vertical proliferation is needed to counter the effects of unwanted horizontal proliferation. Once this is effectively stopped, vertical proliferation would follow, they suggest.

Apart from the vertical and horizontal proliferation, a number of new proliferation semantics have developed.

The macro-proliferation refers to the proliferations among the states; micro-proliferation deals with individual terrorist groups terrorizing with nuclear weapons; latent and suppressed proliferation deals with nuclear options and nuclear capabilities which could be used when required; balanced proliferation is reconcile to a situation in which a limited number of countries going nuclear with out causing any imbalance; proliferation chain
deals with a mechanistic automatic action reaction phenomenon.\textsuperscript{19}

Efforts for arms control and disarmaments were made since the beginning of the Cold war. The partial test-ban treaty, concluded in 1963, was the first important step taken on the road to a comprehensive ban. Different approaches have been attempted since that time, among them, unilateral moratoriums, trilateral negotiations, multilateral deliberations, treaty amendments and nuclear-weapon-free zones.\textsuperscript{20}

The treaty on the non-proliferation of nuclear weapons signed on July 1, 1968 remains the bedrock of the post-second World War global non-proliferation regime. With 187 states parties, this Treaty is the most widely adhered to and the most successful multilateral arms control agreement in history. The successful conclusion, in 1968, of negotiations on the NPT was a landmark in the history of non-proliferation. After coming into force in 1970, its indefinite extension. The members states includes all five declared nuclear states i.e. China, France, the Russian Federation, The USA, and UK. To day, only four states remain non-parties; Cuba , India, Israel and Pakistan.\textsuperscript{21}

The NPTs main objectives are to stop the further spread of nuclear weapons, to provide security for non-nuclear weapons states which have given up the nuclear option, to encourage international co-operation in the peaceful uses of nuclear energy, and to pursue negotiations in good faith towards nuclear disarmament leading to the eventual elimination of nuclear weapons.
The NPT remains the only global legally binding instrument committing the NWS to disarm, and its indefinite extension in 1995 strengthened the global nuclear non-proliferation norm. Responding to the most significant challenge to the NPT to date i.e. the India nuclear detonations of May 1998, in contrast to the largely hypocritical statements emanating from the NWS, Canadian Foreign Minister Axworthy stressed that: nuclear non-proliferation regime is based on, and anchored in international law and norms, as well as incorporated into international mechanisms. The NPT is fundamental, but the broader regime is a complex system of multilateral and bilateral agreements, arrangements and mechanisms intended to promote and achieve a world without nuclear weapons, sooner rather than later. This was valid during the Cold War and remains valid today. At the same time, the regime is intended to provide a framework to enable the world to make effective use of nuclear capability for peaceful purposes.22

The International Atomic Energy Agency (IAEA) was set up by unanimous resolution of the United Nations in 1957 to help nation develop nuclear energy for peaceful purposes. Allied to this role is the administration safeguards arrangements. This provide assurance to the international community that individual countries are honoring their treaty commitments to use nuclear materials and facilities exclusively for peaceful purposes.

The IAEA therefore undertakes regular inspections of civil nuclear facilities to verify the accuracy of documentation supplied to it. The agency checks inventories and undertakes sampling and analysis of materials. Safeguards are designed to
deter diversion of nuclear materials by increasing the risk of early detection. They are complemented by controls on the export of sensitive technology from countries such as UK and USA through voluntary bodies such as the Nuclear Suppliers' Group.\textsuperscript{23}

Traditional safeguards are arrangements to account for and control the use of nuclear materials. This verification is a key element in the international system which ensures that uranium in particular is used only for peaceful purposes.

Parties to the NPT agree to accept technical safeguards measures applied by the IAEA. These require that operators of nuclear facilities maintain and declare detailed accounting records of all movements and transactions involving nuclear material. Over 550 facilities and several hundred other locations are subject to regular inspection, and their records and the nuclear material being audited. Inspections by the IAEA are complemented by other measures such as surveillance cameras and instrumentation.

The aim of traditional IAEA safeguards is to deter the diversion of nuclear material from peaceful use by maximizing the risk of early detection. At a broader level they provide assurance to the international community that countries are honoring their treaty commitments to use nuclear materials and facilities exclusively for peaceful purposes. In this way safeguards are a service both to the international community and to individual states, who recognize that it is in their own interest to demonstrate compliance with these commitments.
The inspections act as an alert system providing a warning of the possible diversion of nuclear material from peaceful activities. The system relies on

- **Material Accountability** – tracking all inward and outward transfers and the flow of materials in any nuclear facility. This includes sampling and analysis of nuclear material, on-site inspections, review and verification of operating records.

- **Physical Security** – restricting access to nuclear materials at the site of use.

- **Containment and Surveillance** – use of seals, automatic cameras and other instruments to detect unreported movement or tampering with nuclear materials, as well as spot checks on-site.

All NPT non-weapons states must accept these full-scope safeguards. In the five weapons states plus the non-NPT states (India, Pakistan and Israel), facility-specific safeguards apply. IAEA inspectors regularly visit these facilities to verify completeness and accuracy of records.

The terms of the NPT cannot be enforced by the IAEA itself, nor can nations be forced to sign the treaty. In reality, as shown in Iraq and North Korea, safeguards can be backed up by diplomatic, political and economic measures.

The greatest risk of nuclear weapons proliferation lies with countries which have not joined the NPT and which have significant unsafeguarded nuclear activities. India, Pakistan and
Israel are in this category. While safeguards apply to some of their activities, others remain beyond scrutiny.

A further concern is that countries may develop various sensitive nuclear fuel cycle facilities and research reactors under full safeguards and then subsequently opt out of the NPT. Bilateral agreements such is insisted upon by Australia and Canada for sale of uranium address this by including fallback provisions, but many countries are outside the scope by these agreements. If a nuclear-capable country does leave the NPT it is likely to be reported by IAEA to the UN Security Council, just as if it were in breach of its safeguards agreement. Trade sanctions are then likely.

IAEA safeguards together with bilateral safeguards applied under the NPT can, and do, ensure that uranium supplied by countries such as Australia and Canada does not contribute to nuclear weapons proliferation. In fact the worldwide application of those safeguards and the substantial world trade in uranium for nuclear electricity make the proliferation of nuclear weapons much less likely.

The Additional Protocol, once it is widely in force will provide credible assurance that there are no undeclared nuclear materials or activities in the states concerned. This will be a major step forward in preventing nuclear proliferation.

By mid 2004 a total of 57 countries plus Taiwan had ratified the Additional Protocol. However, of 71 countries with significant nuclear activities, 25 have yet to bring it into force.
In May 1995, NPT parties reaffirmed their commitment to a Fissile Materials Cut-off Treaty to prohibit the production of any further fissile materials for weapons. This aims to complement the Comprehensive Test Ban Treaty agreed in 1996 and to codify commitments made by USA, UK, France and Russia to cease production of weapons materials, as well as putting a similar ban on China. This treaty will also put more pressure on Israel, India and Pakistan to agree to international verification.

Another initiative relates to plutonium (Pu) and spent fuel. For uranium, safeguards take account of its nature: natural, depleted, low-enriched or high-enriched (above 20% U-235) and the corresponding degree of concern regarding proliferation. A similarly differentiated approach is being considered for Pu. Two or three categories are possible: degraded Pu (eg in high-burnup fuel), low-grade Pu (eg separated from spent fuel of normal burnup) and high-grade Pu (eg from weapons or low-burnup fuel). The first two correspond to what is generally known as a reactor-grade Pu, sometimes defined as having more than 19% non-fissile isotopes.

There are also several other treaties and arrangements designed to reduce the risk of civil nuclear power’s contributing to weapons proliferation.

Implementation of IAEA safeguards in the 13 non-nuclear weapons states of the EU is governed by a Verification Agreement between the country concerned, EURATOM and the IAEA. Safeguards activities are carried out jointly by the IAEA and EURATOM. A revision to earlier arrangements, the New
Partnership Approach (NPA), was agreed in April 1992. The NPA enables the IAEA itself to deploy more of its resources in member states where independent regional safeguards systems are not in place.

Shortly after entry into force of the NPT, multilateral consultations on nuclear export controls led to the establishment of two separate mechanisms for dealing with nuclear exports: the Zangger Committee in 1971 and the Nuclear Suppliers Group (NSG) in 1975.

The Zangger Committee, also known as the Non Proliferation Treaty Exporters Committees, was set up to consider how procedures for exports of nuclear material and equipment related to NPT commitments. In August 1974 the committee produced a trigger list of items which would require the application of IAEA safeguards if exported to a non Nuclear Weapons State which was not party to the NPT. The trigger list is regularly updated. The Zangger Committee now has 31 member states.

The NSG, also known as the London Group or London Supplier Group, was set up in 1974 after India exploded its first nuclear device. The main reason for the group's formation was to bring in France, a major nuclear supplier nation which was not then party to the NPT. It included both members and non-members of the Zangger Committee. The group communicated its guidelines, essentially a set of export rules, to the IAEA in 1978. These were to ensure that transfer of nuclear material or equipment would not be diverted to unsafe guard nuclear fuel
cycle or nuclear explosive activities, and formal government assurances to this effect were required from recipients. The guidelines also recognized the need for physical protection measures in the transfer of sensitive facilities, technology and weapons usable materials, and strengthen retransfer provision. The NSG began with seven members—the USA, the former USSR, the UK, France, Germany, Canada and Japan but now include 35 countries. 26

In 1968, the States parties to the Nuclear Non-Proliferation Treaty (NPT), under article VI, undertook to pursue negotiations in good faith on effective measures relating to the cessation of the nuclear-arms race at an early date and to nuclear disarmament. Afterwards, and in many instances, including within the NPT review process, efforts were made to consider a comprehensive test ban as an essential element in the implementation of that article. The single multilateral negotiating body, the CD, has long been involved with the issue of a test ban. The Ad Hoc Group of Scientific Experts on seismic events was established in 1976, and in 1982 and Ad Hoc Working Group on a Nuclear Test Ban was established with a limited mandate. In 1990 and in the following few years discussions touched upon the major issues of a nuclear-test ban in considerable detail.

On 10 August 1993, the Conference took a landmark decision. On that day, the CD gave its Ad Hoc Committee on a Nuclear Test Ban a mandate to “negotiate intensively a universal and multilaterally and effectively verifiable comprehensive nuclear-test-ban treaty, which would contribute effectively to the
prevention of the proliferation of nuclear weapons in all its aspects, to the process of nuclear disarmament and therefore to the enhancement of international peace and security.”

The Ad Hoc Committee began those negotiations in January 1994 and has conducted them with the highest degree of commitment to achieving an agreement as soon as possible.

In the document on “Principles and Objectives of Nuclear Non-Proliferation and Disarmament” adopted in New York in May 1995, 175 States parties to the NPT decided that the completion by the CD of the negotiations on a universal and internationally effectively verifiable CTBT no later than 1996 was a goal whose achievement was important to the full realization and effective implementation of article VI of the NPT Treaty.²

Steady and significant progress has been achieved recently in the negotiations in the CD both on the political and technical levels. The updated “rolling text” forms part of the CD’s report submitted to the fiftieth session of the General Assembly³.

Many difficulties still lie ahead for the Conference on Disarmament to resolve. Without entering into the substance of the negotiations, suffice it to say that some 1,200 brackets will have to be eliminated from the rolling text before the negotiations come to a successful conclusion. To finish the work by a target date in 1996, the CD will have to negotiate with much determination and a great sense of urgency. There seems to be a growing recognition that the Ad hoc Committee might have to adjust its methods of work to match the task at hand.
Events outside the Conference have also contributed to advances in the negotiations. On 20 October 1995, for instance, France, the United Kingdom and the United States announced their respective intentions to sign the relevant protocols to the South Pacific Nuclear Free Zone Treaty—the Treaty of Rarotonga—in the first half of 1996. Protocol 3 of that Treaty is an undertaking not to test any nuclear explosive device anywhere within the South Pacific Nuclear Free Zone. As China and the Russian Federation have already ratified the Protocol the announcement by France, the United Kingdom and the United States of their signature to it would mean that all the nuclear weapon States will have undertaken a commitment not to test in that geographical area. That represents yet another indication of the strong determination of the international community, nuclear and non-nuclear-weapons States alike, to reach agreement on a CTBT in 1996.  

Though the official policy goal of the United Nations is general and complete disarmament, it has never been seriously pursued because such an idea runs into tremendous problems of definition. From its inception commentators have tended to use “arms control” as a synonym for “disarmament” and then judged arms control by the degree of disarmament occurring at any particular time, there are crucial differences in the meaning and approach to the two terms.

Arms control came into being partly in response to the advent of the nuclear “balance of terror” and partly as a response to a perceived failure of the disarmament approach in the years immediately before and after World War II. In 1945, the whole
context about the debate about disarmament had changed when the issue of nuclear weapons came into the picture. Atom bombs had been used and this mass destruction weapon could not be disinvented. Nuclear weapons represented an awesome potential for catastrophe which increased the general desire for disarmament but, at the same time, major new obstacles were placed in the path of effective disarmament. Nuclear-armed states that successfully cheated could now mean literal annihilation for the state or states that were its victims. The first US plan for the elimination of all nuclear weapons was submitted in November 1946, known as the "Baruch Plan" after Bernard Baruch, one of its authors. Under this plan, the USA, who was the only nuclear power in the world, offered to dismantle them and make its civil nuclear knowledge available to all other countries. A new International Atomic Developmental Authority would supervise the weapons disposal and peaceful nuclear energy programs. Though the UN General Assembly adopted the plan on December 31, 1946, it was rejected by the Soviet Union and its allies. As the plan called for the establishment of the monitoring and supervision agency before disarmament began, the Soviets were suspicious of the pro-Western majority of the organization which they felt would enable the Authority to prevent Soviet research into nuclear weapons while US scientists had already acquired the knowledge needed to construct them. When the Soviet Union exploded its first atomic bomb in 1949, the Americans fell prey to a similar lack of confidence in the idea of international control of nuclear weapons and they abandoned the idea completely when the
Soviets tested the H-bomb in 1954. However, the Baruch Plan is important because it represented the first and probably the last chance to achieve a complete ban on nuclear weapons. The two powers, during the 1950s, continued to call for such a ban as also for the total abolition of all weapons of any magnitude and these calls were generally recognized as representing little more than propaganda posturing that were designed for public consumption rather than as a basis for negotiation.

It became clear in the 1950s that complete nuclear disarmament would not be possible as the question of the verification of compliance with a total ban became “the” crucial issue. The French argued publicly that a total ban was impossible as the amount of fissile material in existence had reached the point where no reliable verification system could be produced which would guarantee that none had been hidden. Since total nuclear disarmament would demand total trust of the other side, which did not exist to the level needed in the Cold War, it was an impossible objective to pursue. It was several years before the superpowers could bring themselves to admit that this was indeed the case.

Between 1957 and 1962, the strategic community brought out the differences between what they meant by the arms control approach and the ways it differed from disarmament as understood in the traditional way. According the Schelling and Halperin, “Arms control is essentially a means of supplementing unilateral military strategy thy some kind of collaboration with the countries that are potential enemies. The aims of arms control and the aims of a national military strategy should be
substantially the same. “They also included in arms control any kind of military cooperation between potential enemies with the aim of “reducing the likelihood of war; its scope and violence if it occurs and the political and economic costs of being prepared for it.”

While disarmament was seen as an alternative to military strength, arms control was seen as a complement to it, since both enhance national and international security in different ways. While proponents of disarmament saw the existence of weapons as a cause of arms races and war, arms control was felt to represent a recognition of the continuing utility of military power in the modern world and the new arms controllers believed that there was no simple cause and effect relationship between the possession of weapons and the outbreak of war as armaments were ever present features in the landscape of international politics and they were as much a part of the peacetime as well as the war-time environment.

Some scholars argued that arms control was a generic term, covering any arrangement designed to reduce the likelihood of international military conflict and ranging from unilateral national force improvements at one end of the spectrum to possibilities of universal disarmament at the other.

The crucial distinguishing feature separating arms control from disarmament was that disarmament always involves arms reduction. These reductions could be total, involving the abolition of all arms or of one type of weapon; they could be partial, involving numerical reductions in some or all categories
of weapons; or they could be local, regional or global. In contrast, arms control may involve reductions but need not necessarily do so and in certain circumstances, the arms control approach produces a requirement for more, not fewer, weapons. While the disarmament approach assumes that weapons are a cause of war and to abolish weapons is to abolish wars, the arms control approach believes that wars begin in the minds of people. The objective then becomes the control of those factors which prompt states to go to war.

A key feature in arms control is the acceptance of nuclear deterrence. The arms controllers saw nuclear weapons as an innovation that would make war between the great powers impossible and to abolish nuclear weapons would thus be a retrograde step. Nuclear deterrence was to be the “keystone” of national security, something to be enhanced and refined through measures to make it less accident-prone and to safeguard each side’s retaliatory capability.⁷

Today, the term arms control is often used interchangeably with arms regulations, arms limitation and disarmament. A wide range of measures have come to be included under the rubric of arms control, and according to Jozef Goldblat, it is intended to: (a) freeze, limit, reduce or abolish certain categories of weapons, (b) prevent certain military activities; (c) regulate the deployment of armed forces; (d) proscribe transfers of some militarily important terms; (e) reduce the risk of accidental war; (f) constrain or prohibit the use of certain weapons or methods of war; and (g) build up confidence among states through greater openness in military matters.⁸
Besides the NPT a number of important multilateral arms control and disarmament agreements were signed in the nuclear sphere. They are: the Antarctic Treaty (signed 1959); the treaty banning nuclear weapon tests in the atmosphere, in outer space and under water or the Partial Test Ban Treaty (signed 1963), the treaty on principles governing the activities of states in the exploration and use of outer space, including the moon and other celestial bodies or the Outer Space Treaty (signed 1967); the treaty for the prohibition of nuclear weapons in Latin America and the Caribbean or the Treaty of Tlatelolco (signed 1967; modified 1991 and amended 1992); the treaty on the non-proliferation of nuclear weapons or NPT (signed 1968); the treaty on the prohibition of emplacement of nuclear weapons and other weapons of mass destruction on the seabed and the ocean floor and in the subsoil thereof or the Seabed Treaty (signed 1971); the South Pacific Nuclear Free Zone Treaty or Treaty of Rarotonga (signed 1985); and the Convention on the Physical Protection of Nuclear Material (signed 1980).

Throughout the cold war period, the armament race between the Soviet Union and the United States was controlled by a number of bilateral agreements. The US-Soviet/Russian agreements are: the treaty on the limitation of anti-ballistic missile systems or ABM Treaty (signed 1972); the treaty on the limitation of underground nuclear weapon tests or Threshold Test Ban Treaty/TTBT (signed 1974); the treaty on underground nuclear explosions for peaceful purposes or the Peaceful Nuclear Explosions Treaty/PNET (signed 1976); the treaty on the elimination of intermediate range and shorter-range missiles
or INF Treaty (signed 1987); the treaty on the reduction and limitation of strategic offensive arms or START I Treaty (signed 1991); and the treaty on further reduction and limitation of strategic offensive arms or START II Treaty (signed 1993).

Apart from arms control and disarmament, there is alternative defence (AD), the primary goals of which are to work towards disarmament, war prevention, defensive strength, damage limitation, détente, entente and democracy. According to Bjorn Moller, founder and director of the Global Non-Offensive Defence Network and a proponent of Non-Offensive Defence (NOD), AD is broadly conceived in a dual sense. He says, “Alternatives’ has been defined permissively to include proposals both for drastic transformations and for incremental reforms. Furthermore, the category includes both good and bad, viable and infeasible, offensive and defensive alternatives, albeit with a certain preference for the (presumably) good, feasible, and defensive alternatives. ‘Defense’ has been conceived of to encompass not only military defense and various forms of prophylactic security policies that might, it is hoped, largely eliminate the need for an actual defense. The focus, however, is placed on military alternatives.”

