CHAPTER 5

CHINA'S ROLE IN
NUCLEARARATION OF INDIA
AND PAKISTAN
Reprocessing of Nuclear Energy
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The Nuclear Weapons have become the symbol of power in the present scenario. The relations among nations are determined by their military power. Two nations who have no nuclear weapons are considered less powerful then those have nuclear weapons. In 1947 India got freedom. Pakistan was born out of India. The emergence of India and Pakistan was on the basis of religion. It was considered that now Hindu and Muslims are not in the harmonious position and cannot coexist under the same roof. Thus in South Asian with region India is the biggest and most populated country of South Asia. The other countries of South Asia are not much power full and technologically advanced in comparison of India. The geographical and economical status of India fills the neighbours with inferiority complex.

India’s nuclear programme and Chinese threat

When India began its ‘tryst with destiny in August 1947, the world had already been divided in to two power blocks. One led by the USA and the other by the USSR. Already the world had seen the phenomenal power of atom bomb in Nagasaki and Hiroshima in 1945 India has chosen to adopt the policy of Non-alignment in the context of the cold war, and decided to seek a peaceful settlement of all international disputes. India’s leadership was committed to disarmament.

The Indian stream of disarmament was hurt by the race of weapons, commenced by USSR and USA in 1949, when USSR tested its first nuclear device.

Though India had decided to develop atomic energy programme at very early date, but it was declared that India’s nuclear programme will be of
peaceful nature and peaceful purpose. So an atomic energy commission was established under the chairmanship of Dr. Homi Jahangir Bhabha.¹

When India decided to develop atomic energy, till then Soviet Union in 1949, USA in 1945, United Kingdom in 1952 and France in 1960 had become nuclear powers. But Indian security posture felt great need of nuclear weapons after he had been suffered by the defeat of 1962 Sino-Indian war, when China made her first nuclear test at Hapnor (Western China) on 16 October 1964. After this explosion Indian security concerns were increased. Strategic thinkers of India state that China should be credited for the beginning of Indian Nuclear programme.

China exploded its first bomb in October 1964, a few months after Nehru’s death. This was an alarming development for India since China had already waged a border war against India in 1962 and had since then adopted a posture of hostility towards this country. In the wake of China becoming a nuclear power, Prime Minister Lal Bhadur Shastri gave a green signal to Dr. Homi Baba, the 'father of India's nuclear weapon option.

Dr. Bhabha peering in to the future and perceiving the possible uses of nuclear energy had urged the Sir Dorab's Tata Institute of Fundamental Research in 1945, consequent to Bhabha's request, was a step in the right direction and proved rewarding. The institute is the cradle of India's nuclear energy research programme by nurturing research and the first group of nuclear workers.

The Bhabha Atomic Research Centre (BARC) was set up as the Atomic Energy Establishment, Trombay, in 1957, and renamed as such in 1967. It is the national centre for research and related discipline.

India became the first Asian country a head of China and Japan to have an experimental research, APSARA, in 1956, with the collaboration of Britain. Dr. Bhabha was elected to preside over the first international
conference on Atoms for peace in 1956. He predicated that fusion energy was not for away and once energy at very cheap cost was available countries like India should be able to advance rapidly. His prediction turned out to be overlay optimistic.

Dr. Bhabha formulated a three-phase programme for development of Nuclear power in India. In the first phase, India will construct natural-uranium-heavy-water reactor using indigenous uranium and heavy water. Those reactors will produce plutonium. The plutonium will be separated and used as fuel for the fast reactor in the second phase. In the third phase, fast reader reactor produces more fissile materials than they consume. By using India's abundant thorium in the fast-breeders as blankets the thorium will be converted into uranium-233 which is a fissile material. In turn that will be used to fuel the enriched-Uranium -light-water reactor.2

Many people, both in India and abroad, charge that Dr. Bhabha was indenting to build a bomb from the beginning and he was misleading the Prime Minister. The real truth is that in the initial years Dr. Bhabha was apposed at India exercising nuclear option. But Dr. Bhabha suggested give up the nuclear option. Jawaharlal Nehru, who knew International relations, better told Dr. Bhabha that India should keep its nuclear capability as a bargaining chip. Dr. Bhabha became an advocate of India Nuclear option only after these attack and Chinese nuclear test. While Nehru was opposed to India exercising the weapon option, he was not ill favour of India unilaterally giving-up its option without commensurate benefits for the country.

After the Chinese Nuclear test on Oct. 16, 1964, Dr. Bhabha became a fervent advocate of India exercising its nuclear option. Dr. Bhabha at that stage was able to persuade the Project (SNEP). That would have made India a recognized nuclear power in the International Community at that stage. The work on the project unfortunately came to an end when Dr. Bhabha was killed in the Mont Blanc air crash on Jan. 24, 1966.
The first prototype breeder reactor is being built in Madras for which the plutonium will be obtained by reprocessing the irritated fuel from the Tarapur reprocessing plant.

In 1963, India was one of the first countries of sign the Partial Test Ban Treaty. India signed the treaty as an act of faith, in the hope that it would eventually lead to a total ban, including underground tests. But France and China did not sign the treaty and continued their preparations to test in the atmosphere. Also, the U.S.A. and U.S.S.R. stepped up their underground tests, thus belying our hopes for a total Test Ban.

Prime Minister Indira Gandhi launched a dynamic programme for research in nuclear development, but qualified it by restricting it exclusively for peaceful purposes, such as development of power, health etc.

Then came the N.P.T. In 1968 imposing restrictions and safeguards on the non-nuclear powers but not on the nuclear powers we did keep out options open and refused but sign the NPT because of its discriminatory clauses against the non-nuclear powers.

We were threatened with dire consequences Canada and the U.S.A. warned us that they could not supply us any enriched uranium and other equipment, unless, we threw open the whole gamut of our nuclear research project to international safeguards and inspection, not only those project we had launched with US and Canadian aid but also those that we had launched entirely through our resources and personnel.