Although AD and security have been debated for ages and attained prominence in the aftermath of the World Wars as well as in periods of high international tension and fear of war, the interest has peaked in the 1990s when many NOD conceptions have now been incorporated into the establishment strategic discourse and many of the goals set by NOD proponents have at least been partly achieved.
SOUTH ASIA:

South Asia comprises all the seven countries who formed the South Asian Association of Regional Cooperation (SAARC), namely, India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan and Myanmar (formerly Burma). Among the South Asian countries, India and Pakistan have joined the nuclear club by conducting their nuclear tests in 1998. China, though a Central Asian country, and an official Nuclear Weapon State, plays an important role as far as the issue of nuclear proliferation in South Asia is concerned. North Korea, a newly emerged nuclear power can not be ignored altogether while discussing the South Asian nuclear proliferation.

In South Asia the issue of nuclear proliferation ahs two connotations

1. Strategic / military and
2. Political

Strategic / military connotation has been placed on number one due to the inherent fear of subjugation among the South Asian countries. After a long struggle and hard won freedom from the colonial rule, none of them can readily offer themselves to be sacrificed by the cold war players. After the liquidation of the Soviet Union and the so called, end of the cold war, the countries of the region felt insecure as they have lost the Soviet umbrella. This again resulted in a crisis of strong ‘balancer’ in the region. These factors made them conscious about their security and self defense which ultimately pushed them to develop in the direction of nuclear know how.
Political connotation is quite complicated, as the United States remained the only super power and trying her best to keep its hold in this region. For reasons of which US policy planners significantly emphasized its increasing interests in the area.

After the 1998 India Pakistan nuclear tests, 9/11 terrorist attack of World Trade center, counted terrorism, foreign trade and investment, and avoiding a fifth India Pakistan war apparently have replaced nuclear non-proliferation at the top of the US foreign policy agenda for South Asia.

The barriers to arms control in 1980s and 1990s was the resentment and defiance that damaged relations among India, Pakistan and the United States. The lack of trust and understanding between India and Pakistan is well known: neither side is willing to initiate a relationship of reciprocated good gestures. The animosity created by differences over the nuclear issue between Washington, India and Pakistan also was destructive. US non proliferation pressure precluded open discussions between India and Pakistan on regional security. Pakistan resented the imposition of the Pressler amendment, which it saw as discriminatory, and India objected as strongly to US pressure for it to join the NPT and curve its space and missile activities. As a result more Indian and Pakistani diplomatic energy went to diverting US pressure then to devising arms control to promote regional security.

The Indian and Pakistani Prime Ministers realizing the delicacy of the strategic stability and arms control in South Asia, just after the 1998 nuclear tests, met in Lahore, Pakistan for greater
understanding and confidence building. But all hopes were dashed just weeks later when the two rivals fought the Kargil war. The September 11, 2001 terrorist attack against New York and Washington and the US campaign against the Al-Qaida terrorist network and the Taliban regime in Afghanistan created even more resentment between India and Pakistan. India’s fear of similar terrorist attack was apparently realized when Indian Parliament was attacked on 13 Dec. 2001 by terrorist who were suspected to belong to two Pakistan based military groups: Lashkar-e Taiba and Jaish-e- Mohammad. Although the Kargil war had heightened tensions, but the conflict remained limited because both sides wished to avoid escalation to a general war, that could lead to the use of nuclear weapons. Therefore, even as Kargil underscored the risks involved in conflict, it also demonstrated that India and Pakistan appreciate the importance of caution and restraint in their strategic competition, which is an essential condition for arms control and deterrence stability. Jeoffery Larsen has summed up the strategic predicament India and Pakistan is facing today, as follows:

1. The rivals continue to have serious conflicts of interests, specially over Kashmir, and a deep mistrust of one another,

2. Each side is prepare to use military force, including nuclear weapons to protect its security interest, but

3. Neither wants war because of political considerations, because of the risk of escalation, and because neither side
have enough of an edge in conventional military forces to win anything of political significance. Because South Asia is prone to all kinds of crises, the risk of conflict will be an indelible feature of India, Pakistan relations, even in a condition of mutual nuclear deterrence.  

In countries like India and Pakistan scholars keep alluding to the U.S. tilts in different directions and keep feeling that the U.S. is or has been turning a blind eye towards other country's nuclear activities. They try to see a pattern in the U.S. policies towards them and others and then react and at times over-react. The confusion is created because of the style and strategic pursued by the U.S to achieve its objective at the particular time and in a specific environment with different kinds of tools available to it. In terms of principles the polices may be turn out to be contradictory. The objectives remains constant, however, until all hope is lost like in case of the Soviet Union when it carried out its first test in 1949 and became a NWS, or when the U.K, France and China donated their first devices and joined the nuclear club. Henceforth it was the flexible approach meant to meet the best of the bargain. It was his adaptability of approach, compliant and amiable at times, and paradoxical, rigid and caustic on others, that bewildered and caused endless confusion regarding US. nuclear policies. That was during the cold war years. In the post-cold war environment also, flexibility of approach has also be maintained while pursuing non-proliferation goals in different regions. As to US. objectives after the end of the cold war, they are as constant as they were and have been clearly defined-broad means to achieve them also
having been stated off and on. But there is a difference. Along with the objective of non-proliferation, the objective of maintaining the status quo-monopoly has acquired an urgency hitherto unknown. While non-proliferation remains the prime objective, the hidden objective of maintaining US. supremacy is the engine that provides the driving force. In order to achieve its objectives, the US. had to operate within certain parameters related to ends it want to achieve and the means it uses to achieve those ends.\(^{32}\)

Though China does not comprise a South-Asian country, but its significance in the politics of South-Asia can not be ignored. Her policy on Weapons of Mass Destruction (WMD) has been, and in many respects remains ambivalent. In1992,China signed The Nuclear Non proliferation Treaty (NPT).It has also showed its willingness to join a comprehensive Test Ban Treaty (CTBT), As well as its support for developing a multilateral convention banning the future production of fissile material for use in nuclear weapons. On the other hand, China continues to conduct underground nuclear test, although it has stated that it will stop the testing once the CTBT enters into force. China did not join the Nuclear Suppliers Group (NSG), and did not bother to meet the guidelines of NSG, while transferring its nuclear technology. China also agreed with the U.S. in 1992 to abide by the norms, guidelines and parameters of Missile Technology Control Regime(MTCR).But the U.S. concern about the Chinese proliferation activities in South-Asia and the Middle East is not meaning less as, export of Chinese missile systems and missile related technology, remained an important element of China’s
foreign military sales. U.S. allegation of transfer of M-11 missile system to Pakistan by China in 1993 resulted in the announcement of imposition of sanction against China for its export of missile related technology to Pakistan controlled under category II of the MTCR. Though the sanction were waived in Oct-1994 after Chinese commitment to abide by the 1987 version of the MTCR Annex, as well as its commitment not to export ballistic-missile system inherently capable of reaching a range of 300 km. with space load of 500 kg, which are the basic MTCR control parameters. China’s inherent capability concept deals only with missile systems and not with missile-related technology, which according to U.S. is more important as it offers the proliferent state the possibility of developing an indigenous missile-production capability. China had also been reported to transfer C-808 ship based cruise missiles to Iran. Although these systems do not violate the basic MTCR parameters, they nevertheless potentially increase Iran’s capability to threaten commercial shipping in the Persian Gulf. President Clinton also accepted the importance of China as well as its relations with USA in his first important policy speech after the reelection, made on his trip to Australia, also reflected the US eagerness to mend fences with China and to improve their commercial ties. Even though both differ on many a vital issue, but both the nations want to continue with the dialogue. USA is concerned with China’s Human Rights records, approach to its ‘renegade’ province Taiwan, proliferation issue etc. China is equally sensitive to US relations and support to Taiwan, IPR and trade matters etc. Since the past few months China has
replaced Japan as the number one surplus trade balance partner of USA. On the other hand the heavy dependent of US commerce and industry on China trade and the large future market potential may be able to bail out Clinton. The US trade circles estimate that 200,000 American jobs are depending on its China trade and there is a huge potential in the Chinese market, specially in sectors like civil aviation, nuclear energy etc.

Apart from the above economic and business interests, US is being compelled to deal with China due to the present day world realities. She is a nuclear power with a credible deterrent and a second strike capability and further also enjoys veto power in the UN Security Council. These objective realities are further compounded with the Chinese state craft: the ancient Middle Kingdom is still, in spite of its Communist credentials, very nationalistic and at times arrogates itself with its self esteem. This gives rise to its basic philosophy of ‘keeping the initiatives in one’s own hands’ and the ability to ‘say no’. The second most sensitive area is the Korean Peninsula, with the increasing economic clout of South Korea and the worsening situation in North Korea, the USA is also worried about the nuclear questions and stability of North Korea itself. This issue is also entangled with the Sino-US relations, and nobody is sure about the leverage enjoyed by China vis-a-vis North Korea.\(^{34}\)

The Post cold War period witnessed the rising drama associated with north Korea’s nuclear weapon program. Under the Bush administration the US government showed its concerns of proliferation with Pakistan, because North Korea was believed to have traded its missile technology for access to
Pakistan’s nuclear secrets and the Ghauri III missile is doubted to be a North Korean design. Until recently, North Korea’s main missile customers were the usual suspects in the Middle East, foes of the West such as Libya which took a fresh delivery in 2001, and Iran, which on May 31, 2001, successfully tested a new small missile called Fateh. That may be a Chinese design but the bigger Shahab –3 which Tehran tested in 2000 whose 1300 km range could reach Israel, is thought to be based on North Korea’s medium-range Taepodong.

North Korea has played a central role in missile proliferation for example, it has sold modified Scud missiles abroad and seeks international sales of its new 1000-1300 km range NoDong 1 missile, which is capable of carrying WMD war heads, and reportedly could be deployed by 1996. As the former director of the CIA, R. James Woolsey, has remarked North Korea “is willing to sell to any country with the cash to pay.” North Korea may already have concluded agreements to provide the NoDong 1 to Iran and to assist Iran in the construction of a missile production facility. Libya and Syria also have indicated and interest in the No- Dong 1, and Libya is reported already to have conducted an agreement to purchase either the missile, related technologies, or both. If North Korea, Iran and North African countries ultimately possess the No-Gong 1, cities in Japan, France, Italy, Greece and Turkey could be under the potential threat of missiles armed with WMD.

North Korea is in development of two new multi-stage missiles of considerably greater range. According to public accounts by US intelligence officials, these missiles could threatened “all of
the Northeast Asia, Southeast Asia much of the Pacific area and even most of Russia”, if transferred to North Africa and the Middle East, “all the capitals of Europe could be threatened”. North Korea’s new missiles, popularly referred to as the Taepo Dong1 and Taepo Dong2, have been identified in unofficial sources as having ranges of 2000 km and 3500 km to 9600 km respectively, and as becoming operational as early as 1996 and 2000 respectively.

Japan is one of the most scientifically advanced among all the Asian countries. Till, today Japan has refrained herself from going to be nuclear. The obvious reason for which Japan is famous is its nuclear allergy, as she is the only country ever attacked with nuclear weapons. Japan is also famous for its “three no’s policy: not to make, possess allow nuclear weapons on its soil. These attitudes remain a strong brake on Japan going nuclear. Japan’s acquiring of nuclear weapons is supposed to be a departure from its post-war policy of not possessing one. But a nuclear North Korea seems to put pressure on Japan going nuclear itself. In a confrontation with China, China needs five thermonuclear bombs, three on Tokyo and two in the Kausai region (Kobe, Osaka and Kyoto), to end Japan. But five nuclear bombs or even few more, devastating as they may be, would not spell the end for China, Japan, in short, cannot survive a first strike and retaliate. But China can.

Even though Japan is a known ally and a strategic partner of USA, its increasing economic power, influence in the field of trade etc. compelled USA to take a positive but cautious view
towards Japan. In April 1996 USA signed a security pact with Japan mainly aimed at any future military hegemonistic designs of China.

The enhanced US diplomatic interest in Thailand may also be due to the impact of the overall post-cold war scenario. Keeping in view the July 1997 deadline the US has already shifted out all its mechanical intelligence gathering facilities out of Hongkong and relocated elsewhere, most of it in Australia and now may be seeking some more sophisticated facilities near China. Thailand suits most of these requirements. Geographically, Thailand is located at the crossroads of Indo-China and Myanmar. The Myanmar is also another sensitive target of USA which it does not want to be left isolated, as they fear such isolation may end her up as a camp follower of China.

In short the enhanced involvement of USA in the Asia Pacific can be summarized as the ongoing process of the US quest to 'contain' China through 'engagement': but how successful will this strategic be, a question to be answered by the future but the emerging scenarios in the global power game do not favor either very much. On the other hand we have to look for such answers in their own domestic, economic and political scenario.38

Among things long expected but not realized is the entry into force of the Comprehensive Nuclear-Test-Ban Treaty (CTBT); the conclusion of nuclear material cut-off treaty; the ratification of the second Strategic Arms Reduction Treaty between the Russian Federation and the United States (START II) and the
opening of negotiations on START III, the initiation of talks on a multilateral nuclear reduction treaty, and internationally binding instrument on negative security assurances, and the replacement of the UNSCOM verification regime in Iraq with a system backed by the United Nations Security Council.

Recent negative developments include the nuclear tests of India and Pakistan and their increasingly inflexible nuclear posture, American plans to develop national missile defence and depart from the 1972 Anti-Ballistic Missile Treaty to make this possible, plans for a ‘Theatre High Altitude Area Defence’ system which would eventually be deployed in East Asia, the Russian Federation’s increased reliance on nuclear weapons, including tactical weapons, the sustained use of force, without Security Council authorization, against target in Iraq, the use by NATO, also without United Nations sanction, of force to settle a regional conflict in the Former Republic of Yugoslavia, NATO’s new nuclear doctrine and its nuclear sharing policy.

There have been some ephemerally positive events also, of which the consequences are not yet apparent. The South Asian tests have increased world concern about nuclear proliferation but this has not yet led to concrete action and, as we have seen so often, worries tend to evaporate once the direct crisis is over. Concerted moves of governments in Northern and Eastern Asia have raised awareness of the risks of nuclear proliferation and increased interest in regional solutions such as the establishment of nuclear - weapon-free zone—but the same governments threaten the regional balance by their plans to
deploy regional anti-missile defence. There has been progress in the creation of a Central Asian nuclear-weapon-free zone treaty, and in the acceptance of the concept of a single-state weapon-free area, as embodied by Mongolia.\(^{39}\)

The past few years have witnessed a general relaxation of the international situation which made it possible to achieve substantial progress in international arms control and disarmament. Such progress in turn has helped to bring about further relaxation of the international situation. At the moment, the coexistence of two main trends in this regard are visible. One is the main trend against nuclear and missile proliferation and demand for accelerated nuclear disarmament, which gives expression to the general wish of the international community. The other trend is that the nuclear superpowers, while insisting on a strategy of offensive nuclear deterrence, have sped up development of hi-tech conventional weapons. The competition to scale “heights” of military science is also developing swiftly. The latter trend is to a certain extent hindering the former, confronting international arms control and disarmament with contradictions and conflicting interests, and making the struggle ever more complex.

Some changes have occurred in international arms control and disarmament since the end of the Cold War.

Firstly, the West is now pursuing different objectives. The priority in international arms control and disarmament has shifted from the prevention of a major nuclear war to forestalling proliferation of weapons of mass destruction (WMD), especially the
proliferation of nuclear, missile and other hi-tech conventional weapons to Third World countries.

During the Cold War period, the US and the Soviet Union were rivals. The emphasis in arms control was pursuit of military stability, i.e. stability through crisis management and stability in arms race, so as to prevent a nuclear conflagration. Today, the possibility of such a major nuclear war is practically nil. Under these circumstances, the Western nations, with the US at their head, see threats to their security coming mainly from the employment of nuclear, bio-chemical weapons by “irresponsible” Third World countries and terrorists. Consequently, the West has shifted its attention to preventing proliferation of weapons, deeming the prevention of emergence of new nuclear weapon state as the number one issue in world security after the Cold War. The US gives priority to prevention of nuclear proliferation in its security and foreign policy. For that reason, the US has designed a strategy against proliferation and works jointly with its allies to prevent the nuclear arsenals of the former Soviet Union from proliferation or running out of control. The US has also strengthened international nuclear non-proliferation mechanisms, emphasizes transparency in military armament, enhances the functions of supervision and verification of the International Atomic Energy Agency (IAEA), controls the export of sensitive technology and steps up intelligence surveillance vis-à-vis Third World countries in an effort to contain nuclear and missile proliferation. The US attempts to prevent proliferation of WMD by the following measures.

1. Conclusion of treaties, conventions and agreements.
2. Insistence on an effective strategic nuclear deterrence to maintain nuclear superiority.

3. Research and deployment of anti-ballistic missile (ABM) defence systems (including America’s home and theatre missile defence (TMD) systems.

Secondly, changes in pattern. International arms control and disarmament have turned from East-West confrontation to South-North contradiction. East-West confrontation in the original sense of the word no longer existed when US-Soviet rivalry came to an end while there was an increase in South-North contradiction. After “COCOM” is dissolved, a new institution has been formed with the purpose of controlling transfers of hi-tech conventional weapons and dual-purpose technology for military and civilian use. This is for all practical purposes and intentions a coordinating institution of Western countries in their joint efforts to prevent proliferation of high-technology and advanced equipment to the Third World.

Thirdly, the United Nations is playing more prominent role in advancing international arms control and disarmament. The intra-UN negotiations over the Convention on the Prohibition of Chemical Weapons (CWC) and the Comprehensive Test Ban Treaty (CTBT) have been a success and the two instruments are open for signature. In 1997, international arms control and disarmament have reached a new crossroads. At the moment, the different parties have yet to reach a consensus as to what should be the next goal of arms control. Western nations led by the US continue to
underline their policy on prevention proliferation of WMD, missile and hi-tech conventional weapons and accelerating development and deployment of anti-ballistic missile defence systems. The developing countries are most concerned with further promotion of nuclear disarmament and they demand that the nuclear states formulae a program on “nuclear disarmament within a specified time.” The General Assembly of the United Nations (UNGA) passed a resolution in 1996 urging that the 4th special session of the UNGA on disarmament be convened in 1997. Time is still needed to reach agreement on a new arms control agenda. Such military powers as the United States which seek military superiority by means of arms control have created difficulties and problems in international arms control and disarmament. In short, the outstanding problems are a follows: 

The coexistence of arms control and arms development poses new challenges in international arms control and disarmament. The US and Russia, among other countries have always deemed arms control and disarmament to be a crucial component of the national security strategy. For the sake further accommodation with the transformation from major war mechanisms to minor war mechanisms, they have indeed begun a drastic reduction of redundant nuclear and conventional weapons. These countries however, did not reduce truly sophisticated weapons and armaments and progress in disarmament did not stop them from engaging in a hi-tech arms race on a still higher plane. The current new arms race is manifested in the following:
Continued implementation of the modification of strategic nuclear weapons. American technology of nuclear warheads is almost perfect. Following the comprehensive ban on nuclear testing, the US consequently continues to strengthen its strategic nuclear force focusing on improving launch vehicles and means of command, control, communication and information (C31) that nuclear warfare calls for. Its "triad" launch vehicles for strategic nuclear force will be overhauled in a bid to raise the accuracy, viability and striking capabilities against hard urgets of nuclear weapons systems to unprecedented levels and achieve breakthroughs in C31. Russia continues to emphasize better striking power, targeting accuracy and mobility and the strengthening of its submarine-based nuclear force. Britain and France are likewise committed to upgrading and augmenting their strategic submarine-based nuclear force.

A greater impetus to development of hi-tech conventional weapons and equipment, focusing on strengthening the naval and air forces: Nuclear disarmament stimulates the development of conventional hi-tech and new-tech weapons and arms and such a new trend has gained greater prominence this year. More and more nations have come to realize that future warfare will take the form of information war in the shadow of nuclear deterrence. Conventional hi-tech weapons, involving less risk and of greater value in martial practice, might well be the key in determining the outcome of future warfare. The US, Britain and France and other countries have all tilted towards hi-tech, high-performance conventional weapons in their defence expenditure. The US has formulated a military build-up program
for the 21st century and set the objectives of organizing “digitalized” armed forces and battlefields. The US believes that the core of information war lies in gaining the upper hand in the abilities to obtain, process and utilize information. For that matter, the US has defined 27 key technology areas to ensure its military preeminence. France, Germany, Britain, and other West European countries have decided to increase investment in defence-related science and technology and jointly develop selected projects which will play a key role in future warfare. France and Germany, for instance, are pooling their resources to conduct research and development of a new generation of military satellites. Japan has also decided to establish a compact hi-tech military force. Some developing nations also scramble to purchase AWACS aircraft, air tankers, reconnaissance satellites, anti-missile destroyers, anti-ballistic missile and other advanced arms and equipments.

A salient feature of hi-tech military building is emphasis on air and naval forces. Be it nuclear or conventional disarmament, the emphasis has been on land forces, with little reduction of air or naval forces which, on the contrary, are growing evidently. The US and Russia and both equipping there are and naval forces that are way ahead of other countries with new type submarines, giant battleships and various more advanced aircraft. The fourth-generation strategic bomber will come into being shortly. For a variety of reasons, the many littoral states have also given priority to building up their naval and air forces. Japan has started working on a new missile destroyer and is preparing for the construction of aircraft carriers and submarines. India has
also laid down plans to import missile destroyers and Mirge-2000 fighter jets. This symbiosis of quantitative reduction with qualitative improvement has posed new obstacles and challenges to international disarmament and arms control. Efforts by the US to accelerate the development of anti-missile defence systems will have a direct impact on disarmament and spark off a fresh round of nuclear arms race. Contrary to the trend of disarmament and caution about proliferation, the US is quietly developing anti-missile defence systems and working on a new generation of anti-missile weapons capable of downing ballistic missiles. The US has emphasized time and again that the greatest threat it faces in the post-Cold War era is proliferation of nuclear, biological and chemical weapons and their delivery vehicles. After several years of debates, if formally decided in 1996 to develop and deploy multi-faceted anti-missile defence systems, mainly by these means: 1) Negotiation with Russia so as to modify the Anti-Ballistic Missile Treaty (ABM), signed between the US and the USSR in 1972, because that treaty is an obstacle to the development of anti-missile defence systems. 2) Phased deployment. The US Department of Defence has decided to deploy defence systems against short-range and medium-range missiles in the first place and suspend temporarily the deployment of higher level and nation-wide anti-missile defence systems. The US is most worried about the prospect of so-called “rogue states” attacking its overseas targets with short-range and medium-range missiles. The Pentagon has decided to complete the deployment of anti-short-range-missile defence systems by the end of the century. 3)
increased appropriations. The US Congress endorsed an increased appropriation of US$450 million in 1996 for the development of short-range-missile defence systems and manufacture of new types of PARTIOT PAC-3 missiles. The Pentagon estimates that a minimum of US$14 billion would be required to establish a nation-wide anti-missile defence system.

4) Working hand in hand with allies to enhance its theatre anti-missile defence capabilities by drawing on their capital and technology. Besides, 10 countries and regions including Israel, Turkey, Saudi-Arabia, the Netherlands and Taiwan are installing or purchasing American anti-missile defence systems. The US argues for stronger international anti-proliferation mechanisms on the one hand. On the other, it heavily proliferates various advanced weapons including anti-missile weapons. 42

Issues relating to treaty implementation. Since the early 1990s, about a dozen disarmament and arms control treaties has been reached, taken effect or about to be signed soon between the US and Russia and also internationally on a multilateral basis. Treaty implementation will become a major issue confronting the international arms control and disarmament process. Judging from the developments of 1996, the following major issues, at least, will be encountered in treaty implementation.

Since American ratification of the START II treaty in January 1996, divergences on the issues within the Russian Duma have become more acute. Albeit President Boris Yeltsin specifically ordered that the treaty be ratified in the first half of 1996, no definite date of ratification is within sight as of the moment. Many opponents of the treaty within the Russian military and political
circles criticize the treaty as being unequal, by which Washington attempts to fundamentally weaken Russia. They demand that the ratification of the treaty be linked to NATO’s eastern expansion and America’s development of anti-missile defence systems and have proposed amendments to certain articles of the treaty.

While effecting disarmament, the developed nations have sold huge quantities of arms and equipment and have added to instability of the regional military situation. Over the years, the US has been the No.1 arms dealer in the world. In 1995, the US exported US$22 billion worth of arms, accounting for 57 percent of the world’s total arms sale. Britain and France, inter alia, feverishly tried to catch up and competed fiercely for a share of the arms market. The dumping of weapons worldwide by developed counties is a hazard to the international community.43

Up to the late 1980s it was generally assumed that any undeclared nuclear activities would have to be based on the diversion of nuclear material from safeguards. States acknowledged the possibility of nuclear activities entirely separate from those covered by safeguards, but it was assumed they would be detected by national intelligence activities. There was no particular effort requiring the IAEA to attempt to detect them.

However, inspections in Iraq following the UN Gulf War cease-fire resolution showed the extent of Iraq’s clandestine nuclear weapons program, it became clear that the IAEA would have to broaden the scope of its activities. Iraq was an NPT Party, and
had thus agreed to place all its nuclear material under IAEA safeguards. But the inspections revealed that it had been pursuing an extensive clandestine uranium enrichment program, as well as a nuclear weapons design program.

The main thrust of Iraq’s uranium enrichment program was the development of technology for electromagnetic isotope separation (EMIS) of indigenous uranium. The process used by regarding threading as used in the Manhattan Project to make the highly enriched uranium used in the Hiroshima bomb, but was abandoned soon afterwards. 44

The DPRK acceded to the NPT in 1985 as a condition for the supply of a nuclear power station by the then USSR. However, it delayed concluding its NPT Safeguards Agreement with the IAEA, a process which should take only 18 months until April 1992.

During that period, in late 1985, it brought into operation a small gas-cooled, graphic-moderated, natural uranium (metal) fueled “Experimental Power Reactor” of about 25 MWt Yongbyon. It exhibited all the features of a plutonium production reactor for weapons purposes and produced only about 5 MWe. North Korea also made substantial progress in the construction of two larger reactors designed on the same principles, a prototype of about 200 MWt (50 MWe) at Yongbyon, and a full-scale version of about 800 MWt (200 MWe) at Taechon.

In addition it completed and commissioned a reprocessing plant for the extraction of plutonium from spent reactor fuel. That plutonium, if the fuel was only irradiated to very low burn-up,
would have been in a form very suitable for weapons. Although all these facilities at Yongbyon were to be under safeguards, there was always the risk that at some stage, the DPRK would withdraw from the NPT on some pretext and use the plutonium for weapons.

One of the first steps in applying NPT safeguards is for the IAEA to verify that initial stocks of uranium and plutonium to ensure that all the nuclear material in the country have been declared for safeguards purpose. While undertaking this work in 1992, IAEA inspectors found discrepancies which indicated that the reprocessing plant had been used more often then the DPRK had declared. This suggested that the DPRK could have weapons-grade plutonium which it had not declared to the IAEA. Information passed to the IAEA by a Member State (as required under the IAEA’s Status) supported that suggestion by indicating that the DPRK had two undeclared waste or other storage sites.

In February, 1993 the IAEA called on the DPRK to allow special inspections of the two sites so that the initial stocks of nuclear material could be verified. The DPRK refused, and on 12 March announced its intention to withdraw from the NPT (three months notice is required). In April 1993 the IAEA Board concluded that the DPRK was in non-compliance with its safeguards obligations and reported the matter to the UN Security Council. In June 1993 the DPRK announced that it had “suspended” its withdrawal from the NPT, but subsequently claimed a “special status” with respect to its safeguards obligations. This was rejected by IAEA.
Once the DPRK’s non-compliance had been reported to the UN Security Council, the essential part of the IAEA’s mission had been completed. Inspections in the DPRK continued, although inspectors were increasingly hampered in what they were permitted to do by the DPRK’s claim of a “special status”. However, some 8,000 corroding fuel rods associated with the experimental reactor remained under close surveillance.

Following bilateral negotiations between DPRK and the USA and the conclusion of the agreed framework in October 1994, the IAEA has been given additional responsibilities. The agreement requires a freeze on the operation and construction of the DPRK’s plutonium production reactors and their related facilities, and the IAEA is responsible for monitoring the freeze until the facilities are eventually dismantled. The DPRK remained uncooperative with the IAEA verification work and did not comply with its safeguards agreement.

Ultimately, the DPRK was persuaded to stop what appeared to be its nuclear weapons program in exchange, under the agreed framework, for about $US5 billion in energy-related assistance. This included two 1000 MWe light water nuclear power reactors. There was also the prospect of diplomatic and economic relations with the USA.

In August 2002, with the project running several years behind schedule due to North Korea’s continued lack of cooperation with the IAEA in verifying the history of its nuclear program, first concrete for the two-unit nuclear power plant was poured at Kumho, on the northeast coast. This formal start of construction
was a milestone for KEDO, which planned to deliver the main components in 2005. The work would then stop unless North Korea was fully compliant with IAEA requirements regarding verification of past activities (specifically, that all nuclear material held by North Korea has been declared and placed under safeguards).46

However, in October 2002 it emerged that DPRK had been working clandestinely to enrich uranium for weapons use, using centrifuge equipment. These appeared to be some linkage to Pakistan’s centrifuge program and in 2005 Pakistan confirmed that it had supplied centrifuges to DPRK.

In December 2002 DPRK removed the IAEA seals on its facilities at Yongbyon and ordered the IAEA inspectors out of the country. It has since restarted its small reactor and claims to have reprocessed the 8000 irradiated fuel rods to recover weapon-grade plutonium. In April 2003 it withdrew from the NPT- the first country to do so.

Since 2003 negotiations have been intermittently under way to secure some agreement on curtailing North Korea’s nuclear weapons program. These have involved China, South Korea and the USA, which has insisted upon “Complete, verifiable, and irreversible dismantling of North Korea’s weapons programs” through “diplomatic dialogue in a multilateral framework involving those states with the most direct stakes in the outcome.”

Iran attracted world attention in 2002 when previously undeclared nuclear facilities became the subject of IAEA inquiry.
On investigation, the IAEA found inconsistencies in Iran’s declarations to the Agency and raised questions as to whether Iran was in violation of its safeguards agreement, as a signatory of the NPT.

Iran joined the NPT in 1974 and in 1975-76 construction started on two 1293 MWe nuclear reactors comprising the Bushehr power station on the Persian Gulf. Siemens KWU was the contractor. After the Islamic revolution, payment was withheld and work was abandoned early in 1979 with unit I substantially complete.

In 1994 Russia was brought in to complete unit 1 as a VVER-1000 reactor. This necessitated major changes, including fabrication of all the reactor components in Russia under a construction contractor with Atomstroy export. The reactor is due to start up in 2007.

All fuel for the life of the reactor will be supplied from Russia, and it is intended that used fuel will be returned there, obviating the need for any fuel cycle facilities in Iran. All work has been under IAEA safeguards and operation will also be under safeguards. The Atomic Energy Organization of Iran has announced that construction of unit 2 is to proceed and that feasibility studies for a further 5000 MWe have been ordered.

The momentum in disarmament and arms control will continue to be maintained in spite of problems and challenges. But at the same time we note that the existing international anti-proliferation mechanisms cannot had nuclear proliferation altogether. A number of treaties and accords have been
concluded in recent years to curb nuclear proliferation. Such treaties and accords have their positive side but not entirely satisfactory with regard to certain articles because of its failure to give full expression to the just demands and reasonable positions of many developing countries including China. Some articles are clearly discriminatory. Moreover, these treaties and accords have failed to mention the conclusion of legal documentation on the non-first-use of nuclear weapons and so use or threaten to use nuclear weapons against non-nuclear states and nuclear-free zones. No mention is made either of the need to concluded a convention on the comprehensive prohibition of nuclear weapons. Hence, it will be a protracted and arduous task to attain the lofty goal of comprehensive prohibition and through destruction of nuclear weapons.
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CHAPTER - II

A Critical Analysis of U.S. Policy Towards Nuclearization
A Critical Analysis of U.S. Policy Towards Nuclearization

"The Atom bomb is too dangerous to be loose in a lawless world............ We must constitute ourselves trustee of this force.............It is an awful responsibility which has come to us instead of our enemies and we pray that He may guide us to use it in His way for His purpose."¹

Harry Truman

These words of President Truman show, how willingly the US is accepting the responsibility to save the world from nuclear annihilation. And, of course, it must be. Because US is responsible for manufacturing and using these weapons for the first time in the history of the world. On watching the first ever nuclear test conducted by the United States at New Mexico, Robert Oppenheimer along with other Manhattan scientists shouted, “We all are sons of the bitches now”.²

Since then, this American scientist lobbied to play a central role in mitigating what he saw as impending crisis. Bird and Sherwin in their American Prometheus made Oppenheimer responsible for drafting a report for the UN commission—The Acheson-Lilienthal report—that promoted

Scientific transparency and cooperative disarmament. According to Bird and Sherwin the report was “a singular model for rationality in the nuclear age”, also reflected a keen awareness
that the budding conflict with the Soviet Union could best be defused by pledging to rid the US of atomic weapons as a means of stopping the Soviet weapons program. \(^3\)

In January 1946, existence of even a few Atomic bombs so alarmed the United Nations General Assembly that it ordered the Atomic Energy Commission (AEC), which it had just established, to "make specific proposals", for the elimination from national armaments of Atomic weapons and of all other major weapons adaptable to mass destruction. \(^4\)

In June 1946 the United States representative to the AEC, Bernard Baruch, presented an American plan on nuclear weapons to the commission. "We are here to make a choice between the quick and the dead. Science has torn from nature a secret so vast in its potentialities that our minds cover from the terror it creates. Yet terror is not enough to inhibit the use of the Atomic bomb. We must provide the mechanism to assure that atomic energy is used for peaceful purposes and preclude its use in war.\(^5\)

The Baruch plan proposed the creation of an International Atomic and Development Authority that would be entrusted with all phases of the development and use of Atomic energy. Baruch urged that this authority alone possess the knowledge and control of all atomic energy activities "Potentially dangerous to world security," And the power to control, inspect, and license all other atomic activities. Once this regime was in place he said the United states "then the sole producer" would stop the
manufacture of atomic bomb, and all existing bombs in the American arsenal would be eliminated.

Cold War suspicions and ambitions stalled any action on the proposal, but its concerns and proposed solution reappeared in modified form in later plans. By the time President Eisenhower stepped up to the UN podium on December 8, 1953, the United States had conducted 42 tests explosion and had developed Hydrogen bombs with an explosive power in the range of millions to tons of TNT (Compare to the 12000 to 20000 tons of TNT the bomb dropped on Hiroshima equaled).

The dangers of this vertical proliferation or growth in one state’s nuclear arsenal, were matched by the dangers of horizontal proliferation. Once the Soviet Union and Great Britain acquired their own nuclear weapons. This meant, two things Eisenhower feared. “First, the knowledge now possessed by several nations will eventually be shared by others-possibly all others. Second, even a vast superiority in numbers of weapons...is no prevention, of itself, against the fearful material damage and toll of human lives that would be inflicted by surprise aggression”. Nations naturally had begun building warning and defensive systems against nuclear air attacks. But, he warned, “Let no one think that the expenditure of vast sums for weapons and systems of defense can guarantee absolute safety for the cities and citizens of any nation. The awful arithmetic of the atomic bomb does not permit of any such easy solution”.

As part of his solution, Eisenhower proposed the creation of International Atomic Energy Agency (IAEA), which would
promote the peaceful uses of atomic energy while the world’s nuclear powers "began to diminish the potential destructive power of the world’s atomic stockpiles".

By the time the IAEA became open for membership in 1956, the disarmament components of the original vision were gone. The agency retained dual-some would say contradictory objectives. The IAEA was directed to "accelerate and enlarge the contribution of atomic energy to peace", and to ensure that its assistance "is not used in such a way to further any military purpose."

John Kennedy tried to revive efforts to eliminate nuclear weapons. On September 25, 1961, he presented to the UN a "Program for General and Complete Disarmament", "The weapons of war must be abolished", he said, "before they abolish us". His ambitious plan included all the elements that negotiators still pursue today: a comprehensive nuclear test ban; a ban on the production of fissionable materials for use in weapons (plutonium and highly enriched uranium); the placement of all weapons materials under international safeguards; a ban on the transfer of nuclear weapons, their materials or their technology; and deep reductions in existing nuclear weapons and their delivery vehicles, with the goal of eventually eliminating them.\(^7\)

Kennedy undoubtedly recognized the practical national and international political obstacles to such a plan. Nevertheless, the President presented a vision-part propaganda-of the world he and his country sought. "The mere existence of modern
weapons-10 million times more powerful than anything the world has ever seen and only minutes away from any target on earth is a source of horror and discord and distrust”, he said “Men may no longer pretend that the quest for disarmament is a sign of weakness, for in a spiraling arms race a nation’s security may well be shrinking even as its arms increase”.

In 1961, Kennedy established the Arms Control and Disarmament Agency (ACDA) to coordinate the government’s pursuit of these goals. One of the agency’s first tasks was to begin negotiations between the United States and the Soviet Union on a treaty to stop the spread of nuclear weapons. According to George Bunn, the first ACDA general counsel and a principal member of the NPT negotiating team, “The basic purpose of the NPT was to provide another choice-to establish a common nonproliferation norm that would assure cooperating nuclear weapon ‘have-not’ countries that if they did not acquire nuclear weapons, their neighbors and rivals would not do so either.”

There was much confusion in the early years of the cold wars, about what constituted “Mutual Deterrence”. Some confused it with the possession of nuclear capability by both sides. Others believed it arose when both sides had roughly the same number of nuclear weapons. However, strategists were quick to point out that there is a big difference between a balance of terror in which each side has the capacity to obliterate the other, and one in which both sides have that capacity, no matter who strikes first. In other words, it is not the ‘balance’ of an arms race that constitutes mutual deterrence; it is the stability of the balance. A
stable balance only exists when neither side is striking first can
destroy the other’s ability to strike back merely equaling or
matching the weapon system of the enemy misconstrues the
nature of the problem. To deter an attack means being able to
strike back in spite of it. It means being able to strike second
with ‘assured destruction’ capability.

But even this is not quite true. Deterrence does not mean that
both sides must have efficient retaliatory system, it only means
that each side must think the other had. This is so because
deterrence is primarily a psychological phenomenon. If both
sides have invulnerable deterrence forces, but neither side
believes that the other has, then the situation, is one of extreme
instability, because each side will believe it could launch a
successful attack. And if neither side has deterrence capacity,
but both sides believe that the other side has it, then the
situation is one of mutual deterrence even if all the objective
requirements are missing. In other words, whether or not a
situation of mutual deterrence exists depends on the state of
mind or the mental image which one side has of the other, and it
is not automatically connected with real-world objective military
capabilities.\(^9\)

Whatever might be the definition or purpose of nuclear
deterrence in the eyes of the analysts, the practical
experience of the US Secretary of State Hennery Kissenger
provides more authentic and reliable conclusion.

In a nuclear age the basic problem of strategy is in establishing
a relationship between a policy of deterrence and a strategy
for fighting a war in case deterrence fails. From the point of view of its impact on the aggressor's actions, maximum deterrence can be equated with the threat of maximum destructiveness. From the point of view of a power's readiness to resist aggression, the optimum strategy is one which is able to achieve its goals at maximum cost.\(^\text{10}\)

The horror and the power of modern weapons tend to paralyze action. Horror will make few issues seem worth contending for, the power causes may dispute to seem irrelevant to the over-all strategic equation. The psychological equations, therefore, will almost inevitably operate against the side which can extricate itself from the situation only by the threat of all-out war. As the power of modern weapons grows, the threat of all-out wars loses its credibility and therefore its political effectiveness. Our (U.S.A's) capacity for massive retaliation did not avert the Korean war, the loss of northern Indochina, the Soviet-Egyptian arms deal, or the Suez crisis.