This was a violation of bilateral agreement solemnly entered into by Canada and the U.S.A. with us. But they took shelter behind the international obligations; they had entered in to by signing the NPT, even though our agreements with them predated the NPT. They want even further and threatened to cut off economic aid and forbade us to make use even of the nuclear waste from the projects aided by them.3
The NPT was ratified by the required number of countries by 1970 but India, along with a few other countries refused to sign it. When we were convinced that Canada and the U. S. A. would not honor their agreements with us, we went a held with our own research programme and exploded our first peaceful nuclear device underground at Pokharan in the Rajasthan desert on May 18, 1974.

It created an excellent impression on the nonaligned and developing world that one of them had broken the nuclear monopoly of the great powers.

When India did not have nuclear capability, our pleas for nuclear disarmament did not have the same force as they today when we have the capability. At that time, India's appeals sounded like making a virtue of necessity. Today, they have more credibility and weight, not only because the threat and danger of a nuclear holocaust is much greater. Our credibility will be the greater the

Twenty-four years after having detonated its first nuclear device at Pokharan in 1974 India conducted series of nuclear yield device and a thermonuclear device. The tests had established that India had a proven capability for a weaponised nuclear momentum nuclear program.

The nuclear debate in India is once again gathering momentum. Those very analysts who condemned India's nuclear test in May 1998 as a hawkish step intended score political credit at home are now arguing that India can sign the CTBT only at its peril and at the cost of surrendering her sovereignty to the United States. It is really strange that though India is observing the basic provision of the CTBT, has no attention of violating it, and there is broad consensus that India does not need more tests, the political class has tied itself in knots in transforming this pragmatic respect for the CTBT into a formal legal commitment.
This we conclude that India has two huge security threats one from Pakistan and second from China. Both poses the threat:

Nuclear Reactors of India and Pakistan

Nuclear Anxiety of Pakistan and India and China as a factor

Pakistan's anxieties about India are based on India's design for regional hegemony and contrasting nationalism. Indian secularism and tolerance towards all religions is superficial for Pakistan. Pakistan views India as a Hindu state. They have been enmeshed in an enduring rivalry over the Kashmir issue since their independence. A Muslim majority state, Kashmir’s
inclusion would complete the basis for the formation of the state of Pakistan. Indian claims on Kashmir would reinforce the secular belief of India. Pakistan perceives India as a chief threat to its security. It fears being engulfed by the larger nation. Border skirmishes have been regular phenomena and low intensity conflict continues till today.

A new dimension was added to this conflict when India and Pakistan became nuclear states in 1998. India tested its nuclear weapons in May 1998 and Pakistan followed the suit. The Kashmir issue is the central issue of stability-instability between India and Pakistan. Kargil conflict followed the nuclear tests in 1999. India and Pakistan were on a brink of a nuclear war. It was an attempt by Pakistan to project its nuclear weapons. Thus, India and Pakistan became de facto nuclear weapon powers in the South Asian region.

Hostile neighbors made it imperative for India to have nuclear capability. The growing Chinese power in South and South East Asia was the primary reason for India to acquire nuclear capability. It was a prospective threat to Indian security, particularly after the border dispute of 1962. India's threat perception sharpened with the Chinese nuclear explosion in 1964 and in the post cold war era, when China was asserting to become a super power regionally and globally. China pursued the weapons modernization program, expanded its navy and facilities of electronic surveillance.

Pakistan is the only country in the South Asian region that challenges Indian superiority. It is a recurrent threat to Indian security over the Kashmir issue which has resulted in a number of conflicts. Three major wars have been fought in 1965, 1971 and 1999. Pakistan wanted to revenge the humiliating separation of East Pakistan into an independent sovereign state of Bangladesh. In pursuance of this strategy it followed the path of acquiring nuclear weapons. Pakistan wanted to possess an "Islamic bomb". This was strongly pursued by Pakistan which became a concern for India. This resulted
in Sino-Pakistan alliance and China helped in the development of Pakistani nuclear weapons program. This made it vital for India to build its nuclear weapons for national security perspectives.\textsuperscript{5}

Pakistan's threat perception emanate only from India. Its nuclear policy is India-centric. Its security dilemmas are focused on India and all defense and foreign policies revolve around India. The raison d'être for Pakistan acquiring nuclear weapons is to deter India. Initially the military regime of Ayub Khan rejected the idea of Pakistan procuring nuclear weapons. The Military defeat during the Bangladesh liberation war reversed the decision. The defeat made the then Prime Minister, Zulfiqua Ali Bhutto, to embark upon the nuclear program. Pakistan realized the conventional weapon superiority of India and realized that only nuclear weapons could match that supremacy. Possession of the bomb was seen as the only way of protecting the territorial sub continental Muslim nationalisms that Pakistan embodies. The Indian threat was looming large on Pakistan. Acquisition of nuclear weapons was seen as an alternative to substitute the energy shortage demand of Pakistan. As we have discussed first as Pak took Indian nuclear programme as a issue responsible Pak nuclear promptness same was with India in concern of China.

Indian and Pakistani relations have been tense since the birth of Pakistan. They have fought three conventional wars and one limited war. Kashmir remained the bone of contention. I the aftermath of the nuclear testing it can be the spark to trigger a nuclear exchange between Indian and Pakistan.

The very nature of the Pakistani state is a threat to India. Unlike India, which follows democracy, Pakistan shifts between authoritarian regimes and civilian government. Long military regimes and short duration of civilian
governments have prevented the growth of institutional norms and practices. Being a theocratic its support to the Muslim terrorist groups has been a major problem in the Indo-Pak conflict. Cross border terrorism has plagued the valley and has become a major hindrance in bilateral dialogues between the two countries.