The power of modern weapons force our statesmanship to cope with the fact that absolute security is no longer possible. Whatever the validity of identifying deterrence with maximum retaliatory power, we will have to sacrifice a measure of destructiveness to gain the possibility of fighting wars that will not amount to national catastrophe. Policy, it has been said, is the science of the relative. The same is true of strategy, and to understand this fact, so foreign of our national experience, is the task history has set our generation.\(^\text{11}\)
During the 1980s and early 1990s the Regan administration developed the Strategic Defense Initiative (SDI) which was an Anti Ballistic Missile System. The concept was to form a defensive shield against the nuclear attack from the Soviet Union. The popular press designated the program as “Star Wars” and was often critical of its extreme cost. The initial focus of the SDI was a nuclear explosion powered X-Ray laser designed at Lawrence Livermore National Laboratory by a young scientist named Peter Haglestein who worked with a team called O Group, doing much of the work in the late seventies and early eighties. O Group was headed by physicist Lowell Wood, a friend of Edward Teller, the “father of the Hydrogen bomb”. In 1983 President Reagan was told of Hagelstein’s breakthrough by Teller, which prompted Reagan’s ‘Star War’ speech on March 8, 1983.

Though the program initially focused on large scale systems designed to defeat a Soviet offensive strike. However, as the threat diminished, the program shifted towards smaller systems designed to defeat limited or accidental launches. By 1987 the SDIO developed a national missile defense concept called the Strategic Defense System Phase-1 Architecture. This concept consisted of ground and space based sensors and weapons, as well as central battle management system. The ground based systems operational today trace their roots back to this concept. In his 1991 State of the Union address George H. W Bush shifted the focus of SDI from defence of North America against large scale strikes to a system focusing on theatre missile
defense called Global Protection Against Limited Strike (GPALS)

In a televised speech of March 23rd 1983, President Reagan asked the American Public for its support of the defence budget he had submitted to Congress. To gain this, he explained the key principle of military strategy in the nuclear age (‘deterrence of aggression through the promise of retaliation’) and highlighted the dramatically increased military power of the Soviet Union. This power, he claimed, undermined the ability of the US to guarantee retaliation and thus to maintain deterrence.

The Soviet Union have enough accurate and powerful nuclear weapons to destroy virtually all of our missiles on the ground.\(^{12}\)

In response to this threat, Reagan called for a continuation of the ‘major modernization program’ of conventional and nuclear forces which he had initiated after taking office in January 1981.

The President framed the main body of his speech with a futuristic vision. At the beginning he promised to reveal, ‘a decision which offers a new hope for our children in the twenty-first century’, and at the end he outlined ‘a mission to counter the awesome Soviet missile threat with measures that are defensive’. He asked:

What if free people could live secure in the knowledge that their security did not rest on the threat of instant US retaliation to deter a Soviet attack, that we could intercept and destroy strategic ballistic missiles before they reached our own soil or that of our allies?
Reagan acknowledged that ‘this is a formidable technical task’, but he was confident that ‘the scientific community who gave us nuclear weapons’ could now ‘turn their great talents to the cause of mankind and world peace, to give us the means of rendering these nuclear weapons impotent and obsolete’ As an important first step, the President initiated A long-term research and development program to begin to achieve our ultimate goal of eliminating the threat posed by strategic nuclear missiles

Reagan’s vision of missile defense turned this address into one of the most controversial and influential presidential speeches of the 1980s Some political analysts argue that by dramatically raising the stakes in the military competition between the US and the Soviet Union, Reagan’s missile defense program paved the way for the success of later arms reduction talks However, when Senator Edward Kennedy first attached the ‘Star Wars’ label to Reagan’s vision in comments made on the floor of the Senate the day after the speech, it was to accuse the President of ‘misleading Red Scare tactics and reckless Star Wars schemes’, Kennedy’s comments were meant to point out the fantastic nature of Reagan’s missile defense program and the real dangers of his escalation of the arms race into space Yet, despite these critical intentions, the ‘Star Wars’ label was so evocative and ambivalent that it was immediately embraced by some of Reagan’s supporters, and henceforth the program, which did not acquire its official—and rather uninspiring—title Strategic Defense Initiative (SDI) until the spring of 1984, was universally known as ‘Star Wars’
In subsequent decades, the notion of effective missile defence was gradually displaced by the principle of nuclear deterrence (appropriately known as MAD, for Mutually Assured Destruction). However, in the late 1970s, interest in strategic defence systems re-emerged in certain scientific, military and political circles which exerted a strong influence on Reagan, who was already opposed to the concept of offence-based nuclear deterrence and genuinely concerned about the vulnerability of the US in the event of a nuclear attack.\(^{13}\)

Since the end of the Cold War, a number of arms control advocates, politicians, and military officers have argued that the United States should substantially reduce its reliance upon nuclear weapons. Taking that argument to an extreme, a loosely knit group of retired military officers, scientists, and defense intellectuals maintains that the elimination of nuclear weapons should be an explicit goal of the United States. The abolitionists contend that the only plausible use of nuclear weapons is to deter nuclear attack and that getting rid of nuclear weapons would eliminate this rationale. Although those holding more moderate views find this argument impractical, they too are ambivalent about nuclear deterrence, claiming that the risk of accidental or unauthorized launch of nuclear weapons outweighs any conceivable benefit. Some abolitionists and many military officers maintain that conventional precision-guided munitions (PGMs) offer an effective alternative to nuclear weapons.

While the abolitionists and their less extreme brethren perform a valuable service by subjecting nuclear weapons to critical
scrutiny, they overstate both the level of public support for their case and the viability of conventional alternatives. A careful assessment of public attitudes toward nuclear weapons reveals considerable skepticism toward nuclear disarmament. Nor can PGMs take the place of weapons. The U.S. armed forces must overcome daunting technological and organizational barriers before PGMs are truly capable of deterring and defending against weapons of mass destruction (WMD). Without a candid discussion of what conventional weapons can and cannot do, the United States risks a dangerous erosion of its nuclear deterrent before laying the groundwork for an alternative defense posture.  

While nuclear weapons played an important role in U.S. strategy during the Cold War, the dissolution of the Warsaw Pact and the collapse of the Soviet Union have triggered a reassessment of nuclear weapons policy within the defense community. The first call to reconsider the role of nuclear weapons in U.S. national security policy came from an unlikely source. In an article written in January 1994, Paul H. Nitze argued that it was time for the United States to reexamine its reliance upon nuclear deterrence. He reasoned that the threat of nuclear retaliation would be unlikely to deter aggression by regional powers, and that the U.S. government would be unwilling to use nuclear weapons to punish such a move. As a result, he recommended converting the principal U.S. strategic deterrence from nuclear weapons to PGMs. Nitze believed that such a force would give the United States of more credible and flexible deterrence. He argued that “It may well be that conventional strategic weapons will one day
perform their primary mission of deterrence immeasurable better than nuclear weapons if only because we can, and will, use them.  

Whereas Nitze sought to enhance deterrence, those who have dominated the ensuing debate have sought to abolish it. In late 1995 the Australian government formed the Canberra Commission for the Elimination of Nuclear Weapons, a group comprising such experienced policymakers as former secretary of defense Robert McNamara and former French prime minister Michel Rocard. The commission’s report, issued in August 1996, called on the United States, Russia, China, Britain, and France to commit themselves to the elimination of all nuclear weapons. The commission’s members rejected the argument that the possession of nuclear weapons deters war. To them, the notion that nuclear states would be able to retain their arsenals indefinitely without the possibility of nuclear weapons’ being used lacked credibility. They argued that the only way to eliminate the threat of nuclear war would be to abolish nuclear weapons. To achieve this goal, the commission recommended that the nuclear states should reduce the readiness of their strategic nuclear forces, eliminate their tactical nuclear arsenals, end nuclear testing, and initiate negotiations to reduce further, the size of the American and Russian nuclear stockpiles. They also called upon the nuclear powers to agree unanimously not to be the first to use nuclear weapons nor to use them against non-nuclear states.

For him, nuclear deterrence represented not a force for stability, but rather a catalyst for conflict. As he put it, deterrence rests
upon an “embedded assumption of hostility and associated preference for forces in high states of alert,” a posture that could lead to war through accident or miscalculation. He was dubious of the ability of nuclear weapons to deter the use of chemical or biological weapons by rogue states. He claimed, in short, that a world free from the threat of nuclear was had to be devoid of nuclear weapons. Given Butler’s intimate contact with nuclear doctrine and weapons throughout his military career, his conversion to abolitionism was certainly striking. It was not, however, unique. In the wake of Butler’s speech, sixty-one retired generals and admirals from seventeen countries, including Charles Horner, William Odom, John Galvin, and Andrew Goodpaster of the United States, Lord Carver and Sir Huge Beach of Great Britain, and Boris Gromov and Alexander Lebed of Russia, joined the chorus calling for nuclear abolition. In February 1998, 120 former civilian leaders from forty-six countries, including Jimmy Carter, Lord Callaghan, Mikhail Gorbachey, Helmut Schmidt, and Pierre Trudeau, released a statement supporting the eventual elimination of nuclear weapons. Goodpaster went on to lead a study group under the sponsorship of the Henry L. Stimson Center. The group’s March 1997 report, An American Legacy: Building a Nuclear Weapon Free World, argued that the president should commit the United States unequivocally to the elimination of WMD and advance the cause by seeking ratification of the Chemical Weapons Convention and Comprehensive Test Ban Treaty and by negotiation a third Strategic Arms Reduction Treaty. It also called for a blank-sheet
review of U.S. nuclear weapons policy, a cutoff in the production of fissile material, and an invitation to others to participate in nuclear threat reduction activities^1^.

Although the abolitionists are a loosely knit group, they share a number of core beliefs. The first is that the only rational purpose for nuclear weapons is to deter nuclear attack, a possibility that would disappear if nuclear weapons were eliminated. In addition, the abolitionists argue that nuclear weapons cannot deter attempts by regional powers to coerce or invade their neighbors, protect U.S. troops from attack, or deter or respond to the use of chemical or biological weapons. Hence, the costs and risks associated with nuclear weapons outweigh the benefits of possessing them. General Butler has portrayed deterrence as “a formula for unmitigated catastrophe... premised on a litany of unwarranted assumptions, improvable assertions and logical contradiction.” In his eyes, “the threat to use nuclear weapons is indefensible.”

A second assumption, which flows from the first, is that the elimination of nuclear weapons will produce a safer world. As the members of the Canberra Commission put it, “a central reality.” Left out of the abolitionist argument is the relationship between nuclear deterrence and the outbreak of conventional war. In fact, many people have argued that nuclear deterrence helped to prevent war between the United States and Soviet Union. While the abolition of nuclear weapons would, by definition, eliminate the possibility of nuclear war, it could increase the potential of conventional war.
A final, often implicit, assumption is that non-nuclear munitions offer a viable alternative to nuclear weapons. Nitze has made the case most explicitly, but the assumption clearly figures in other arguments as well. The National Academy of Sciences Committee on International Security and Arms Control, for example, argues that the United States' conventional superiority over potential adversaries will allow it to restrict its nuclear arsenal to the deterrence of nuclear attack or coercion. Andrew Krepinevich and Steven Kosiak, while not abolitionists, nonetheless agree that PGMs will permit the United States to make deep reductions in its nuclear arsenal. The central question is whether non-nuclear PGMs will be able to deter aggression and—failing that—whether they can carry out the same missions as nuclear weapons.

The overriding interest of the United States in South Asia lies in the establishment of positive and constructive relations with India, a rising power with one sixth of the world's population. India is growing economically at an average annual rate of 7%, and is developing significant military power projection capabilities that will make it an increasingly important factor in the Asia balance of power and in global councils.

The key to a constructive American relationship with India and with neighboring Pakistan is to avoid embroilment in their struggle over the terms of their power relationship. Yet during the cold war the United States became enmeshed in this struggle. American policy assigned a clear priority to relations with Pakistan by providing a total of $3.8 billion in military aid to Pakistani military rulers that was nominally directed against the
communist powers but was in practice used to strengthen Pakistan relative to India.

The psychological and political legacy of this cold war American tilt continues to trouble United States relations with India despite the steady growth in economic and cultural ties. Shortly after Prime Minister of India I. K. Gujral assumed office in May 1997, \textit{The New York Times}, in a profile of the new Indian leader, recalled the strained atmosphere that had marked a recent meeting between Gujral and a prominent American senator. Gujral “maintained an air of studied distance,” and aide to the senator told the Times “There was a kind of bristling feeling, as though there were bad memories that had not been fully laid to rest.”

In Pakistan the cold war years have also left painful memories that impede constructive relations with the United States.\footnote{19}

The most sensitive issue in American relations with the South Asian countries especially India and Pakistan is the issue of nuclear non-proliferation and nuclear arms control. Since the end of the cold war and the collapse of the Soviet Union, American self-image as the “only super power” has reinforced the American assumption that the nuclear club should be restricted to its five present members and that the United States is entitled to have the biggest—and best—nuclear arsenal in order to preserve international stability. In pressing India and Pakistan to sign the NPT, the United States has presented its position in benign, altruistic terms, emphasizing its desire to help prevent a nuclear war in South Asia. The implication is that South Asian
are irrational fanatics who cannot be trusted with the bomb and that deterrence, which was the basis of the United States strategic doctrine during the cold war, will not work in the non-Western world. Since the United States is the only country that has ever used nuclear weapons, this American emphasis on the nuclear danger in South Asia is viewed in India and Pakistan as at best patronizing and at worst racist.

Many Indians have what might be called a “post-dated” self-image, they are confident that India is on the way to great power status and want others to treat them as if it has already arrived. By the same token, to many Americans India’s ambitions are pretentious nonsense, given its widespread poverty, and New Delhi should be prepared to deal with the United States on the basis of the actual power relationship between the two countries. This is the normal attitude for a powerful state to adopt in relations with a less powerful state, but its practical effect, in the case of India, is to reinforce nationalist feeling, including support for nuclear weapons.

India’s space program also acquires growing sophistication. It is developing technical capabilities that could be used to make intercontinental ballistic missiles capable of reaching the United States possibly within 10 years. Meanwhile, by marking clear that it is capable of rapidly assembling and delivering short-range and intermediate range nuclear weapons through its Prithvi and Agni missile programs, India is attempting to assert major power status without incurring the economic and diplomatic costs that overt weaponization would involve.
U.S. Secretary of Defense William J. Perry announced a basic reversal of American nuclear policy in South Asia and said on Jan. 31, 1995, in a talk before the New York based Foreign Policy Association “I recognize that the nuclear capabilities of India and Pakistan flow from a dynamic that we are unlikely to be able to influence in the near term. Rather then seeking to roll back – which we have concluded is unattainable in these two countries we have decided, instead to seek to cap their nuclear capabilities.”

Despite this pronouncement, the United States has failed to give India and Pakistan concrete incentives to cap their nuclear weapons potential at present levels. Yet the Perry declaration has opened up the possibility of a pragmatic bargain between India and the United States that could achieve the capping objective and, more broadly, reduce tensions over nonproliferation that could threaten the stability of the Indo-American relationship.

In such a bargain, India would retain its nuclear weapons option but would agree to a series of concessions that would make its commitment to capping unambiguous and also provide political cover for the Clinton administration to make parallel American concessions. An accommodation between India and the United States on nonproliferation and nuclear arms control issues is a prerequisite for a parallel accommodation with Pakistan.

First, India would seek a compromise with the United States in their current dispute over India’s refusal to sign the test ban treaty. One approach would be to sign the treaty while reserving
the right to conduct further tests (as China has done) until the treaty goes into force. Another approach would be to stop testing without signing the treaty, either immediately or after further tests. The Indian government could make a declaration, endorsed by parliament, citing the key clauses of the treaty and explicitly pledging that India will unilaterally comply with these provisions.

Second, India would agree to extend the application of International Atomic Energy Agency safeguards, now limited to its Tarapur nuclear reactor, to all of its existing and future civilian nuclear reactors, and would sign the fissile material cutoff convention now being negotiated, which would require similar safeguards to confirm that fissile material is not being diverted from power reactors for military use. (This would not constitute the “full-scope” safeguards hitherto demanded by the United States because inspections of research reactors and reprocessing facilities would still be barred.

Third, India would make a binding commitment not to export nuclear technology, formalizing its present de facto policy. This would place New Delhi in accord with a key provision of the NPT.

The United States for its part, would have to make clear that it is reconciled to India’s acquisition of the nuclear weapons option and avoid policies suggesting that it still harbors the “rollback” objective. In particular, the United States would have to end its ban on the sale of nuclear reactors to India and other restrictions on United States cooperation with India’s civilian nuclear power
program, starting with restrictions on United States cooperation on nuclear safety. This would require amendment of the 1978 Nuclear Non-Proliferation Act to allow exports of nuclear technology under specified conditions.\textsuperscript{20}

The United States is now without doubt the dominant military power in the world. With twelve-battle-carrier groups and hundreds of military bases spread around the world, the US spent $455 billion on its armed forces in 2005, with another $82 billion marked for the wars in Iraq and Afghanistan.

This is more than the total sum spent by the next thirty-two countries down the list, and is close to 50\% of total world military spending. The quadrennial defense review released by the Pentagon on 3 February 2006 and the federal budget for fiscal year 2007 released on 6 February schedule further increases both of military spending and of the range of operational program.

‘Open Democracy’s’ global security correspondent Paul Rogers points out: “As these budgets increase, almost every other area of federal spending is reduced—clear evidence of the overarching priority of fighting the war...This is clearly a global war, and the world as a whole is involved, whether or not it wants to be”

Moreover, the United States shows every sign of determination to use as well as expand this military power. US military doctrines have shifted away from deterrence to preemption, unilateral military intervention, and simultaneously fighting several local wars overseas. The US military has put in place a 2004 ‘Intrim
global strike alert order” from Donald Rumsfeld that requires it to be ready to attack hostile countries that are developing weapons of mass destruction, specifically Iran and North-Korea. The military claims to be able to carry out such attacks within “half a day or less” and to use nuclear weapons in such an attack.21
References


2. Ibid, P. 3


5. Ibid

6. Ibid; P.202

7. Ibid

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11. Ibid, PP.115-117


13. Ibid

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CHAPTER - III

India’s Nuclear Policy
CHAPTER-III

INDIA’S NUCLEAR POLICY

India maintained its position in favor of abjuring nuclear weapons until Jawaharlal Nehru was at the helm of affairs, though one can quote remarks and observations by him which indicated that he had not entirely ruled out the option of India acquiring nuclear weapon. After the death of Jawaharlal Nehru, India decided to depart from the idealistic path and prepared itself for acquiring nuclear weapons in case it became necessary. Instructions to this effect seem to have been given during the Prime Ministership of Lal Bahadur Shastri. In 1968, India decided not to accede to the Nuclear Non-proliferation Treaty (NPT), and thus, kept open its option of acquiring nuclear weapons. In 1974, Pokhran-I test was carried out which demonstrated that India had not only kept its option open but also was capable of fabricating nuclear weapons. Information made available recently indicate that several times in the recent past in 1982 during Mrs. Indira Gandhi’s regime, in 1995 when Mr. Narasimha Rao was in power, and in 1997 when Mr. I. K. Gujral was the Prime Minister, the Government of India had made all the preparations for carrying out nuclear weapons tests, but ultimately resiled from it under a variety of pressures. In 1996, India did not sign the Comprehensive Test Ban Treaty (CTBT) because it wanted to keep open not only its option to acquire nuclear weapon – a purpose which could have been
served by our non-accession to the NPT – but also the manner in which the option would be exercised.¹

In the history of Indian Nuclear Policy Oct. 16, 1964, was one of the defining and critical moments. Up to that date India only thought of developing a capability which could be converted into a nuclear weapon option, if it become necessary. When China became a nuclear weapon power, detonated its first nuclear device on Oct 1969, India felt threatened by this turn of event. China which was involved in an armed conflict with India in 1962, became a nuclear weapon power. Thus it became imperative for Indian Policy-makers to give serious consideration for the country acquiring nuclear weapons. A few days after Dr. Bhabha talked of India being in a position to go nuclear in about 18 months following a decision and that it would cost only Rs. 18 Lakhs per weapon. He was immediately rebuked by V. K. Krishna Menon who was a fervent anti-nuclear campaigner.²

In 1955, Homi Bhabha, presided over the first U.N. conference on the peaceful uses of atomic energy in Geneva, argued that India needed to develop nuclear power to augment its energy base. The reasons were the growing demand for the electricity of a large population, coal resources were localized to only some parts of India and transport over long distances added significantly to the real cost at the consuming end, and finally India depended excessively on burning wood and agricultural waste (including cow dung) which was wasteful of resources having important alternative uses.³
Continuing his argument in the second U.N. conference on the peaceful uses of atomic energy held in Geneva, in 1958. Homi Bhabha held forth that developing countries like India needed nuclear power ever more than the industrialized ones which had already invested heavily in fossil fuel power generation.

In 1959, India took a decision to set up its first nuclear power station in western India, in the vicinity of Bombay. The site (of Tarapur) was chosen in 1961 and global bids were invited for building the power station. The contract for construction of India's first nuclear power station (with two boiling water reactors) was given to the General Electrics, a U.S. company, in mid 1964. Both the units became fully operational in the autumn of 1969. During 1960 to 1970 India concentrated on completing the Indo-US Project at Tarapur and Indo-Canadian Project in Rajasthan (near Kota). Techniques of quality control and non-destructive testing were areas requiring special training. It was an exhilarating period as the young engineers and scientists of the Indian Atomic Energy Program were simultaneously engaged in learning and training others in the many facets of nuclear technology. Indian industry was being inducted to the extent possible through development contracts and extensive shop floor training. In the latter half of the Sixties, a decision was taken that the third atomic project would be taken up as a total Indian effort with full responsibility for design, engineering, manufacture, erection and commissioning resting with Indians. At that time there were no embargoes or technology denials—they would come, but much later. It was an act of faith that as
early as possible India should acquire comprehensive capabilities to build and operate nuclear power plants.\textsuperscript{4}

During the period 1970-1980, the Indian atomic energy program took on the task of producing the nuclear materials, namely uranium and heavy water, in quantities required by the reactor construction program. Process technologies were developed at the Bhabha Atomic Research Center, Trombay and engineering and fabrication activities were embarked upon to put up industrial scale plants. Production of nuclear fuel and heavy water certainly posed many challenges and there were disappointments and delays along the way. Eventually they were solved and Indian industry began to supply equipments and components required for these construction facilities. Other technological enterprises that were set up during this period included an electronics industry for producing reactor control and instrumentation. High vacuumed techniques, metal deposition and coating process and similar specialized activities were taken up. One of the biggest challenges encountered in all these activities related to quality up gradation of various section of Indian Industry. This has been one of the biggest spin-off benefits of the atomic energy program.\textsuperscript{5}

When the first unit of Madras Atomic Power Station was started in 1983, it was indeed a proud moment for the country and the atomic energy establishment. The countries which had the capability to design and build nuclear power units on their own technology at that time were the U.S, the U.S.S.R, France, Germany, Japan, Canada, the U.K and Sweden. India had
managed to join this select club in spite of limited industrial and technological base. The second unit of Madras Atomic Power Station was commissioned in 1985. Earlier on, work had commenced on an atomic power station with two units at Narora, on the banks of river Ganga, some distance away from Delhi. This site is located in a seismic zone and so extensive analyses of the design and validation with testing preceded the finalization of designs. For this reason, the gestation period was longer than initially foreseen. The first unit of this station was commissioned in 1989.6

From the early eighties, serious consideration was given to a 15 year plan for a development of nuclear power. In the earlier phase, projects were taken up with rather large time gaps and the project execution times were rather long, mainly due to learning curve problems. It was recognized that designs and major equipment had to be standardized for a number of units. Long time cycle equipments was best ordered well ahead of civil construction at site. Also this equipment was to be ordered in batch mode rather than one or two at a time if manufacturing cycle times were to be minimized. It was also recognized that much greater mechanization of construction was a must. The 15 year plan was not only looked at the nuclear power units but also at matching capacities for production of fuel and heavy water. In 1985, a program of constructing ten reactors of 235 MW (the size that were standardized for the units at Madras and Narora) and ten of 500 MW—a larger version—was approved by the government of India. In addition to the units in operation and
those under construction, the target was 10,000MW of nuclear power by the year 2000 AD

Although the nuclear power program described above meant a large scale expansion of activities, there was a need to target for an even higher nuclear power capacity because of the rise in demand for electricity. The Soviet Union had been assisting India in the field of thermal and hydro-electric power for several decades. For 1978 onwards, the Soviet Union had been hinting that they could cooperate with India in the field of nuclear power also. They offered to build in India light water reactors of soviet design (referred to as VVER) with a capacity of 440 MW. But after the breakup of the Soviet Union, virtually no progress was made on the Indian soviet project. The development in the nuclear field was halted during 1990’s. Initially in 1990-91, India had a two short lived Governments which were mainly concerned with the existential problems. The Congress Government under P, V Narsimha Rao was in minority initially and during this period India was facing a severe financial crisis. Thus the new economic policy of P. V Narsimha Rao and his Finance Minister Manmohan Singh was to let the private sector into power generation and reduce direct investments from the government of India in this activity and no new starts were made on any nuclear power units during 1990-1996. Of the program of 15 years, only four reactors of 235MW had been started. The second unit at Narora and two units at Kakarapara (in Gujarat), started in 1980’s were completed and put into service.
When China exploded its first nuclear weapon in October 1964, the then Government of India sent an emissary to the United States to explore the possibility of latter providing a nuclear umbrella to India. The United States expressed its inability to oblige. Then India tried its best to seek security from nuclear weapons within the framework of global measures for nuclear disarmament. It took a series of initiatives for this purpose. Apart from taking the lead in 1954 for seeking a ban on nuclear weapons tests, India was one of the leading countries which moved the resolution in the General Assembly in the early 1960s for preventing the proliferation of nuclear weapons. What India had in mind while taking this initiative was to prevent both vertical and horizontal proliferation. Unfortunately, the outcome was far removed from the original purpose conceived by India. The NPT provided for the prevention of only horizontal proliferation. In 1982, India took the initiative for setting in motion negotiations for the adoption of a convention on the non-use of nuclear weapons; and for a freeze on the production of weapons-grade fissile material. Finally in 1988 India submitted to the 3rd Special Session of the UN General Assembly devoted to disarmament (SSODIII) s comprehensive plan for the elimination of nuclear weapons. This plan, which came to be known as the Rajiv Gandhi Action Plan, suggested the eliminated of nuclear weapons in three stages by the year 2012. It also suggested a freeze of collateral measures to facilitate the process of moving towards elimination as well as long-term measures for luring in and sustaining a nuclear weapons free world. Three initiatives did not elicit any positive response from
the nuclear weapon powers. Through all the initiatives that India succeed, the primary purpose was to rid the world of nuclear weapons. For, India believed that this was the only framework in which it could avert threat to its security emanating from countries armed with nuclear weapons. However, the nuclear weapons states remained adamant on their opposition to the elimination of nuclear weapons and on their insistence on the right to possess and was nuclear weapons. The last occasion when their categories and unambiguous position on this issue was reiterated was the hearing before the International Court of Justice on the issue of the legality of the possession and use of nuclear weapons.

In the meanwhile, on May 18, 1974 India had exploded its first nuclear device at Pokhran (Rajasthan) to which it named as peaceful nuclear explosion (PNE). India is the only country whose first nuclear device was conducted underground. All the five nuclear weapons states had conducted their first nuclear test in the atmosphere.

Militarily, India’s nuclear option is primarily a response to the Chinese nuclear weapons posture, and politically it reflects a determination to achieve greater recognition in global forums. Besides, it is India’s goal to escape from second-class status in world affairs and receive recognition commensurate with its position as one of the world’s oldest and largest civilizations. Since nuclear weapons still constitute the principal coin of power, this quest for equitable status has prompted India to perfect its ability to assemble and deliver nuclear weapons-
unless and until the existing nuclear weapons states make credible progress toward a nuclear free world.  

India exploded its first nuclear rest in 1974, to which it named as P.N.E. (peaceful Nuclear Explosion). After almost a gap of 24 years, on May 11, 1998 Indian P.M. Atal Bihari Vajpayee announced that New Delhi had conducted three nuclear tests, one which involved the detonation of thermo nuclear device. Two days later India announced that it had conducted two more detonators that purportedly “completed the planned series of underground tests”. The nuclear test that India conducted was code named as “BUDDHA IS SMILING” which espoused the case of non-violence in its long history of over five thousand years chose to shun its oft-stated goals of global disarmament in favor of the going nuclear in the summer of 1998.

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Under these circumstances India tested five tests on May 11, 13, 1998 and almost a year later, declared herself to be a state of nuclear weapon. Rather than a nuclear weapon state, by disclosing to the public its draft nuclear Doctrine. Even before the development of an operational Indian nuclear force, however, a doctrinal framework for it has been proposed. The
The document proposing a Nuclear Doctrine for India is designed to stimulate informed discussion on the “credible minimum deterrent”. India has decided to put in place to safeguard its strategic autonomy. The Nuclear Doctrine Group of the National Security Advisory Board prepared a draft after detailed discussions spread over several months. This consensus draft a consensus document of the entire National Security Advisory Board. It is now for the Strategic Policy Group, the National Security Council and then the Cabinet to approve, or reject the document.

The Draft Nuclear Doctrine (DND) formulated by the National Security Advisory Board and released for public debate by the departing Vajpayee government in August 1999, is a remarkable documents (National Security Advisory Board 1999). Not only has it in simple, clear language brought together very divergent views on the controversial issue of nuclear policy, it has shifted the intellectual level of debate, so heated in the aftermath of Pokhran-II, from the polemical to the thoughtful.\(^\text{12}\)

The preamble to the DND asserts the primacy of economic and social development, for which the prerequisites are a stable, peaceful world and autonomy of national decision-making. These, however, are threatened by the continuing existence of nuclear weapons, which are legitimized by the Nuclear Non-Proliferation Treaty (NPT). Enumerating its objectives, the DND calls for “credible minimum deterrence” based on a capacity for “punitive retaliation with nuclear weapons to inflict damage unacceptable to the (nuclear) aggressor”. For this, the
requirements are “sufficient, survivable and operationally prepared nuclear forces”, organization, and the will to employ nuclear weapons should deterrence fail. The document proclaims no-first-use of nuclear weapons as a central tenet, as well as non-use against countries which are not nuclear and are not allied with nuclear powers. Robust conventional forces are considered necessary in order to raise the nuclear threshold.

The DND envisages a triad of air, land and sea-based delivery systems whose “survivability will be enhanced by a combination of multiple redundant systems, mobility, dispersion and deception”. It distinguished between an unspecified “peacetime deployment” and a shift to “fully employable forces” in the event of a conflict arising. There is an emphasis on credibility – “any adversary must know that Indian can and will retaliate” – and on effectiveness based on “reliability, timeliness, accuracy and weight of attack”. The DND goes on to outline the requirements for command and control, security and safety, and research and development, and concludes by focusing on disarmament and arms control.\textsuperscript{13}

The answer to question that why India adopted this nuclear policy at the time it was adopted are many. Among the multiple factors that causes every states decisions to acquire or forge nuclear weapons, the three most important considerations involve national security, international status and domestic politics.

In terms of national security, India’s development of nuclear weapons has been driven primarily by concerns about China.
India and China have been natural competitors in Asia since they emerged as modern; Post-colonial states in the late 1940’s. Both are ancient civilizations with extraordinarily rich cultures. Both were re-born in the first half of the 20th century via nationalist moments that inspired millions of people around the world. After regaining their independence, India and China pursued starkly different Political-economic development paths, which in turn provided competing models for scores of newly independent Third world states. When assessing their countries status in the hierarchy of nations, post-independence Indian decision-makers have reflexibly cast their gaze at China for purposes of comparison. What they see often displeases them. Despite early expressions of neighborly solidarity Sino Indian relations soured in the late 1950’s. In 1962, China trounced India in a border war, whose underlying territorial disputes remain unresolved today. It is nearly impossible to over estimate the impact of the China war on a people who drive enormous pride from their Gandhian legacy of non-violence. The national security roots of India’s nuclear weapon program lie in 1962 defeat and in China’s 1964 nuclear explosive test. The program’s fundamental raison d’etre is to deter another attack by China, which while considered highly unlikely, cannot be entirely ruled out by any Indian leader.

As for as the issue of India’s (New Dehli’s) international status is concerned, the China factors still dominates the scene. Between the first Chinese nuclear test of 1964 and the first Indian test of 1974, the Nuclear Non-Proliferation Treaty (NPT) entered into force in 1970. The NPT affectively created a club of legitimate’
NWS whose membership was frozen at five, with China being the last one, on the basis of the country's conducting nuclear test before the enforcement of the NPT when the door to the nuclear club slammed shut in 1970, India found itself on the outside, consigned to being either a nuclear 'have not' or an 'illegitimate' NWS. Soon there after, several events enhanced China's international stature. In July 1971 U S. President Richard Nixon announced to travel to Beijing to began the process of normalizing U.S. relations with China. In Oct. 1971, China's seat at the U.N. and its permanent seat on the Security Council were given to Beijing. Indian leaders noted both the symbolic bestowal of great power status on China and the fact that the membership lists of the Security Council and the nuclear club were now identical. India's 1974 nuclear blast followed soon after.

The India Government's policy papers that was submitted Parliament two weeks after the 1998 nuclear tests, reads, "India is a NWS. This is a reality that can not be denied. It is not a conferment that we seek; nor is it a status for others to grant. It is an endowment to the nation by our scientists and engineers. It is India's due, the right of one-sixth of human-kind". This shows that India wants to be treated as an important country, at least as important as China. For that purpose, Indian leaders and strategists believe that nuclear weapons remain a key indicator of state power. Therefore, the only choice left with India was to update and validate the capability that had demonstrated 24 years ago in the nuclear test of 1974.
The third important consideration that relates to the factor of domestic politics is the time frame i.e. 1998. After 24 years of restraint, it was the BJP leader who during the 1998 election campaign said, ‘The BJP rejects the notion of nuclear apartheid’ and will actively opposed attempts to impose a huge monistic nuclear regime. We will not be dedicated to by anybody in matters of security and in the exercise of the nuclear option. Therefore, in order to fulfill its election promises, and to the extent of the BJP government took this decision, also, to convey the Indian voters that this government is much more than the earlier governments.  

Prime Minister Mr. P. V. Narsimha Rao’s candour is particularly significant in the aftermath of the indefinite extension of the N.P.T. with his interview, India has asserted that it is a nuclear weapon capable power, unencumbered by the NPT.  

India’s resumption of nuclear testing and its admiration of French Government’s announcement of the latter’s intention to conduct nuclear test because France regards nuclear weapons as being necessary for its security even though it has no adversary, nuclear or non-nuclear.  

By contrast India is in the unenviable position of having two nuclear-armed neighbors with both of whom it had fought wars in the past. We find that Prime Minister Rao’s statement has an element of extraordinary restraint. He has spoken of India’s disinclination to make a bomb even though it could do so readily. This is in sharp contrast to the policies adopted by other seven nuclear weapon and nuclear weapon-capable nations. Having
came this far, India should unilaterally declare a no-first use of its nuclear capability. India had proposed a mutual renunciation of first use in the past only to have Pakistan rejected it. A unilateral declaration on no-first-use will not only be a diplomatic coup for India but will also help it to gain in moral stature.\textsuperscript{15}

One of the immediate causes for the release of a Draft Nuclear Doctrine in August, 1999 in the aftermath of the nuclear blasts May 1998) is to derive maximum electoral advantage. The Vajpayee Government was in a caretaker capacity having lost its majority in the lower house of Indian parliament and a new election had already been called for Oct. 1999. Another view might suggest that the nuclear doctrine was formulated only to formalize BJP’s nuclear policy declared after the nuclear tests were conducted in May 1998. Yet another view might be to legitimize India’s nuclear weapons through the formulation of DND arising out of “the reciprocal fear of surprise attack”.\textsuperscript{16}

A Critical assessment of India’s D.N.D by Pakistan Foreign Minister is that it is the latest manifestation of India’s ambition of regional hegemony and global major power: the same pursuit. The Indian nuclear doctrine outlines New Delhi’s goal of acquiring massive nuclear war fighting capabilities. Such a massive program for developing nuclear arsenal coupled with plans for acquiring a massive conventional capability will surely have near and long term strategic implications for the region and beyond as well as for regional and global non-proliferation concerns. The scale of the nuclear weapons capability envisaged by the doctrine is clearly not designed to maintain
“credible deterrence” against Pakistan which has made proposals for nuclear and missile restraint in the region. Nor can this capability be meant for nuclear deterrence against China. According to authoritative sources India is planning up to 400 operationally deployed warheads. For a minimum credible deterrence India does not need to deploy such a large nuclear arsenal. These can be justified only by larger ambitions for military hegemony and control of sea lanes from the oil rich Gulf in the West to the Straits of Malacca in the East. Accordingly, the world needs to comprehend the near and long term implications of India’s nuclear capability. India’s plans for the development of a vast conventional force coupled with a large nuclear arsenal are aimed at building an offensive rather than a defensive military capability. The objective is assertion and consolidation of influence, based on the premise that nuclear weapons are, in the words of Jasawant Singh, the currency of power and force. There are near term implications for initiatives aimed at nuclear restraints and avoidance of a nuclear arms race in South Asia. Pakistan had believed that nuclear deterrence could be exercised by Pakistan and India at the lowest possible level.¹⁷

Nonetheless, in the 1990s, Indian strategists and a few politicians began seriously to question the adequacy of the “option” strategy and non-weaponized deterrence. The nuclear non-proliferation Treaty was extended indefinitely in 1995, perpetuating the possession of nuclear weapons by the United States, Russia Britain France and China for the indefinite future, while denying the rest of the world these weapons. This outraged Indian specialists and the attentive public, prompting
rethinking of India’s own nuclear policy. Some Indian military and non governmental strategists had long ago decided that the country should deploy nuclear weapons. For them, the developments in the mid 1990s offered another political opportunity to make their case. True believers in nuclear disarmament had been driven from effective power by 1998 or had been disillusioned by the failure of the major powers to pursue nuclear disarmament even after the cold war’s end. Cynics who had used complaints about inadequate progress in nuclear disarmament to cover India’s ongoing nuclear weapons and ballistic missiles program wanted to lift the veil. The strategic enclave had run out of patience. After twenty-four years of self restraint, the May 1998 nuclear test reflected all of these changes.18

Assuming that states such as India make decision according to realist models and are driven primarily by national security imperatives, Western theorists and policymakers expect that India should build and deploy a nuclear arsenal of sufficient quantity and operational quality to ensure that it could withstand an adversary’s first strike and retaliate with enough nuclear force to end a war on India’s terms. Indeed, according to these theories India should have built, deployed, and operationally fine-tuned such a survivable second strike arsenal long ago.