For Pakistan India has been a source of threat since the formation of the state of Pakistan and China for India. It believes that India intends to crush the state of Pakistan. This idea was reinforced during the Bangladesh liberation war where India gave full support to the freedom fighters. It signaled to Pakistan the Indian superiority and also challenged the efficacy of the military rule in Pakistan. The then military ruler, Zia-U-Hak decided on the serious expansion of the nuclear program to match the Indian strength. Thereafter the nuclear programme expanded at an enormous rate. Though Pakistan faced difficulties, its allies provided all the necessary aid needed.

Seeking of a supporter for Pak nuclear Dilemma

China as an extra regional power is the major player in the region. It is a strong alliance for Pakistan and is instrumental in the missile development program of Pakistan. United States is another regional power in support of Pakistan. Since the cold war period, Pakistan has been a major ally of US. It was the US outpost in the South Asian region and was declared the frontline state. Post cold war, Pakistan served the purpose of preventing the rise of India as a regional giant. US greatly influence the security paradigm in the region. During the cold war period Pakistan was an important ally for US principally after the Soviet invasion of Afghanistan. Support to Pakistan was an important aspect of the Containment of Communism policy of America. During the Afghan war enormous economic and military aid flowed into Pakistan form the United States. But it believed in the international non-proliferation regimes and wanted Pakistan to keep within the limits of
safeguards and the international regimes. Whenever Pakistan disobeyed US cut of the aid as a punishment, but did not stop Pakistan from developing its nuclear capability.

A nuclear triangle has been formed in South Asia with India, Pakistan and China as nuclear weapons states. This can have serious implications on the stability in the region. This strategic triangular nuclear relationship has altered the security set up in South Asia. Stability of the region is totally dependent on the development of command and control arrangements over their establishments. This nuclearisation of south Asian region has created deterrence stability. India and Pakistan have not used their nuclear weapons after they tested them in 1998 since both the countries lack first strike capability. Here it is quotable that though China is not a south Asian state but her presence is being considered as significant actor in the region.

Nuclearisation in South Asia has altered the power paradigm in the region. Both India and Pakistan transformed from nuclear capable to nuclear weapons state in 1998. The aftermath of the tests improved the relations between the hostile states. This was evident with the signing of the Lahore declaration in 1999. Confidence building measures and bilateral dialogues came to the forefront. It ushered in an era of peace and friendship.

On the darker side it has given impetus to nuclear arms race in the region. Despite signing the treaty of cooperation, they got engaged in a Low Intensity Conflict in the Kargil sector immediately after the nuclear tests of 1998. It is difficult to maintain a nuclear deterrence balance because of the geographical proximity and the irrational decision making of the political leaders. However, nuclear weapons remain central to the stability of the region and between the two countries. In the aftermath of the Kargil conflict, both India and Pakistan are trying to develop mechanisms for ensuring nuclear stability in the region. The two countries are under taking various
confidence-building measures to establish peace and stability in the region rather than making it an area of nuclear flare-ups.\textsuperscript{7}

Along with the nuclear weapons the missile development of India and Pakistan has also altered the strategic environment of the region. They developed nuclear weapon but lacked the delivery systems for the weapons. The Indian missile development was an indigenous effort with little foreign assistance from Soviet Union. This was in regard to the treaty signed between India and Soviet Union in 1971. The Pakistani missile development program was totally supported by China.

India and Pakistan undertook various confidence-building measures to ease the tension among them. More so, in the post nuclear testing period to bring about deterrence stability in the region. Both were aware of each other's nuclear capabilities and knew the destruction the nuclear exchange could have. They decided not to attack each other's nuclear facilities. In 1998 the two countries signed the Lahore Agreement wherein they decided to combat the cross border terrorism. The Agra summit was held in 2001. However despite these measures conflict continues. The signing of the Lahore Agreement was followed by the Kargil conflict. It was believed that nuclear weapons could be used in the conflict. But the rational approach of India prevented the escalation of the war.

A Review of Pakistan's nuclear programme (The responsible factors)

As I have mentioned earlier that Pakistan's nuclear programme was less Pakistani and more Chinese, otherwise Pak was not in the condition to run it. Form the very beginning China had acted as an important source of inspiration and assistance of Pakistan's nuclear programme. Chinese nuclearisation and military support Pakistan nuclear programme was being
with the security concerns of Zulfiquar Ali Bhutto during sixty, as he declared.

"if India builds the bomb, we will eat grass or leaves, but we will get one of our own. We have no other choice."8

Pakistan's nuclear weapons program is the result of regional factors coupled with Domestic issues and International influences. Pakistan, an Islamic country, is in search of its National Identity and considers the secularism of India a myth. Since the partition of the Indian sub-continent, both the countries are enmeshed in an enduring rivalry over the Kashmir issue. It perceives India as a major threat and desires to achieve parity with India in nuclear weapons. Its nuclear program is India-Centric. It became the first Islamic country to acquire nuclear bomb.

Pakistan started the development of its nuclear program after the war of 1971. It was solely the effort of Prime Minister Zulfiquar Ali Bhutto due to the threat perception of India after the war of 1971. Prior to 1972 under the Military regime of Ayub Khan nuclear weapons were not given much importance. He believed that conventional weapons were sufficient to counter security threat from India. Thus, emphasis was on the development of peaceful uses of nuclear energy. The Pakistan Atomic Energy Commission was set up in 1956 to participate in the Atoms for Peace conference announced by the Eisenhower government. The conference called for the peaceful uses of nuclear energy for civilian use. Under his military rule, a natural Uranium-heavy water power plant, the Karachi Nuclear Power Plant was set up. It was placed under the IAEA controls.

In the 1960, Zulfiquar Ali Bhutto was the minister for Mineral and Natural Resources and pushed Pakistan towards the development of nuclear program. This was a reaction to the rapid growth of Indian nuclear infrastructure. In 1963, Pakistan Institute Nuclear Science and Technology
(PINSTECH) were established. This is Pakistan's principal nuclear research center and consist of a nuclear reactor and reprocessing plant. In the same year US granted $350,000 for its first research reactor, which came to be known as the Pakistan Atomic Research Reactor (PARR-1). In 1963 Zulfiquar Ali Bhutto became the Foreign Minister of Pakistan and was determined to build up Pakistan's nuclear capability. This aspiration became stronger after the Chinese nuclear testing and growing Indian agitation to develop nuclear weapons. Bhutto was of the opinion that a nuclear capable Pakistan would be able to deter and stand against an armed India.