Domestic factors, including moral and political norms, have been more significant in determining India’s nuclear policy. Often, tensions between domestic interests have made this policy appear ambivalent and ambiguous. India has been torn between
a moral antagonism towards the production of weapons of mass
destruction, on one hand, and on the other an ambition to be
regarded as major power in the world where the recognized
great powers rely on nuclear weapons for security and prestige.
India’s domestic imperative to foster socio-economic
development has clashed with an interest in building up military
strength. India’s policy making processes and institutions also
have affected its nuclear history: Indian political leaders and the
leading scientists have consciously excluded the military from
nuclear decision making, again for internal reasons.\textsuperscript{19}

Indian officials stated that security compulsions from China
compelled the nuclear tests of May 1998. However, Indian
diplomacy in 1999 and 2000 suggested that brandishing nuclear
strength was meant to serve more protean purposes. Nuclear
prowess gave the Vajpayee Government confidence and
domestic political credit to invest in diplomacy to establish the
Pakistan front as was attempted at Lahore. Nuclear
assertiveness created new found respect for India in
Washington, as Indians, saw it. India’s growing importance also
drew the heads of state from France, Germany, Japan and the
United Kingdom to meet with Vajpayee. China was a more
delicate challenge; India approached it with less-self assurance
than it displayed toward its other interlocutors.\textsuperscript{20}

The May 11 and 13 tests do not give India the minimum nuclear
deterrence it intends to acquire. In order to acquire such a
deterrence it would be necessary for India to fabricate more
nuclear weapons, and to test and produce the Agni missile, both
of its proven range as well as of the improved range. In addition, it will also become necessary for India to deploy its nuclear weapons and put in place the command, control and intelligence system, and define its new security strategy. All these may take a minimum of two to five years or may be even longer. It is, therefore, premature to declare ourselves as a nuclear weapon state now.21

Credible minimum deterrence is a dynamic concept which will have to be related to the evolving capabilities of possible adversaries. Some commentators have assumed that this could entail an open-ended arms race. But it is not necessary for the operation of nuclear deterrence that warheads should be matched with warheads and missiles with missiles. A credible retaliatory nuclear force can be maintained without entering into a competitive spiral of arms. In order, however, to raise the threshold of outbreak of conventional military conflict as well as threat or use of nuclear weapons by an adversary, highly effective conventional military capabilities will have to be maintained.22

The credibility and effectiveness of the Indian nuclear deterrent will be based on the manifest capability to inflict unacceptable punishment on an adversary if it uses nuclear weapons against India and its forces. Some commentators have assumed that unacceptable punishment is similar to “assured destruction” quantified by former U.S. Defence Secretary Robert McNamara. According to his definition, it meant ability to destroy approximately half of the former Soviet Union’s industrial
capacity and one-fifth to one-fourth of its population. All this appeared scientific and precise; but basically assured destruction was a budgetary device for rejecting the excessive demands of the American armed forces.23

Minister for External Affairs Jaswant Singh has written “that the country’s national security, in a world of nuclear proliferation, lies either in global disarmament or in exercise of the principle of equal and legitimate security.” The question arises: how does signing the CTBT – which, incidentally, is opaque about what exactly it is supposed to be banning – help either the cause of disarmament or that of equal and legitimate security? And, considering the realities of power, why does anybody in government think that it would? The fact is it would be foolish for India not to utilize the hiatus between now and when CTBT is finally sealed and ratified by all parties, to resume nuclear testing and to proceed apace with designing a variety of nuclear weapons.24

All this must be weighed against the situation India had confronted in May-June 1998. An angry and shaken United States imposed wide-ranging sanctions against India. Japan, India’s largest donor, cut off all new assistance and put a freeze on high level contacts. The G-8 industrialized nations joined the United States in blocking multilateral lending to India. China reacted with venom against India’s identification of Beijing as the principal factor in its decision to test. The diplomatically active Anglo-Saxon nations, Australia and Canada led the charge against “a deviant India” in various multilateral forums.25
Following the Pakistani tests at the end of May 1998, the five Permanent Members of the United Nations Security Council (the P-5) issued a statement in early June condemning the nuclear tests and linking them to the Kashmir dispute. They followed through with the United Nations Security Council Resolution 1172, that called on India and Pakistan to desist from nuclear and missile programs, called on the two countries to join the NPT and referred to the Kashmir dispute as the underlying cause of insecurity in the Subcontinent. This was followed by a Sino-U.S. joint statement on non-proliferation in South Asia, during President Clinton’s visit to China in June 1998. In short, India was confronted with a terrible scenario of international economic sanctions, a basis for UN activism to coerce India into joining the NPT, the internationalization of the Kashmir dispute, and a Sino-U.S. collusion against India. New Delhi has successfully fended off these dangers that appeared so imminent in mid-1998. India’s gains since then are a consequence of fundamental changes in both the substance of India’s nuclear policy as well as the style of India’s diplomacy. The following is an examination of the key principles that have helped India cope with the post-Pokhran diplomatic challenges.

The greatest transformation in Indian diplomacy has been the shift from a radical posturing on the nuclear issue to a readiness to bargain. Never before has India the kind of deal-making it has over the last year and a half with the United States on the nuclear issue. For the Americans, bargaining comes naturally; they have no problem in splitting the difference between two divergent positions. Making deals and accommodation of
divergent principles is part of American political life. Liberals and conservatives, internationalists and isolationists, the religious right and social radicals have no problem coexisting in the same political party. Externally the focus of American diplomacy is on “problem solving” on a pragmatic basis.

In diplomacy, a great power often strives hard to prevent a particular event from happening. Once the event takes place, and there is no way of undoing it, the wisest course is to limit the damage, adapt to the new reality, and move on. For many years, the United States has worked overtime to stop India from becoming an overt nuclear weapon power. But within a month of India declaring itself a nuclear state, the United States began a process of engaging India, with the implied sense that the outcome would be less than “pure” from the American non-proliferation point of view.

Yet in the wake of its nuclear tests, India understood that it has to work hard to limit the political damage from Pokhran-II and find a basis to revive relations with the major powers. After it completed the series of five tests, India announced that it was ready to consider signing the CTBT, join the negotiations on the Fissile Materials Cut-off Treaty that limits the production of material for nuclear weapons, and reasserted its commitment to prevent the spread of weapons of mass destruction. Given the fact that Indian had opposed with such vehemence these very same ideas in the recent past, the turn around in New Delhi’s policy was nothing less than dramatic. The focus of India’s diplomacy since then has been a willingness to negotiate
adherence to internationally binding obligations such as the CTBT in return for other political and technological gains. From being a “perpetual dissident” against the global nuclear order, India, now having converted herself into a nuclear weapons power, was now eager to deal. Having shed its nuclear ideological virginity, India will never again be the same.  

Even as the United States makes its adjustments, India too has begun to concede that it had tended to demonise the NPT system in the past. There is a recognition in New Delhi, that India too has a stake in the preservation of the rules to prevent the spread of weapons of mass destruction. India is now replacing its old rhetoric against the NPT, with a more sophisticated position that calls for accommodation of India's own nuclear security interests in return for supporting the global non-proliferation rules. Unlike in the past India is now willing to see that the NPT, CTBT and other non-proliferation regimes have strong international support and declare that it has no desire to overturn them.

Thus it has been anticipated by the Indian policy makers that in the future India should brace for a very difficult period. During this period, the pursuit of many of Indian foreign policy goals, including that of trying to become a permanent member of the Security Council, will have to be suspended. India can expect to remain outside the mainstream of the disarmament dialogue and international affairs in general. Its relations with countries whose nuclear hegemony India have challenged, will continue to remain strained. This is particularly true of China because, like all other nuclear weapon powers, it not only sees a challenge to
the status quo which suits it ideally, but also it sees a direct challenge to its dominance in Asia. Much of the deterioration that has taken place in India’s relations with China should have been anticipated when we decided to move towards acquiring a nuclear deterrence. These are the inevitable consequences of India upsetting the world nuclear order of which China is a part. This would have happened even if there would have been no reference to the Chinese threat in the letter the Prime Minister of India addressed to President Clinton and some other Heads of Governments. This, however, does not exonerate India from the fundamental diplomatic responsibility of weighing her words carefully and not having said things which unnecessarily annoyed China.²⁷

It is not necessary that India’s attempt to acquire a minimum nuclear deterrence will lead to a nuclear arms race between India and Pakistan or between India and China. There has, in fact, been no nuclear arm race in the post-Word War period except that between the United States and the then Soviet Union. Other countries like UK, France, China and Israel also built their nuclear deterrence in the meantime. The size of their deterrence was not determined by any arms race which they had with their rivals but by their respective notions of what was adequate for their security in the circumstances in which they were placed and what would give them a really effective voice in the world affairs. Herald Macmillan, the former British Prime Minister had said that Britain acquired nuclear weapons to “eat at the high table”. President de Gaulle’s ambition was to have an adequate forc-ed-frappe (in short a deterrence) for the glory and
prestige to France. China has only about 600 warheads as opposed to thousands in the arsenals of Russia and USA. This country has less than 20 long-range missiles (ICBM) which can strike at targets in the United States. Given these facts, there is no reason why India cannot have a nuclear deterrence of the size determined by the threat to its security and by other circumstances, including the economic burden that has to be borne.

It is also not necessary for a country to have a second strike capability against its superior rival. China has in its arsenal a few missiles that can hit targets in the United States but they do not constitute a second strike capability against the United States, nor against the Soviet Union. Similarly, it is not necessary for India to have a second strike capability against China. Therefore, it is not necessary for India to enter into a nuclear arms race against China. And Pakistan has the same compulsion as India for not getting involved in a nuclear arms race.28

India decided not to be a party to the CTBT in 1996 because it thought that it might have to carry out a few nuclear weapon tests in the interest of its security. This principal purpose seems to have been served with the recent tests and the determination by Indian scientists that this is all that is needed to develop a minimum nuclear deterrence. India’s second objection was that the CTBTs “Entry into Force” clause was an infringement of her sovereignty in that it obliged India to sign a treaty which she had publicly declared to be repugnant to our security interests. But once India decide to sign the treaty, this objection will no longer
remain valid. India’s third objection was the CTBT was discriminatory because it permitted certain tests – laboratory and sub critical—which only a few nuclear weapons states were capable of carrying out. But now that India’s ability to conduct laboratory tests has been convincingly demonstrated and Indian scientists have claimed that they can carry out sub critical tests if needed, the treaty is no longer discriminatory against us.29

One of the reasons the US and other nuclear powers are wary of India on the nuclear front, however, is that it was not party to any aspect of the international non-proliferation regime until 1997, when it signed the Chemical Weapons Convention. Among the significant treaties it has not signed are the nuclear Non-Proliferation Treaty and the Comprehensive Test Ban Treaty. Thus India has a very limited safeguards agreement with the IAEA, which does not cover any of its nuclear research facilities. That is why after its test in 1998 the US was hard put to find any multilateral mechanism through which to sanction India.30

India’s biggest regret, in the present controversy, however, is the awkward timing of the accusation, which virtually seeks to put Indian scientists at par with Pakistan’s rogue scientists. India is going all out to ensure that the NSSP initiative is invested with some real substance and at least the US department of Commerce has claimed that things are going very well in bilateral relations. When an Indian journalist wrote in editorial, claiming that the NSSP was devoid of any real substance. Matthew S. Borman, deputy assistant secretary for export
administration, US Department of Commerce, wrote a lengthy rejoinder to counter the claim.

On its part, India is determined to persuade the US that its project of spreading democracy requires that it develop special ties with democratic countries and shuns dictatorships such as Pakistan, even if it needs to use them for a while in some project. The US, in according “major non-NATO ally” status to Pakistan recently, has drawn criticism in India.

The recent and the first meeting between Indian Prime Minister Manmohan Singh and Bush had also appeared to have gone well. The new United Progressive Alliance government is in any case keen to demonstrate that it has been able to maintain the forward momentum created by the previous government in developing close strategic ties with the US despite the sanctions imposed after the 1998 Pokhran II nuclear tests.

New Delhi is hoping that the present controversy will soon blow away and the countries will be able to get down to business as usual in the shortest possible time. But there is also apprehension that the inexplicable and totally unfounded accusation may be a precursor to reimposition or further tightening of the sanctions regime promulgated after the nuclear tests of 1998. These sanctions had been removed primarily because they had to be removed in the case of Pakistan, which became a close US ally after September 11, and the US could not be seen to be treating the two newly proclaimed nuclear weapons states differently. In any case, the US has persisted with treating India and Pakistan at per with each other, a hyphen that Indian has long resented.\footnote{31}
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CHAPTER - IV

Pakistan’s Nuclear Policy
Zulfiqar Ali Bhutto was the founder of Pakistan’s Nuclear Program, initially as Minister for Fuel, Power and Natural Resources, and later as President and Prime Minister; which earned him to give the title by his own people as Quaid-e-Awam (Leder of the People). Pakistan’s nuclear program was launched in earnest shortly after the loss of East Pakistan in the 1971 war with India, when Bhutto initiated a program to develop nuclear weapons with a meeting of physicists and engineers at Multan in January 1972. In 1974 India successfully tested a nuclear “device”. Momentum for the program was provided by this Indian nuclear test operation, called the ‘Smiling Buddha’. Bhutto reacted strongly to this test and said Pakistan must develop its own “nuclear capability”. Regarding the program he said:

"We will defend our country using any means necessary and build a nuclear capability second to none. We will eat grass for 1000 years, if we have to, but we will get there."

In fact, Pakistan’s emphasis on opacity and its rejection of a no-first use doctrine reflects its concerns about conventional inferiority vis-à-vis India. Nuclear opacity and nuclear weapons capability are regarded as means of deterring conventional war. Senior officials have implied that Pakistan could resort to nuclear use in the event of an Indian attack, conventional or nuclear, on
its territory. However, Pakistan refuses to officially define its nuclear threshold even as it rejects nuclear first use. While a nuclear no first use policy was a luxury for Pakistan, a participant pointed out India would likely reverse its no-first use posture during a military conflict. In any case India has already revised that policy to cover other unconventional attacks by weapons of mass destruction on Indian troops within or outside Indian territory.²

Pakistan’s nuclear program is based primarily on highly enriched uranium (HEU), which is produced at the A.Q. Khan Research Laboratory at Kahuta, a gas centrifuge uranium enrichment facility. The Kahuta facility has been in use since the early 1980s. By the early 1990s, Kahuta had an estimated 3,000 centrifuges in operation, and Pakistan continued its pursuit expanded uranium enrichment capabilities.³

In the 1990s Pakistan began to pursue plutonium production capabilities. With Chinese assistance, Pakistan built the 40 MWt (megawatt thermal) Khusab research reactor at Joharabad, and in April 1998, Pakistan announced that the reactor was operational. According to public statement made by US officials, this un safeguarded heavy water reactor can produce up to 8 to 10 kilograms of plutonium per year. According the Wikipedia’s plutonium article this is sufficient for one nuclear weapon. The reactor could also produce tritium if it were loaded with lithium-6, although this is unnecessary for weapons purposes because modern nuclear weapon designs use Li6 directly. According to J. Cirincione of Carnegie Endowment for International Peace,
Khusab's plutonium production capacity could allow Pakistan to develop lighter nuclear warheads that warheads that would be easier to deliver with ballistic missile.

Plutonium separation reportedly takes place at the New Labs reprocessing plant next to Pakistan's Institute of Nuclear Science and Technology (Pinstech) in Rawalpindi and at the larger Chasma nuclear power plant, neither of which are subject to IAEA inspection.4

The Natural Resources Defense Council (NRDC) estimates that Pakistan has built 24-48 HEU-based nuclear warheads with HEU reserves for 30-52 additional warheads. The US Navy Center for Contemporary Conflict that Pakistan possesses between a low of 35 and a high off 95 nuclear warheads, with a median of 60.

Pakistan's nuclear warheads are based on an implosion design that uses a solid core of highly enriched uranium and requires an estimated 15-20kg of material per warhead. The NRDC also thinks that Pakistan has also produced a small but unknown quantity of weapons trade plutonium, which is sufficient for an estimated 3-5 nuclear weapons per annum based on the estimation of 5kg of plutonium per warhead. Pakistan also claims that the fissile cores are stored separately from the other non-nuclear explosive packages, which Islamabad says, can be put together rather quickly.5

In the past, the People's Republic of China played a major role in the development of Pakistan's nuclear infrastructure, especially when increasingly stringent export controls in western
countries made it difficult for Pakistan to acquire materials and technology elsewhere. According to a 2001 Department of Defense report, China has supplied Pakistan with nuclear materials and expertise and has provided critical assistance in the construction of Pakistan’s nuclear facilities.\(^6\)

As a result of the meeting, the program was initiated by Bhutto himself. He enacted a long-standing personal agenda executed at the earliest opportunity he had. A proper study of this program thus must trace the history of Zulfiqar Ali Bhutto himself, and his developing interest in the nuclear option for Pakistan.

By that time Pakistan had already initiated a national nuclear program a relatively early date, though later than India. The Pakistan Atomic Energy Commission (PAEC) was set up in 1956 so that it could participate in the Atoms for Peace program announced by the Eisenhower administration, but development was slow in its early years.\(^7\)

Things began to pick up in 1960. The nuclear program acquired a new patron- the Minister of Mineral and Natural Resources, named Zulfikar Ali Bhutto. In 1960 Dr. Ishrat H. Usmani was appointed Chairman of the PAEC. Usmani would be responsible for setting in motion many of the critical programs and institutions that would later give Pakistan nuclear weapons. Usmani started Pinstech (full name variously given as the Pakistan Institute of Nuclear Sciences and Technology, and the Pakistan Institute of Science and Technology) and the Karachi Nuclear Power Point. One of Usmani’s most momentous achievement is said to be the training program under which
brilliant young Pakistanis were selected and sent for training abroad. Between 1960 and 1967 some six hundred were selected of whom 106 eventually returned with doctorate degrees. 

Also in 1960 the US gave Pakistan a $350,000 grant to help prepare Pakistan for its first research reactor which the United States agreed to supply two years later. This reactor, a 5 MW high-water research reactor known as the Pakistan Atomic Research Reactor (PARR-I), began operating in 1965 at Pinstech in Nilore.

In 1963 Bhutto became Foreign Minister, carrying his interest in nuclear capabilities into office with him. He watched with growing concern as China moved closer to nuclear capability, and in response India’s domestic rhetoric on the subject grew more bellicose.

Bhutto elaborated his views on anti-colonialism and the future of Pakistan in his book The Myth of Independence, finished in 1967 and published in 1969. One of the these of the book was the necessity for Pakistan to acquire nuclear weapons to be able to stand against the industrialized states, and against a nuclear armed India.

But Bhutto did not have the means to put his views into practice then. That would have to wait until he became Prime Minister, which he became on 20 December 1971, 3 days after the end of the Bangladesh War.

The 1971 war had been a crushing defeat for Pakistan, which had lost more than half its population. Despite the close
relationship with China that had developed over the previous decade, Chinese support for Pakistan during the most extreme crisis of Pakistan’s existence came to nought. China failed to provide any significant assistance for Pakistan, such as applying pressure on India’s border.

Bhutto had been concerned with India’s pursuit of the “nuclear option” for several years, and this was the first opportunity he had to put his declaration of 1965 into effect. A key motivation for this program was concern over India’s well known progress toward having its own nuclear option, and the public declarations by key leaders in India that they must acquire nuclear arms. Years later, after India’s 1974 nuclear test, when Pakistan’s nuclear program became public knowledge persistent attempts were made to paint the weapons program as a response to the test. It was a response to India’s developing nuclear challenge, but not to the Pokhran test per se. To the extent that it was a response to a specific event, it was a response to India’s conventional arms superiority as manifested in its victory during the Bangladesh War.

The Bangladesh War also helped create a relationship between Pakistan and the Democratic People’s Republic of Korea (DPRK) or “North Korea” which would later help Pakistan considerably in acquiring delivery systems for its nuclear arsenal in the 90s.9

During mid-1971 Bhutto approached North Korea in an effort to obtain critically needed weapons. An agreement was quickly reached and on 18 September 1971 the first arms shipment
from the DPRK arrived in Karachi. On 9 November 1972, only one day after withdrawing from SEATO, Pakistan announced that it was establishing formal diplomatic relations with the DPRK. Military assistance to Pakistan continued through the later 1970s, with the DPRK providing artillery, multiple rocket launchers, ammunition, and a variety of spare parts.