Pakistan set up its first research reactor with IAEA assistance and the reactor was supplied by the United States. Pakistan intended to expand the reactors capacity with the French assistance. But the suspension of French assistance due to mounting pressure from the United States shattered the hope. The Karachi nuclear power plant (KANUPP) was constructed with the Canadian assistance in 1972. Both Canada and United States supplied natural uranium fuel rods and Heavy water for the reactor. But this reactor could meet only one fifth of the electricity demands of the city of Karachi. However the foreign backing halted in 1976. Pakistani indigenous capabilities were unable to keep the reactor operating. Shortage of heavy water supply impelled Pakistan to set its own heavy water plant under the IAEA safeguards. In 1976 Pakistan and France signed a deal wherein the Saint Gubian Techniques Novellas would help in setting up a reprocessing plant near Chasma. It supplied Pakistan with the design of the plant and some vital components before the deal was called off.

The 1965 war on the Rann of Kuchch was crucial in the Pakistani nuclear weapons program. The Kashmir issue was getting intensified. It was deteriorating the already tense relations between the two South Asian countries. It brought the conventional weapons disparity between India and Pakistan to the forefront. US banned the supply of weaponry as a punishment.
for the war. Pakistan was loosing significance for the West in the wake of US-Soviet Union Détente. Consequently, Pakistan moved closer to China for the expansion of its nuclear weapons capability.

On the International front, the nuclear powers came out with the Nuclear Proliferation Treaty (NPT). The Nuclear Non-Proliferation Treaty was a step by the super powers to prevent arms race in the international system. It stratified the nation states as “Nuclear weapon” and “Non-Nuclear weapon” states. This treaty failed to manage the nuclear aspirations of the nation states. Following the Indian suit, Pakistan refused to sign the treaty. India’s refusal to become a signatory to the treaty signaled to Pakistan the growing nuclear might of India. Indian nuclear capability would be a direct to Pakistan. Therefore any nuclear moves of India would be responded to by Pakistan. For Pakistan it was a question of security against India, which depended on the development of nuclear weapons.

The turning point in the Pakistani nuclear development came with the Bangladesh Liberation War of 1971. Despite the support of China, Pakistan faced a crushing defeat from India. It proved the military superiority of India and questioned the very existence of Pakistan as a nation. It broke the myth about the formation of a nation on religious basis. East Pakistan became present day sovereign country of Bangladesh. It triggered the Pakistani decision to embark on a nuclear weapons program.

Immediately after the war, Bhutto, Prime Minister of Pakistan held a meeting at Multan in 1972. Pakistan’s top scientists including Abdus Salam, Ishrat Usmani, head of the Pakistan Atomic Energy Commission and future PAEC chairman, Munir Ahmad Khan, attended it. The main agenda of the meeting was to inspire these scientists to commit themselves towards the advancement of Pakistani nuclear weapons program. By now it was clear to Pakistan that New Delhi was manufacturing nuclear weapons. Bhutto felt that
in such an environment, nuclear weapons were the only guarantee for the survival of Islamabad. Also the dismemberment of Pakistan put India in advantageous position since now it had to face Pakistan only from one side. Its membership of CENTO and SEATO did not help in winning the war against India. Threat from India was the main reason for joining these military alliances to gain American support against New Delhi.

Pakistan embarked on the nuclear weapons program due to the security reasons vis-à-vis India. But various economic and political factors can also be cited as reasons for the development of the nuclear weapons program. On the economic front, Pakistan was facing energy shortage along with the fossil fuel resources. The demand was falling short of supply. It had a poor energy resource base and the import of energy was expensive. Significant increase in the energy resources will depend on the discovery of new reserves. Despite the heavy investment, 3% of the GNP, the energy sector has failed to meet the demands of the population. The energy demand is increasing at an enormous growth of 1.3 and 1.5 times the GNP. Pakistan saw the development of nuclear weapons as an alternative energy to supplement the shortfalls. This would strengthen the industrial, scientific and technical spheres for the development of Pakistan. Politically, the nuclear weapons development was looked at as gaining equivalence with India. It would prevent the domination of India in the South Asian region. The cancellation of deal with France due to US pressures did not deter Pakistan on the development of its nuclear program. Bhutto, popularized the nuclear weapons through the media and the press. The shift from civilian to military regimes and from military to civilian did not come in the way of the nuclear weapons program. An independent nuclear weapons program will enhance Pakistan's prestige among the Islamic nations. It will place Pakistan on a higher platform among the various Third world countries. In the South Asian context, Indian nuclear weapons capability has been major influence. Pakistan fears being engulfed by India.11
However, the main motivation for its nuclear weapons development is the security threat, which it faces from India. Post independence the two countries have been embroiled in low intensity conflicts over the Kashmir issue. Indian superiority in conventional weapons, development of its nuclear weapons convinced the Pakistani policymakers to develop an Islamic Bomb. Its nuclear capability would counter threat posed by hegemony of Indian. India being the largest country in the South Asian region is perceived as a hegemonic power by the smaller countries of the region.

To meet these challenges, Pakistan decided to expand its nuclear program. Allocations had been in the annual budget to set up nuclear reactors near Kundian in the Chashma Raghage area of Punjab. In contrast to IAEA's "optimum" energy solution a reactor was installed in 1982, another one in 1987 and one in 1988. The Pakistani Government planned to start one reactor every two years until the end of century starting from 1980.