India's first nuclear test, known variously as “Smiling Budha”, the PNE (for “Peaceful Nuclear Explosive”), and most recently Pokhran-I, occurred on 18 May 1974. It provided an additional stimulus to the Pakistani weapons program, which had made little headway up to that point. Bhutto increased the funding for the program after the Indian test, but since arrangements to secure lavish funding had been underway for more than a year, this would have occurred anyway. One consequence of test was ironically to hamper Pakistan’s program as the test sharply escalated international attention to proliferation and led to increased restrictions on nuclear exports to all nations, not just India. Over the next three years, these restrictions would change the entire course of the Pakistani nuclear program. ¹⁰

Pakistani work on weapons design began ever before the start of work on uranium enrichment, under the auspices of the PAEC. In March 1974, Munir Ahmad Khan called a meeting to initiate work on an atomic bomb. Among those attending the meeting were of Hafeez Qureshi, head of the Radiation and Isotope Applications Division (RIAD) at Pinstech, Dr. Abdus Salam, then Adviser for Science and Technology to the Government of Pakistan and Dr. Riaz-ud-Din, Member (Technical), PAEC. The PAEC Chairman informed Qureshi that
he was to work on a project of national importance with another expert, Dr. Zaman Sheikh, then working with the Defence Science and Technology Organization (DESTO). The word “bomb” was never used in the meeting but Qureshi exactly understood the objective. Their task would be to develop the design of a weapons implosion system.\textsuperscript{11}

Pakistan has laid down scenarios under which it may use nuclear weapons as a last resort – if its survival is threatened by India not only military but by strangling its economy or stopping access to shared water resources, says a new report by Italian nuclear physicists who visited the country recently.\textsuperscript{12}

Pakistan has the capability to make both plutonium and highly enriched uranium (HEU), or “fissile materials,” for nuclear weapons. Its main uranium enrichment facilities are at the A.Q. Khan Research Laboratories at Kahuta. Pakistan also has another newer enrichment facility near Wah that the US government calls the Godwal uranium enrichment plant. It may have other production scale facilities. Pakistan also operates smaller enrichment facilities, including the Sihala and Golra ulracen.

Pakistan possesses a capability to make weapons. Pakistan operates the Khushab reactor, which is estimated to generate about 50 megawatts of power, large enough to produce plutonium for few nuclear weapons per year. Separation of the plutonium is reported to occur at New Labs at Rawalpindi, located near Islamabad. This plant, next to the Pakistan Institute
of Nuclear Science and Technology (Pinestech), is large enough to handle all the irradiated fuel from the Khushab reactor.\textsuperscript{13}

General Zia-ul-Haq rose to power in the 1977 military coup. It was during his 11 year tenure that Pakistan became a nuclear power and defined a coherent nuclear strategy.

There was a widespread recognition that nuclear were Pakistan’s only viable deterrence against an Indian conventional onslaught. Some strategists even urged the recapture of Kashmir under a nuclear umbrella. Zia became committed to the nuclear option as a last resort instrument to save Pakistan “with whole world against him,” an argument made by Agha Shahi, then the Foreign Minister.

Moreover, Zia saw in the acquisition of nuclear weapons a key instrument to break Pakistan’s isolation and transform it into the leader of the rejuvenating Muslim World. In July 1978 he outlined his perception: “China, India, the USSR, and Israel in the Middle East posses the atomic arm. No Muslim country has any. If Pakistan had such a weapons, it would reinforce the power of the Muslim World.”\textsuperscript{14}

Pakistan had nuclear weapons potential in 1987, and operational nuclear weapons since 1988. At first, Pakistan stuck with Zia’s doctrine of relying on nuclear weapons as the last resort key to Pakistan’s survival against India and the USSR. However, at the same time, Zia-ul-Haq’s pan-Islamic world view was expressed in the willingness to facilitate and expedite other Islamic, primarily Iran’s, nuclear weapons program, but not at the expense of, or as part of, Pakistan’s own strategic weapons
programs. It was through its close cooperation with Iran, that Pakistan also assisted other radical states including Libya and North Korea.

Soon afterwards, Pakistan began a game of brinkmanship through the escalation of border clashes in the Siachen Glacier area and in Kashmir. Pakistani active support for the Islamist insurgency in Kashmir increased markedly. The near-war appearance of a major Indian military exercise not far from the Pakistani border startled and Pakistani High Command, reminding them of the possibility of massive Indian reaction to the Pakistani provocations. At the same time, the border clashes and the insertion of terrorists into Indian Kashmir continued to escalate.

Islamabad then decided to prevent an Indian retaliation by invoking the nuclear card. As tension grew and war seemed inevitable, Pakistan hastily assembled at least one nuclear weapons during the nose-to-nose confrontation with India in 1990. This led to a hasty intervention by the US and other Western powers, pressuring both New Delhi and Islamabad not to escalate their confrontation. The new Pakistani nuclear strategy proved successful. Thus, the crisis of 1990 was a watershed event in Pakistan’s national strategy. Nuclear weapons were no longer considered merely a trip-wire of last resort in case of a major invasion of the country, nuclear weapons now became a key to Islamabad’s assertive strategy of escalation of the struggle in Kashmir under a nuclear umbrella restraining Indian retaliation.
In 1991, Islamabad considered the New World Order advocated by the US, and especially in the call for non-proliferation, a strategic threat to its independence. “The New World Order does not allow any country in the Third World except the American surrogates to possess nuclear weapons. “Fully aware that no single country can confront the US on its own, Islamabad stressed the growing significance of nuclear and military cooperation with other radicals as a profound issues of confrontation with the US. Islamabad acknowledged that “the People’s Republic of China and North Korea have been… supplying Iran, Pakistan and other Muslim countries with medium-range missiles and nuclear technology for peaceful purpose.” This cooperation now served as the source of strength for Islamabad defiance against US pressures, for any alternative would be detrimental to the future of Islam. “If Pakistan surrenders before the Americans now with respect to the nuclear programme, there will be no limit for such a surrender; because the Americans endeavor to demolish Pakistan’s military power and make her a banana republic so that the Muslim World should be enslaved by the US-imposed world order.”

It was in the context of strategic perception that the Pakistani military nuclear capabilities were finally admitted officially. On 21 October 1991, Pakistan, for long a known yet not acknowledged nuclear power, crossed the line and created a precedent. In a Karachi meeting, Dr. Abdul Qadeer Khan, the father of the Pakistani bomb, officially acknowledged that Pakistan was a nuclear power. “It is a fact that Pakistan has become a nuclear power and is at present concentrating on manufacturing
sophisticated arms to fulfill its requirements, “Dr. Khan stated
Subsequently, the nuclear factor has become a clear and critical
factor in the Pakistani national strategy, especially vis-à-vis India
and the US.\footnote{16}

Despite several halfhearted and not convincing denials by senior
Pakistani officials that Pakistan has nuclear weapons, in early
1995 the extent of the Pakistani military nuclear effort and
capabilities were being clarified. By now, 1994-95, Pakistan had
between 15 and 25 nuclear weapons, each about 20kt strong.
Some of these weapons are fully operational and the rest stored
in parts. Some of these disassembled nuclear weapons would
require only several hours of assembly to become fully
operational.

These weapons are small enough for delivery by Pakistan’s
known platforms – F-16 fighter-bombers and M-11 ballistic
missile. The main storage and maintenance site of the Pakistani
nuclear weapons, particularly the weapons at a ‘screwdriver
level.’ Is located at the ordnance complex in Wah—a top secret
and exceptionally guarded facility, Pakistan’s final assembly and
arming, forward operational storage, and weapons loading
installations and located in the Chagai air Base. The Pakistanis
also maintain a forward weapons’ storage site at Sargodha Air
Base or air deliverable weapons. However, it is not clear
whether operational weapons are being kept there permanently.

Further more, the Pakistani weapons production infrastructure
reached maturity. In early 1995, the annual production capacity
was estimated at between six and twelve nuclear weapons, each about 20 kt strong.¹⁷

Further more, Pakistan is running an elaborate program of acquisition of nuclear materials and technologies via the Russian, especially Chechen, Mafiya. Presently, these widespread acquisition efforts from western and eastern Europe, as well as the former Soviet Union, already, contribute to shortcuts, acceleration, and expediting of the emergence of a second generation of Pakistani nuclear weapons. Their main contribution, however, is in the development of a solid production capacity for the Pakistani advanced nuclear weapons in the next decade.

Meanwhile, the nuclear strategy of Mrs. Bhutto’s Pakistan was being refined and better defined. Islamabad was now convinced that only nuclear deterrence can prevent an Indian offensive from defeating the Pakistani Army. In June 1995, sources close to Mrs. Bhutto stressed the centrality of the nuclear component to Pakistan’s overall war-fighting capabilities: “Only in the presence of a nuclear deterrent can the Pakistani Army feel strong and stable. Confronting India with conventional weapons, especially when these weapons have been provided by a superpower like the United States, would not only be difficult, but would be tantamount to inviting danger as well.”

Presently, Pakistan’s highest priority is the acquisition of the latest aircraft the PRC can offer. The first program is the swift acquisition of FC-1 fighters as replacement not only or the ageing F-6s and F-7s, but also for the F-16s in fighter missions.
A joint Chinese-Pakistani program, the FC-1 is primarily a high performance fighter. Islamabad believes that having large numbers of FC-1s in service will free the remaining F-16s deep strike missions, including with nuclear weapons should the need arise. The FC-1 is expected to become operational before 2000.  

Nuclear optimists supports opacity on the grounds that declared thresholds and redlines undermine operational flexibility and increase nuclear risks during crises. Proponents of opacity also argued that transparency only works in the absence of conflict and with at least a semblance of communications between nuclear adversaries. Absent these preconditions, as in the case of India and Pakistan, transparency can be counterproductive. In any case, nuclear doctrines are often misleading and at variance with operational plans. By keeping deterrence vague and by avoiding explication of red lines, Pakistan can also avoid a nuclear arms race with India and keep its weapons un-deployed. This nuclear restraint, reflected in Pakistan’s policy of minimum nuclear deterrence, has helped to buttress nuclear crisis stability in South Asia.  

In fact, Pakistan’s emphasis on opacity and its rejection of a no-first use doctrine reflects its concerns about conventional inferiority vis-à-vis India. Nuclear opacity and nuclear weapons capability are regarded as means of deterring conventional war. Senior official have implied that Pakistan could resort to nuclear use in the event on an Indian attack, conventional or nuclear, on its territory. However, Pakistan refuses to officially define its nuclear threshold even as it rejects nuclear first use. While a
nuclear no first use policy was a luxury for Pakistan, a participant pointed out India would likely reverse its no-first use posture during a military conflict. In any case India has already revised that policy to cover other unconventional attacks by weapons of mass destruction on Indian troops within or outside Indian territory.²⁰

Pakistan does not abide by a no-first use doctrine, as evidenced by President Pervez Musharraf's statement in May, 2002. Musharraf that and Pakistan did not want a conflict with India but that if it came to war between the nuclear armed rivals, he would “respond with full might.” These statements were interpreted to mean that if pressed by an overwhelming conventional attack from India, Pakistan might use its nuclear weapons. Aside from these public declarations, Pakistan has not issued an official nuclear doctrine. There has also been criticism of Pakistan's nuclear doctrine which gives rise to ambiguity and that they were too eager to use the nuclear option in the Kargil War when the Pakistan Army was facing a stern challenge due to loss of posts and personnel.²¹

The organization authorized to make decisions about Pakistan’s nuclear posturing in the National Command Authority (NCA) established in February 2000. The NCA is composed of two committees that advise President Musharraf on the development and employment of nuclear weapons; it is also responsible for wartime command and control. In 2001, Pakistan further consolidated its nuclear infrastructure by placing the Khan Research Laboratories and the Pakistan Atomic Research
Concerns were also voiced that the post-11 September international environment has adversely affected nuclear deterrence in South Asia, both in terms of the evolution of terrorism and the ways in which India reacts and mobilizes its forces. Regardless of divergent assessments of nuclear deterrence stability, there was consensus that India-Pakistan crises could keep on recurring because of the linkage between political disputes and military strategies. Divergent Indian and Pakistani policies towards Kashmir and attempts to challenge the status quo increase the risk of war. Nuclear capability is here to stay in South Asia, said a participant, but its is embedded in and must be detached from India and Pakistan’s political relationship. If Pakistan continues with its efforts to compel India to negotiate on Kashmir through sub-conventional warfare, increasing costs might compel India to respond militarily. Indian and Pakistani attitudes towards nuclear weapons are maturing, noted another, but they don’t have the luxury of a long maturation process to ensure that nuclear weapons are never used. A more optimistic participant believed that nuclear weapons capabilities might have made conflict resolution more difficult, but nuclear deterrence has facilitated conflict prevention.

Indian and Pakistani officials have repeatedly assured the international community that their nuclear assets are not threatened because of secure command and control systems and foolproof safeguards of fissile materials and warheads.
While many participants expressed concerns about accidental or inadvertent use, they also believed that existing nuclear safeguards and Material Protection Control and Accounting (MPC and A) could adequately protect India and Pakistan’s nuclear assets. Hence, they resisted suggestions that Pakistan and India adopt a broader, cooperative approach to threat reduction. Apart from cooperation in best practices, these suggestions included a bilateral India-Pakistan dialogue on nuclear risk reduction; utilizing IAEA practices in civilian facilities under full-scope safeguards and transferring that knowledge to military installations; learning from precedents, particularly in the Russian-US context; and benefiting from non-intrusive measures such as transfers of security technologies through turn-key kits, as in the case of the US-Russian relationship. US supplied kits are installed by Russia, eliminating the need for physical intrusion by the US government, companies and experts. Some exchanges of best safeguard practices are already underway with the US. These include track two activities such as visits to US facilities like the Cooperative Monitoring Center at Sandia National Laboratories.24

Some participants defended the robustness of Pakistani command and control. Since a National Command and Control authority was well in place, they argued, the dangers of accidental, unauthorized, or inadvertent use were minimal. However, even nuclear optimists admitted that false warning and panic launchings could pose a threat, particularly at time of crises. Deterrence stability will be ensured, said participant, if both sides are reasonably sure that their nuclear assets are
survivable; if they do not use them as instruments of coercion; and if they do not panic in case of a false alarm. The importance of non-deployment, knowledge of mutual capabilities and effective signaling of intentions, particularly during crises, were added to this list of nuclear ‘dos’. Others, however, warned that poor intelligence and weak, insecure command and control structures and centralized command increased pressures for dispersal and delegation to commanders in the field, and hence heightened risks of unauthorized or inadvertent use. While there was unanimity about the importance of good intelligence to prevent war by miscalculation, a participant advocated a technical dialogue between India and Pakistan warning about the poor quality of intelligence.  

India and Pakistan were warned that their nuclear weapons do not ensure security since they have little grounds for confidence in their first strike capability; they were reminded of the nuclear risks that the United States and the Soviet Union confronted during the height of the Cold War, and that the US and Russia still face such risks despite technologically superior nuclear risk reduction mechanisms and procedures. The importance of pursuing the goal of nuclear disarmament through Article VI of the NPT was also emphasized in response to a comment that a South Asian nuclear rollback was not in the cards. An alternative proposal to the NPT regime was presented. Under the aegis of the UN Security Council, all nuclear weapons states would commit themselves to a time-bound process of nuclear disarmament; non-nuclear states would not be permitted to acquire nuclear weapons; failure to comply would result in
inspections; and a failure to comply would be countered by UN Security Council authorized use of force.
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Conclusion
CONCLUSION

“We live in an age of nuclear giants and ethical infants. We lie in a world that has achieved brilliance without wisdom, power without conscience. We’ve unlocked the mysteries of the atom and forgotten the lessons of the Sermon on the Mount. We know more about war than we know about peace, more about killing than we know about living.”

Omar Bradley

Nuclear deterrence overwhelmingly dominated the Cold War calculus of international security. Nuclear weapons dictated a requirement for instant readiness for war fighting that continues to this day. Even though Presidents Ronald Reagan and Mikhail Gorbachev agreed that a nuclear war cannot be won and must never be fought, thousands of nuclear weapons remain on hair-trigger alert.

Despite their best efforts the supporters of the concept of nuclear deterrence cannot prove that nuclear weapons preserved the peace in Europe or elsewhere in the world. What can be claimed though is that they played a supporting role in preserving the peace. Nor can supporters of deterrence prove that the many crises during the Cold War were resolved or contained primarily by the threat of nuclear war. The history of the Cold War is replete with compelling evidence of the pernicious effects of the open-ended quest for nuclear
deterrence, as shown by Professors Janice Stein and Richard Ned Lebow in a study entitled We All Lost the Cold War.

In today’s post-Cold War World, defining national security merely, or primarily, in military terms conveys a false sense of reality. Nearly half a century of Cold War fashioned the issue of security into powerful conventional simplifications that are no longer valid. Unfortunately, many of these traditional and outmoded concepts retain great currency amongst certain security analysts and defense planners, and the dominance of military and strategic considerations in the conduct of international relations endures as a legacy of the Cold War. While stability was and continues correctly to be of prime strategic importance in a transforming world its pursuit by some influential countries places exaggerated emphasis upon nuclear weapons and military concepts that are presumed still to lie at its core.

In a post-Cold War world, the political value of nuclear weapons has declined markedly rendering them, more a liability than an asset. Despite the changed political climate and the window of opportunity to restructure international relations away from reliance on nuclear weapons, many influential thinkers and military planners in the United States, NATO, the Russian Federation and in some other countries still believe in the integrity of nuclear deterrence—i.e. that stability and security would necessarily be jeopardized in the absence of nuclear deterrence. Such deeply embedded beliefs are extraordinary resistant to new thinking or to change. They also reflect the reluctance of national security planners in the NWS to conceive of a security architecture that does not rely on nuclear arms.
Nuclear weapons are held by a handful of states which insist that these weapons provide unique security benefits, and yet reserve uniquely to themselves the right to own them. This situation is highly discriminatory and thus unstable, it cannot be sustained. The possession of nuclear weapons by some states is a constant stimulus to other states to acquire them... a central reality is that nuclear weapons diminish the security of all states.


But in the aftermath of the Cold War several factors intervened to dampen hopes and bring into question the resolve to achieve
nuclear reductions and to implement fully a number of negotiated arms control agreements. The bilateral START I process has been at a standstill, entry into force of the CTBT remains at best a remote possibility, testing and deployment of missile defence systems threaten the integrity of the Anti-Ballistic Missile Treaty.²

Attempts have been made to make peaceful uses of atomic and nuclear energy. For this purpose Nuclear materials declared surplus to military requirements by the USA and Russia are now being converted into fuel for commercial nuclear reactors. The main material is highly enriched uranium (HEU), containing at least 20% uranium-235 (U-235) and usually about 90% U-235. HEU can be blended down with uranium containing low levels of U-235 to produce low enriched uranium (LEU), typically less than 5% U-235, fuel for power reactors. It is blended with depleted uranium (mostly U-238), natural uranium (0.7% U-235), or partially-enriched uranium.

Highly-enriched uranium in US and Russian weapons and other military stockpiles amounts to about 2000 tonnes, equivalent to about twelve times annual world mine production.

World stockpiles of weapons-grade plutonium are reported to be some 260 tonnes, which if used in mixed oxide fuel in conventional reactors would be equivalent to a little over one year’s world uranium production. Military plutonium can blended with uranium oxide to form mixed oxide (MOX) fuel.

After LEU or MOX is burned in power reactors, the spent fuel is not suitable for weapons manufacture.
Commitments by the US and Russia to convert nuclear weapons into fuel for electricity production is known as the Megatons to Megawatts program.

Surplus weapons-grade HEU resulting from the various disarmament agreements led in 1993 to an agreement between the US and Russia governments. Under this Russia is to convert 500 tonnes of HEU from warheads and military stockpiles (equivalent to around 20,000 bombs) to LEU to be brought by the USA for use in civil nuclear reactors.

In the short term most US military HEU is likely to be blended down to 20% U-235, then stored. In this form it is not usable for weapons.\(^3\)

Disarmament will also give rise to some 150-200 tonnes of weapons-grade plutonium (Pu). Weapons-grade plutonium has over 93% of the fissile isotope, Pu-239, and can be used, like reactor-grade Pu, in fuel for electricity production. Options for its disposal include:

- Immobilization with high-level waste-treating plutonium as waste,
- Fabrication with uranium oxide as MOX fuel for burning in existing reactors,
- Fuelling fast-neutron reactors.

At the NPTREC, Vice-President Al Gore, and later at the September 1996 signing of the CTBT, President Bill Clinton committed the United States to promote non-proliferation and disarmament ensures leading to the eventual prohibition of all
nuclear weapons. The leaders of the other NWS made similar promises. On living up to these commitments, however, the record is mixed and there is a crying need for political leadership.