There were growing concerns about the progressing Indian nuclear weapons capability. This apprehension was strengthened after the Indian nuclear tests of 1974. This heightened Pakistan concerns about Indian nuclear intentions and Pakistan became aware of its military inferiority. Acquisition of nuclear weapons would compensate for this limitation against India. They would facilitate the regional advancement of Pakistan and provide International standing vis-à-vis India. After the peaceful nuclear explosion of India, Pakistan proposed to declare South Asia as a nuclear free zone. It was not accepted by India due to the security threat from America base of Diego Garcia in the Indian Ocean. Pakistan on the other hand was enjoying security support from US. The main motive was to prevent India to develop nuclear capability as Pakistan believed that Indian nuclear weapons will be directed towards them and not China.
Dr. Abul Kadir Khan and Pak Nuclear advancement

In 1974, Dr. Abdul Kadir Khan, headed the PAEC. He is a metallurgical engineer who was working in Netherlands. He convinced Bhutto about the efficacy of Uranium enrichment technology. Khan stole the blueprints and the technology for the Uranium enrichment while working at the Almelo Ultracentrifuge Uranium enrichment plant in Netherlands. In 1976, he was made in charge of the Kahuta uranium enrichment plant. Later it became Khan’s research Laboratory. Under his guidance Pakistan was able to establish a covert network to obtain the necessary materials required for the nuclear program. He convinced Pakistan for the use of uranium as against Plutonium since the latter involved expensive processes.

Uranium is considered the most important element in the nuclear fuel cycle and Pakistan became a master of Uranium enrichment method because of the stolen blueprints. A nuclear power plant was installed near Chashma with a capacity of 600 MW. It is under IAEA safeguards and was sold by China to Pakistan. This required enormous funds and resources, which was a great limitation for the weak Pakistani economy. The stringent IAEA safeguards on all nuclear facilities with the exception of Kahuta make it difficult for Pakistan to develop plutonium bomb.12

The Indo-Pak war of 1972, gave Pakistan an opportunity to develop relations with North Korea. This enabled Pakistan to acquire the critically needed weapons. Pakistan signed an agreement with the DPRK, which was followed by the arrival of arms shipment to Karachi on 18 September 1971; thereafter DPRK continued to supply artillery, multiple rocket launchers, ammunition, and a variety of spare parts. In 1976 Pakistan signed a deal with the French government for the purchase of nuclear reprocessing plant. But, economic and technological constraints limited the development of nuclear infrastructure.
During the same time US was becoming apprehensive about the acquisition of nuclear capability by the Third Word countries. The peaceful nuclear explosion of India and the supply of reprocessing plant by the French furthered the US fear. It called for the cancellation of the deal between France and Pakistan. In 1977, the French succumbed to the US pressure and called off the deal. Immediately Bhutto made a statement that, “Pakistan was on the threshold of full nuclear capability. All we need was the nuclear reprocessing plant”.  

The regime change in Pakistan added a new dimension to the nuclear weapons program. The military coup led by Mohamed Zia-ul-Haq ousted Bhutto. This ended the era of democracy giving way to military rule. This brought the nuclear weapons program under the control of the army. The civil bureaucracy was apart of it through the scientific community. Zia established relations with the countries of Western Europe, particularly Germany and Netherlands, to obtain the Uranium enrichment technology. Though Pakistan embarked on the Uranium program, it posed serious start up problems. Parallel to the uranium program, it started the plutonium program and the Khushab facility became the centre for the development of plutonium and tritium for compact warheads. This nuclear facility was set up with the Chinese assistance and became operational in April 1998. It was not subject to IAEA inspection and generates an estimated 8-10 kilotons of weapons grade plutonium per year.  

The external pressure from the US continued in the form of economic and military sanctions in 1977 and 1979 through the Glenn-Symington Agreement. Zia faced tremendous pressures to obtain nuclear technology and materials due to the tight export control of the Western countries. After the Indian nuclear explosion a new nuclear cartel, Nuclear Suppliers Group, emerged. It was meant to curtail the expanding Pakistani nuclear weapons program. Its task was to coordinate the supply of nuclear technology and
equipment to the non-nuclear states. This denied access to Pakistan to the Western nuclear technology and material. Pakistan claimed its nuclear program was for peaceful purposes. Zia emphasized the fact by adhering to the regional non-proliferation measures. He accepted the IAEA controls and safeguards.

Soviet invasion of Afghanistan marked another turning point in the Pakistani nuclear weapons program. US lifted the sanctions imposed on Pakistan. The Reagan administration gave $3.2 billion aid package to Pakistan and suspended the uranium enriched sanction under the Glenn-Symington Agreement. This was important for the US containment policy towards Soviet Union. It strategic location made Pakistan an important player for the US in the South Asian region. Pakistan was declared a “Frontline State” and became the US outpost in the South Asian region. Soon the Zia ruled Pakistan began serving the US interests in Afghanistan. This resulted in the substantial flow of economic aid, military assistance, supply of arms and ammunition to Pakistan. The security assistance of the US included the sale of F-16’s along with radars, surface-to-air and air-to-air missiles, artillery, artillery rounds, antitank missiles, harpoon missiles and M-48A5 medium tanks for the army. This served a dual purpose for Pakistan. Firstly, it gave an impetus to the nuclear weapons program and strengthened the military. Secondly, it enabled Pakistan to overcome the domestic opponents. But Pakistan’s keen pursuit of nuclear weapons clashed with the US nonproliferation legislations and policies.