Rational humans recognize that nuclear weapons are not sensible as they have no utility although they have the capacity to destroy civilization. Recognizing this, the Pugwash Conferences on Science and World Affairs, founded in 1957 by scientists who sought to build bridges between East and West and eventually to outlaw nuclear weapons, believe that if humankind acts rationally, sooner or later it will abolish nuclear weapons. Professor Jozef Rotblant, 1995, noble prize winner and President of Pugwash, is one of the distinguished scientist who believed that because of proliferation risks, mankind should give up nuclear power altogether.

The evils of nuclear proliferation were visible in Europe, besides the two super powers. That’s why Europe was the center of world politics throughout the cold war period. The post cold war period witnessed the shift of world politics from Europe to Asia, specially South Asia. Because the Asia-Pacific is a region where increase in defense spending in real terms and the number and quality of the weapons being acquired have made it the fastest growing arms market in the world. It is also a region where security analysts have fundamental disagreements over the implications of the arms build up, where the level of transparency in military expenditures is so low that it is often impossible to relate the procurement process to a perceived set of military needs, and where all of this is taking place
against a backdrop of uncertainty, vastly increased geo-strategic complexity and simmering disputes over sovereignty, territory and control of off shore resources. At the same time, it is also a period of relative calm and of increasing national and regional confidence. In short, it is hard to imagine how the circumstances could be more propitious for the introduction of a little substantive “bite” into official efforts to strengthen peace and stability in the region.

In the wake of the short-lived burst of multilateral mania that marked the end of the cold war, completely unrealistic demands were made of the United Nations by an international community unprepared to provide the material and political support necessary to sustain far more modest objectives. Now that the rose coloured glasses are gone, and with them the illusion that the United Nations can do everything there is a tendency to conclude that the United Nations can do nothing. A more measured analyses suggests a trend towards a new kind of burden sharing in which regional organization increasingly seek to equip themselves to find practical, workable solutions to regional problems which might become crisis requiring broader involvement if left unaddressed.6

The may 1998 South Asian explosions marked the shift of world attention to this region, which comprises mostly, the states who had newly gained independence from the colonial power.

The nuclear weapons states believe that they have a very great stake in the world nuclear order that they have built after more than half a century of determined efforts. They have
accomplished this task on the one hand by developing new nuclear weapon systems, by building up massive arsenals of such weapons and by devising doctrines to justify their retention and use, and, on the other hand, by trying to convince the rest of the world that these weapons are safe in their hand but highly dangerous in the hand of other countries. They have coined and given wide currency to such phrases as “rogue” countries and “delinquent” nations to characterize those countries which aspire or attempt to acquire weapons of mass destruction. 

For the first time since the end of the cold war, the war against Iraq, fought at least officially over the possession of weapons of mass destruction (WMD); the standoff between India and Pakistan over Kashmir; the unresolved showdown on the Korean peninsula; and the efforts of transnational terrorist networks to manufacture or acquire such weapons – together, these dangerous crises mark the new nuclear age that has succeeded the US-Soviet Union confrontation of the post 1945 era.

The response of the United States to the new strategic environment has been formulated in two recent White House papers. The first paper, concerning the National Security Strategy of the United States of America (September 2002), marked the adoption of the pre-emptive strike doctrine: ‘While the United States will constantly strive to enlist the support of the international community, we will not hesitate to act alone, if necessary, to exercise our right of self-defense by acting pre-emptively against such terrorists, to prevent them from doing harm against our people and our country.
The second paper, the National Strategy to Combat Weapons of Mass Destruction (December 2002), referred to the eventual recourse to a nuclear strategy: 'The United States will continue to make clear that it reserves the right to respond with overwhelming force— including through resort to all our options — to the use of WMD against the United States, our forces abroad, and friends and allies'. The same report makes clear that preemption does not replace deterrence. The question is, whether recourse to nuclear strategy would be lawful under these circumstances?

In 1996, the International Court of Justice (ICJ) responded to two requests for advisory opinions, the first by the World Health Organization (WHO) and the second by the UN General Assembly, concerning the legality of the threat or use of nuclear weapons. The Court decided that it had no jurisdiction to answer the first request and gave an ambiguous answer to the second.

The Court’s opinion to the UN General Assembly stressed that there existed no universal rule of international law specifically authorizing or prohibiting the use of nuclear weapons. It further stated that use, or threat of use, of nuclear weapons that contravenes the prohibition of the use of force and fails to meet all requirements of the right of self-defence is unlawful. The opinion also underlined that use of nuclear weapons should be compatible with international humanitarian law. So far, so predictable. The further conclusions were wholly unexpected.

In the last and fairly obscure part of the operative part of opinion, the Court stated that the threat or use of nuclear weapons
'would generally be contrary' to international humanitarian law; but 'in view of the current state of international law, and of the elements of fact at its disposal, the Court cannot conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defence, in which the very survival of a state would be at stake. 'After 104 paragraphs of detailed technical legal analysis, the cardinal standpoint of the ICJ is that international law cannot guide the states' conduct during a nuclear crisis.8

President Bush himself has admitted publicly that he doubts nuclear deterrence would work against what he rightly sees as the greatest threat to Americans: extremists armed with weapons of mass destruction.

That is why his administration has adopted a policy of "preventive counter-proliferation" by all military means, including nuclear weapons. The drawback is that, in addition to being a contradiction in terms, it greatly increases the risk of nuclear weapons use, because the most likely proliferators are least likely to be deterred.

For the foreseeable future, the type of pre-emptive war now entered into by the US and the UK deprives all forms of global arms control of credibility..

Once the Cold War nuclear confrontation between the USA and the Soviet Union was over, three major international treaties offered the promise of an end to nuclear arms proliferation – and even their eventual abolition. Two bilateral Strategic Arms Reduction Treaties (START) of 1992-93 were followed by the
extension of the multi-lateral Non-Proliferation Treaty (NPT) in 1995 and the Comprehensive Test Ban Treaty (CTBT) in 1996 (the latter still has to enter into force). Almost overnight, nuclear weapons lost their looming importance in the public eye. Consequently, a public debate on the role of nuclear weapons in foreign and security policy simply failed to occur.

The NPT entered into force in 1970, and remains the cornerstone of global control over the proliferation of nuclear weapons. All but three member countries of the United Nations have not signed it (Israel, India and Pakistan). But many are uncomfortable with the treaty’s ‘two class’ character, allowing some countries to keep their nuclear weapons while forbidding others to develop them. Perhaps we were lulled into a false sense of security when the Non-Proliferation Treaty (NPT) was extended in 1995.

Boutros Boutros-Ghali, then UN-General Secretary, spoke of his hopes for a more just and sensible way to control nuclear weapons, not only with regard to the actual warheads but also to their delivery systems, and dual-use technology. To be fully effective such controls, he said, would have to be balanced and fair; should not hinder the peaceful use of science and technology; and should not split the world into ‘haves’ and ‘have-nots’.

Controlling the spread of weapons of mass destruction is clearly dependent on designing and enforcing effective verification procedures for each of these treaties. If disarmament is to be taken seriously, effective monitoring and verification is essential.
This is as true for verification of post Cold War arms reductions as for ceasefire agreements.

For historic reasons, International Atomic Energy Agency (IAEA) inspections have traditionally concentrated on the amount of materials available to build nuclear weapons rather than an evaluation of the danger of proliferation from each country. This system used to mean that over the years more than half of the IAEA’s annual budget for routine inspections was spent in Germany, Japan and Canada, while countries in the Middle East or South Asia, for example, were less intensively inspected. However, this is changing. Since Iraq was found in violation of its NPT obligations, a strengthened system of safeguards has been progressively instituted, incorporating a new Additional Protocol to safeguard agreements. This will intensify verification. A program of integrated safeguards will attempt to rationalize them and put resources into the appropriate activities.

Before we rush too quickly to accuse so-called ‘rogue states’ we need to consider that numerous states have been involved in trading material as well as know-how with countries like Iraq, enabling Saddam Hussein to develop his nuclear, chemical and biological capabilities. The main exporters were not North Korea, Iran, Syria, Libya or Cuba but Germany, France, Russia, the UK and the US, Spain, South Africa, Brazil and China. As there was no monitoring of this trade, Iraq’s WMD program went unnoticed by the international community. The Nuclear Suppliers Group have long attempted to restrict the export of materials and technology to potential proliferators. But companies often
circumvent these attempts. Equipment is often genuinely dual use.

However, if the IAEA and the conventions, or any other organization on their behalf, were to register the trade in arms and weapons-related materials (UNMOVIC could surely supply a list of what should be categorized as such), similar program elsewhere in the world could be detected much earlier.

It is often argued that the proliferation of weapons of mass destruction is essentially a political problem. It is true that the struggle for power often drives proliferation, and that there is no reliable technical solution which ensures the total detection of weapon usable materials. It is also true that only measures in the political arena can end proliferation. But the scientific-technological nature of the root of the problem should not be overlooked. Only too often, scientific-technological developments influence the possibilities of political power, mostly irreversibly. In the long term, deciding what to do about WMD proliferation also necessitate decisions about path of scientific-technological advance.

The WMD proliferation problem will not be solved by short-term solutions. What is obvious is the need for a re-orientation of the technological determinants of our industrialized global culture. The civil-military ambivalence of many advanced research and development program needs to be addressed, and proposals for radically new research policies outlined which will safeguard against the commercial exploitation of weapons relevant technologies.
It seems this would only be workable if the current security paradigm of the western hemisphere was changed and deterrence replaced by cooperation. Only then is a long-term solution imaginable. Bearing in mind the political arena, with its many different players, their various ambitions, and the ongoing struggle for western domination.

The case of biological weapons is probably the most difficult arms control verification challenge of all. This is one reason why the ban on biological weapons contained in the 1972 Biological Weapons Convention (BWC) does not have a verification system. Normally a total ban on a weapons is cast in terms of the spectrum of banned activities, ranging from research and development through to deployment and use. In the case of biological weapons, several of the stages in the life cycle of the banned weapon are difficult to discern and therefore verify. The scientific data are often ambiguous. Attempts to verify the illicit research, development, production and stockpiling of biological weapon in the past have failed, in part because of these considerations.

These difficulties were among those that led the United States to conclude that it could not support any form of verification system for the BWC and that it should therefore block agreement on the draft protocol to the treaty that was due to be agreed in 2001. The US claimed that it feared that intrusive verification would lead to a loss of commercial propriety information by its highly competitive and lucrative biotechnology industry, and that its bio-defence program would be exposed to foreign espionage via
international on-site inspections and other monitoring and verification activities.

Among the South Asian countries, there are ‘good’ as well as ‘bad’ nukes. After the 1998 South Asian nuclear explosions, the official Indian nuclear dogma has maintained that India’s nuclear weapons are ‘good’ nukes, the welcome fruit of decade of self-reliant labor by Indian scientists and engineers and a symbol of India’s scientific and technological strength. Nuclear weaponization is presented as necessity for the protection of the geo-political interests of a great nation that has finally found the will to become a world class power.

On the other hand, Pakistan’s nuclear weapons were always ‘bad’, a technologically weak ‘nations’ upstart reaction to the legitimate ambitions of the regional super power. Worse still, Pakistan’s bomb were, technologically speaking, mostly stolen goods and, politically, the product of an undemocratic, military-rulled and theocratic state. Besides, Pakistan was recently under severe international pressure as the hidden story of Pakistan’s nuclear exports to Libya, Iran and North Korea has slowly emerged, and the father of Pakistani bomb was forced to confess to the illegal marketing of nuclear technology.

US approach in nuclear policy vis-a-vis India, from the days of the Strobe Talbott- Jaswant Singh talks to the present, little progress has been made in US approach towards India’s nuclear policy. For both India and Pakistan, sanctions for withdrawn for reasons relating to the post 9/11 ‘war on terror’ rather than any shift in the US nuclear policy.
Actually the demands on India for cooperation on the non-proliferation front should cause even more concern than they did earlier. In the post 9/11, after the announcement of the Proliferation Security Initiative (PSI) in mid-2003 by the US, cooperation in non-proliferation has an entirely new meaning. The Bush-Vajpayee statement describing India and the US as ‘partners in controlling the proliferation of the weapons of mass destruction and the means to deliver them’ needs to be parsed in the light of this new moves.

Pakistan also acquires a significant place in US policy of South Asia the US needs Gen. Musharraf for a variety of purposes—including the pursuit of its objectives in Afghanistan. While offering an exit from the corner that Gen. Musharraf finds himself in, Washington would like to extract as much as possible from the Pakistani leader on the nuclear question. That was the bargaining between Washington and Islamabad. It has been assumed that the US would want a full disclosure on the past proliferation activity of Dr Abdul Qadir Khan and the Pakistani establishment. That will be crucial in understanding the extent of the damage done by the onward proliferation from Pakistan.

It may be also possible that the US would also like a credible set of actions from Gen. Musharraf that no future proliferation would take place from Pakistan. The outcome of the US–Pakistan bargain would be determined by variety of political factors. But whatever may be the result of this deal-making, it would have important implications for India.
India, on the other hand, strictly adhere to and cooperate with the non-proliferation initiatives. India shares the objective of preventing the spread of nuclear weapons despite the fact that it has state outside the MPT.

India’s record on non-proliferation has been a responsible one and its nuclear policies and programs can not be equated with those of irresponsible states. That would one of the reasons that USA and India reached on an agreement on July 18, 2005 on nuclear matters. The agreement recognizes the India is a responsible state with advanced nuclear technology and that it should acquire the same benefits and advantages as other such states. India has, in turn, agreed as a reciprocal measures to identify and separate Civilian and Military nuclear facilities and programs in a phased manner and file a declaration regarding the civilian facilities with the IAEA and placed them voluntarily under its safeguards. The Indian government has the right to decide which facilities and programs it would like to identify as ‘civilian’ for the purpose of this agreement and therefore place under safeguards.

The US President Bush has agreed to work with the US congress to adjust the US laws and policies to achieve full civil nuclear energy cooperation with India, and to work with its friends and allies in the Nuclear Supplier Group to enable full civil nuclear energy cooperation and trade with India.

Besides, the Indo-US nuclear deal, the new post cold war US foreign policy owes much to “The Perfect for the New American Century” (PNAC), a Washington-based neo-conservative think
tank founded in 1997. PNAC was clear that the US must rule the world: “[the new world order] must have a secure foundation on unquestioned US military pre-eminence...The process of transformation is likely to be a long one, absent some catastrophic and catalyzing event like a new Pearl Harbor”. That Pearl Harbor like event came on 11 September 2001. After 9/11 there was no lack of spokesman for the American Empire. In unabashedly imperial language, Zbigniew Brzezinski, who initiated the anti-soviet jihad in Afghanistan, writes in his book The Grand Chessboard that the US should seek to “prevent collusion and maintain dependence among the vassals, keep tributaries pliant and protected, and to keep the barbarians from coming together”.

Ralph Peters, an officer responsible for conceptualizing future welfare in the office of the deputy chief of staff for intelligence, in his book New Glory made it clear that for Expanding America’s Global Supremacy, his country needs to fight:

“We have entered an age of constant conflict.

“We are entering a new American century, in which we will become still wealthier, culturally, more lethal, and increasingly powerful. We will excite hatreds without precedent.

“There will be no peace. At any given moment for the rest of our life times, there will be multiple conflicts in mutating forms around the globe. The de-facto role of the US armed forces will be to keep the world safe for our economy and open to our cultural assault. To those ends, we will do a fair amount of killing.”
Appendix
APPENDIX-A

Number of Nuclear Tests Conducted by Six Countries till Signature of CTBT

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<td><strong>45</strong></td>
<td><strong>1</strong></td>
<td><strong>2046</strong>*</td>
</tr>
<tr>
<td>(%age)</td>
<td>(50.34)</td>
<td>(34.94)</td>
<td>(2.2)</td>
<td>(10.27)</td>
<td>(2.2)</td>
<td>(0.05)</td>
<td>(100)</td>
</tr>
</tbody>
</table>

**Source:** Arms Control Association, Department of Energy National Resources, Defence Council, United States

- This figure does not include two nuclear detonated over Japanese cities, Hiroshima and Nagasaki, during World War II
APPENDIX - B
CHRONOLOGY OF EVENTS

1930s  Initial research on nuclear fission technology

1942  Manhattan Project starts

1943  Quebec Agreement signed

1945  First nuclear test by the USA Bombing on Hiroshima & Nagasaki Mc Mahon Bill/US Atomic Energy Act UN Atomic Energy Commission formed

1946  Baruch Plan Floated

1949  First nuclear test by the Soviet Union

1952  First nuclear test by the Great Britain

1953  Atoms for Peace proposal floated

1954  Hydrogen Bomb tests by the USA Nuclear test ban proposal by India

1957  International Atomic Energy Agency formed

1958  EURATOM treaty signed

1960  First nuclear test by France

1961  UN 18 Nations Disarmament Committee formed

1962  CTBT and LTBT proposed

1963  PTBT signed

1964  First nuclear test by PRC

1965  UNENCC resolutions
APPENDIX-C

Press Release by Pakistan Foreign Office Spokesman

Foreign Secretary's Statement on “India's Nuclear Doctrine: Implications for Regional and Global Peace and Security” at The Institute of Strategic Studies Islamabad 7-September 1999

Quantification of Indian Nuclear Deployment:

<table>
<thead>
<tr>
<th>Estimates*</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimates of Gen. Sudriji carried out (1985)</td>
<td>Rs. 7,000 crore ($17 billion)</td>
</tr>
<tr>
<td>Value at present day</td>
<td>Rs. 13,55 crore</td>
</tr>
<tr>
<td>Estimates of K. Sburamatiyam (1984) (Cost of 20x Prithi, 20x Agni, 60x warheads, deployment costs, command &amp; control system, safety measures)</td>
<td>Rs. 10,000 crore</td>
</tr>
<tr>
<td>Cost of Agni I &amp; II Missiles</td>
<td>Rs. 20-35 crores per</td>
</tr>
<tr>
<td>Cost of Prithvi Missiles</td>
<td>Rs. 8 crores per</td>
</tr>
<tr>
<td>Cost of one atomic weapons R &amp; D costs not included</td>
<td>Rs. 8 crores per</td>
</tr>
<tr>
<td>150 Weapons (60x Agni +40-60x Prithvi of air delivery + Command and Control + 3-4 Surveillance satellites + Communications &amp; Reconnaissance systems)</td>
<td>Rs. 2,000-3,000 crores</td>
</tr>
<tr>
<td>Costs of operating, maintenance, Training of personnel to keep the nuclear arsenal in, high state of alert</td>
<td>Rs. 2,000-3,000 crores</td>
</tr>
<tr>
<td>Total costs of minimum credible deterrence (cost of nuclear submarines not included)</td>
<td>Rs. 10,000 crores</td>
</tr>
<tr>
<td>Cost of 1 nuclear submarine (2-4 submarines required)</td>
<td>Rs. 4,000-5,000 crores</td>
</tr>
<tr>
<td>Annual cost of minimum credible deterrence (minimal posture)</td>
<td>Rs. 2,000-3,000 crores</td>
</tr>
<tr>
<td>Annual cost of minimum credible deterrence (with 400 warheads)</td>
<td>Rs. 5,000-7,000 crores</td>
</tr>
</tbody>
</table>

Source: The Indian Express; “A Price Tag to Deterrence Minimal,
### Credible and Nuclear by Vinod Anand, of August 23, 1999.

<table>
<thead>
<tr>
<th>Cost of 350-400 nuclear weapons (triad)</th>
<th>US $ 16 billion/Rs. 700 billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the worst case scenario of trade embargoes, international credit cut-offs &amp; other punitive measures This cost is less than 6.7% of India’s GNP</td>
<td>10 times greater than the above estimate</td>
</tr>
<tr>
<td>If the economy grows @ 7% per annum till the year 2030</td>
<td>Total cost will be 13.7% of the GNP</td>
</tr>
</tbody>
</table>

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