Though USA consider Pakistan as his friend but he also did not want this growth in Pakistan’s nuclear capabilities. Pakistan assured International community that he would abide by the set of limit but this argument brave as a veil on its intention.
Pakistan was claimed to have acquired nuclear weapons by 1987, though it did not conduct any test in its territory. In view of Presser Amendment, which provided for US President's certificate to the effect that Pakistan did not possess nuclear weapons to be entitled to receive American assistance, Pakistan did not officially disclose that it possessed nuclear weapons. In fact, President George Bush had refused to certify that Pakistan did not possess the bomb. However, once India conducted its five shakti tests in May 1998, Pakistan came out to conduct its own explosions and claimed that it was also a nuclear weapon state. At one time, in 1980's Pakistan was expressing fear of Indian attack on its uranium enrichment facility at Kahuta, but this fear was largely alloyed by Prime Minister Rajiv Gandhi in 1998. In the Western countries, Pakistan's nuclear ambitions were perceived as leading towards an 'Islamic Bomb'. Pakistan was also concerned about the likelihood of an Israel air-strike, like the one which had destroyed the French-built nuclear reactor in Iraq in June 1981. Writing several years before Pakistani tests of 1998, William C. Patter had opined that, Although these fears are likely to be subordinate to the perception of existing strategic vulnerability, they may well encourage the maintenance of maximum ambiguity in the Pakistani nuclear programme and the emulation of the Indian 'nuclear device' or Israeli" bomb in the basement" as opposed to overtly deployed nuclear weapons." Actually, Pakistan waited till India finally exercised its nuclear options.

China's Assistance and Pakistan's missile Programme

The Pakistan missile programme was beginning with the stream of hostility towards India. All missile tests are reactionary, and mostly came after India made missile tests. It is reported that many of Pakistani missile are mere copies of Chinese missiles. As China gives technological help to Pak to rebalance power scenario in South Asia.
Pakistan’s Missile development and China

Pakistan’s missile development program began with the setting up of Space and Upper Atmosphere Research Commission in 1961. In the initial stages Pakistan was reluctant to develop missile capability, which is evident from the fact that it proposed a “Zero Missile Regime” in South Asia. Pakistan has acquired the capability to develop both short and medium range missiles. The security threat from India was the main reason for the development of missile technology. Initially it functioned under the Pakistan Atomic Energy Commission but later was placed under the Ministry of Defense. But it was only in 1987 that an accelerated missile development and acquisition program was undertaken. General Mirza Aslam Beg took the decision, after learning that India was on the road to pursue missiles. The missile development of Pakistan was also India-Centric. The program began with the growth of surface-to-surface ballistic missile of Haft-I and Haft-II. The Haft-I has a range of 80 Km with a 500 Kg payload and the Haft-II has a range of 300 Km with payload of 500 g. Pakistan was also developing series of ANZA missiles, Anza-I and Anza-II. They were considered the Pakistani version of Chinese M-11 missiles. But it was not totally an indigenous effort, since China was the invariable supporter. Pakistan also test fired Shaheen-I on 14 April 1999 as a reaction to the Indian testing of Agni-III. The missile is a single stage solid fuel with a 600 Km range. Pakistan is also engaged in the development of Shaheen-II, a two-stage solid fuel road mobile missile. Shaheen-I is considered to be the derivative of Chinese Missile-9.

Pakistan had acquired nuclear weapons by 1987, but the delivery system was restricted to aircrafts essentially the US supplied F-16’s. This was constrained by the sanctions imposed due to the Pressler amendment. During this period Ballistic missiles were appearing as effective destructive weapons.
This was made evident by the Iraq Iran war and China was emerging as an important source of Ballistic missile supplier to the Islamic world. The growing Sino-Pak nexus assured Pakistan of missile arsenal support. Thus, China was playing a major role in the Pakistani nuclear weapons program particularly in the missile development. The Sino-Pakistani relationship proved advantageous for the progress of Pakistan’s nuclear weapons program. China was following the Kautilyan philosophy enemy’s enemy is a friend. By supporting Pakistan it could counter the rise of and it settle its border score with India. China provided the nuclear know how, provision of weapons grade uranium, technical information on uranium enrichment and helped in setting up the Kahuta ultracentrifuge uranium enrichment plant. It provided ring magnets, diagnostic equipment, heavy water, integrated nuclear facilities including the Khushab research reactor for the production weapons grade plutonium and complete nuclear weapons design which involved a 20-25 kiloton solid-core implosion devise. China supplies heavy water to this facility.

China was supplying M-9, M-11 short range ballistic missiles and assisted in the development of Middle Range Ballistic Missile. The M-11 has a range of 280 Km with a payload of 800Kg. The US considered this a threat to the Missile Technology Control regime, which is the only international regime that governs the Missile development. It decided to impose economic sanctions on China. The China Precision Machinery Import-Export Commission provided Pakistan with gyroscopes, assessor meters, on-board computers and other missile related technology to Pakistan. Again in 1997, Pakistan tested Haft-III missile. Pakistan was heavily dependent on the Chinese assistance for missile capability. China has supported Pakistan and supplied blueprints of fissile weapon in 1983 as the relations between India and Soviet Union were warming up.
However, along with China, the Democratic People’s Republic of Korea played a major role in Pakistan’s missile development. The relation between the two countries dates back to the 1970’s. DPRK provided military assistance to Pakistan but this lapsed with coup of Zia-ul-Haq. The cooperation between them was resumed during the tenure of Benazir Bhutto. DPRK supplied artillery ammunition, multiple rocket launchers, milling and drilling equipment, cooperative covert programme to acquire nuclear and missile technology from Germany. This provided for an alternative source of missile technology with the mounting US pressure on China. In exchange, Pakistan was supplying nuclear weapons to North Korea. In April 1998, Pakistan tested the Ghauri missile. The Ghauri missile is a single stage liquid fuel road mobile missile with a range of 1300-1500Km. It is believed that the missile is based on technology obtained from North Korea. It was in response to the Indian missile testing of Agni. Despite economic constraints, Pakistan’s missile program continues unabated due to assistance from China and North Korea. Missiles are central to the nuclear weapons program of Pakistan. The 1990’s is called “Pakistan missile acquisition decade” since it was not developed but acquired through external support. Acquisitions of missiles along with nuclear weapons enabled Pakistan to match the Indian capabilities.

The stringent control measures of the US on the Pakistani nuclear weapons program, made Pakistan tilt towards China. In 1986 China and Pakistan signed the atomic cooperation agreement. This provided for the transfer of nuclear technology and materials to Pakistan. It assisted in the development of gas centrifuge at the Kahuta facility. This was made evident by the presence of the Chinese technicians at the facility.

The military exercise of India under “Operation Brass Tacks” was another in the Indo-Pak relations. It strengthened Pakistan’s decision to develop a nuclear program to match the Indian military capability. The military exercise was launched by India in the Rajasthan sector very close to
the Pakistan border. During the period, Pakistan was supporting the Sikh demands for a separate nation. Pakistan perceived the exercise as an attempt to exhibit the superiority of its conventional forces. It was also believed that by this exercise India aimed to attack the Sikh terrorists camps in Pakistan. India wanted to signal Pakistan about its superiority. The crisis was heightened with Dr. Khan's public announcement that Pakistan possessed a nuclear bomb. In retaliation Pakistan also conducted a military exercise on December 9, 1989 under "Zarb-I- Momin".20

With the assassination of Zia, democracy returned to Pakistan and Benazir Bhutto became the Prime Minister. The military had to succumb to the democracy in the face of opposition. There was a shift from the military regime to a civilian form of government. However the Army Chief General Mirza Aslam Beg refused to transfer power to Benazir Bhutto until she accepted Military control over the nuclear weapons program. The same year, Soviet troops withdrew from Afghanistan. This made Pakistan skeptical about the US support and aid for nuclear development. This tainted the strategic environment of South Asia. But even with the democracy coming to power, the nuclear program remained under the army. Bhutto was unaware about the advances on the nuclear front. All the knowledge about the nuclear program depended on the briefings from the US. As a matter of fact the Pakistani Prime Minister cannot even visit the site of the nuclear power plant. Nonetheless, she signed an agreement with the Indian Prime minister wherein the two countries pledged not to attack the nuclear facilities of each other. By this time the cold war was over and there was a change in the international system. Bipolarity changed into unipolarity with the United States emerging as the dominant power and the disintegration of the Soviet Union. Post cold war era reduced Pakistan's strategic significance for US. It began paying more attention to the nuclear build up and issued several warnings to constraint their nuclear weapons program. Since the policymakers were
reluctant to risk the economic assistance from the US, they decided to slow the pace of nuclear development.

The post cold war era also marked the heightening of the Kashmir crisis. Pakistan had set up training camps for the Kashmiri insurgents fighting in the Indian occupied Kashmir. This resulted in the cross border infiltration and India sent troops to prevent the infiltration. Under these circumstances, Pakistan threatened to use nuclear weapons if Indian military crossed the Line of Control. This increased the likelihood of nuclear war between India and Pakistan over the Kashmir issue and made the Bush administration to impose military, economic sanctions on Pakistan.\textsuperscript{21} The year 1990 also marked the stepping down of Benazir Bhutto and Nawab Shariff assuming office as the Prime Minister of the Islamic country. The military maintained its grip over the nuclear weapons program. The sanctions imposed by the US did not effect the development of Pakistan's nuclear weapons. Pakistan had the option of getting soft loans and advanced weapons systems from other industrialized countries as well as from the financial institutions like the World Bank, International Monetary Fund. Internally, the military made sure that the civilian government does not challenge its nuclear preferences. Despite China continued support, Nawaj Shariff had to vacate the office for Bhutto to assume office in 1993.

The Pakistani policymakers did not want to abandon the nuclear weapon option, but at the same time did not want negativity of the international community. Hence, it pledged towards the non-proliferation measures. It approved the NPT in 1995 with the Indian acceptance of the treaty and agreed to sign the Comprehensive Test Ban Treaty (CTBT) if India approved it. But the treaty was rejected by the US Senate and requires revision for future dialogue. Pakistan was satisfied with nuclear deterrence in South Asia as each country recognized the nuclear capabilities of the other. For Pakistan it compensated the weapon superiority advantage of India,
neutralized the nuclear threat from India and maintains equilibrium with India.

In 1993 the UN General Assembly came out with the Fissile Material Cut Off Treaty to ban the production of fissile material for nuclear weapons or other nuclear explosive devices. For Pakistan the FMCT was a difficult decision keeping in view the security dilemmas from, India and the Indo-US nuclear deal.22 Nevertheless, it approved the treaty in 1998 after the nuclear tests. Pakistan saw this treaty as measure of constraint and regional counteraction against India.

There was another shift in the political structure and Shariff came back to power. Relations began to improve between Pakistan and India under the leadership of I.K Gujral. Gujral spoke about people to people contact for improving relations. Various dialogues were held between the two governments to end the hostilities. The dialogue process came to a halt due to the internal political situation in India. Vajpayee became the Prime Minster of India, which started the rule of Bhartiya Janata Party in India. Amidst this internal turmoil, Pakistan tested its Ghauri ballistic missile, which can travel a distance of 1500 kilometers. Vajpayee and Shariff signed the Lahore declaration wherein they decided to maintain good neighborly relations, combat cross border terrorism.

However the Pakistani bureaucracy insisted on the centrality of the Kashmir issue in all the Confidence Building Measures. This became a major hindrance in the peace talks for diffusing the hostilities. Besides, the Pakistani army was not keen on holding negotiations with India. The rationale was the BJP government being perceived as a Hindu fundamentalist party and anti-Muslim.23

The turning point in the Pakistani nuclear weapons program came with the testing of the Indian nuclear weapons in May 1998. It surprised the
international community and made Pakistan anxious of the Indian nuclear threat. The Indian validation for the tests was the apparent danger from nuclear China. However, Pakistan rejected these grounds of the Indian nuclear testing. They ascribed testing to a number of factors like, the Indian desire to be recognized as a regional super power, the narrow nationalistic view of the BJP government, the uncertain security environment with the end of cold war. Pakistan feared that India might exercise nuclear advantage in the Indo-Pak conflict on the Kashmir issue. This belief was sharpened by the various anti-Pakistan statements made by the Indian government.

These tests made it imperative for Pakistan to display its prowess in the nuclear weapons. The Pakistani tests would create a balance of power in the region. It followed a “tit-for-tat” fashion and on May 28 Pakistan conducted the first test near the Chagai district of Baluchistan province. The second test was conducted two days later on 30 May. Prime Minister Shariff announced, “Today we have settled scores with India by detonating five nuclear devices of our own. We have paid them back”. Pakistan justified the tests for counterbalancing the security threat from India and to gain an edge on the Kashmir question.

The nuclear testing alarmed the international community and made the South Asian region the most volatile region in the world. US feared the outbreak of a nuclear war in the region and the beginning of arms race among the third world countries. The P-5 countries condemned the nuclear tests and asked the two countries to exercise restraint. The international community asked India and Pakistan to join the nonproliferation regimes as non nuclear weapon states.

Internally, Pakistan was condemned of the nuclear tests due to heavy strain on the economy. People to take to street protests to condemn the government for the economic crisis of the country. Pakistan has been
dependent on foreign aid for its survival. In the aftermath of the tests, the Western countries withdrew their support and Pakistani economy could not withstand this pressure. Civil society questioned the expenditure on defense at the cost of human development. In Baluchistan, the site of the nuclear testing, the ruling party condemned the decision to test but was dismissed. The Sind province and the North West Frontier Province criticized the nuclear policy of Pakistan.

Pakistan dismissed the international response as being unfair and was not ready to give up the nuclear capability. However, it feared the adverse impact of the sanctions on the already weak economy. Thus, minimization of the negative impact on the economy without jeopardizing the nuclear program became the central agenda. US imposed sanctions under the Glenn amendment, which prohibited loans to Pakistan from the international financial institutions. Japan also imposed sanctions on Pakistan. The European Union stated the delay of non humanitarian loans to India and Pakistan if they failed to restrain their nuclear capability.

Unlike India, there is no declaration of nuclear doctrine by Pakistan. Its nuclear weapons program aim at preserving territorial integrity against any Indian attack, establish prestige and status in the international community, counter the conventional weapons superiority and thwart military escalation of India. Nonetheless, "Minimum Credible Nuclear Deterrence" is the guiding principle of its weapons program. It has pledged to the no first-use policy against the non nuclear weapons states, but will strike against a nuclear aggressor like India.

The immediate follow up of the nuclear tests of the two South Asia countries was the Kargil conflict initiated by Pakistan in 1999. Pakistani infiltrators crossed the Line of control and entered the Kargil, Drass sectors. The strategy behind this move was to internationalize the Kashmir issue, cut
off the Srinagar-Leh highway from the valley. For Pakistan the time was ripe to settle scores with India since it was nuclear capable to challenge Indian conventional weapon superiority. Pakistani policy was influenced by the possession of nuclear weapons. India maintained restraint and caution and did not cross the LOC to diffuse the crisis. Both the countries threatened to use nuclear weapons on a number of occasions. Thus, the crisis would have turned into a nuclear war incurring heavy losses. This crisis injected nuclear weapons in the Kashmir dispute. However, rational decision making on the part of India prevented the use of nuclear weapons in the South Asian region. Thus acquisition of nuclear weapons leads to nuclear dilemma since the outcomes can cause magnanimous losses.

Pakistan continues to expand its nuclear capability so long there remains Indian hegemonic threat to its security. In 2007 Pakistan Army Strategic Command Force (ASFC) test fired the intermediate ballistic missile, Ghauri also known as Haft-5 and has a range of 1500 Km. The ASFC is the cutting edge unit of the National Command Authority and controls Pakistan’s nuclear assets. This launch was conducted immediately after the test of medium range Shaheen-I. Pakistani president, Pervez Musharraf reiterated that Pakistan was capable of thwarting all threats to its sovereignty and has developed a strong deterrent capability. At present Pakistan is considered to have 50 nuclear weapons and highly enriched uranium stock for 50 more. In addition, it can produce 5 to 10 bombs a year. It possesses 55-90 weapons of highly enriched uranium and 20-60 plutonium bombs.

A Review of Indian Nuclear Weapons Program (the responsible factors)

Jawaharlal Nehru said about Indian Nuclear Programme “We must develop this atomic energy quite apart from war - indeed I think we must develop it for the purpose of using it for peaceful purposes. ... Of course, if we
are compelled as a nation to use it for other purposes, possibly no pious
sentiments of any of us will stop the nation from using it that way."

**History of Indian Nuclear Program**

Indian nuclear program can be broadly classified into five distinct phases, which made the May 1998 tests possible. The first phase started with the establishment of the Indian Atomic Energy Commission in 1948, the Chinese nuclear tests in 1964, the nuclear explosion for peaceful purposes in 1974, the aftermath of the 1974 tests constitutes the fourth phase and the final phase in the Indian nuclear development was the end of Cold War and the collapse of Soviet Union in 1991. Indian nuclear program was greatly influenced by the external factors and the attitude of the Super Powers towards India.

Nonetheless, the leadership of the country was another driving force in the development of nuclear capability. India's indigenous nuclear program started even before Independence and was initiated by Dr. Homi Jehangir Bhabha. He is considered the father of Indian nuclear program. Bhabha and Indian scientists convinced Jawaharlal Nehru that India had an advantage in the nuclear field. India had vast deposits of Thorium, which is a possible source of Fissile material. Nehru was convinced that scientific group could speed up India's development in the energy sector. Bhabha was instrumental in setting up the Tata Institute of Fundamental Research on 19 December 1945 and became its director. Bhabha believed that nuclear weapons would facilitate India's economic development. Three years later, The Indian Atomic energy Commission was set up under the leadership of Nehru. Nehru believed that the acquisition of nuclear weapons would enable India to gain International status after a colonial rule.

In 1954 the department of Atomic energy was created with Dr. Bhabha as its Secretary. This department reported directly to the Prime minister and
continues to do till today. This led to an increase in the Atomic Energy budget, which now consumed one third of India’s research budget. In the initial stages, Indian nuclear program depended on international assistance. The construction of India’s first research reactor, Apsara was made possible with the British assistance. Canada also supplied India with a powerful research reactor and under the Eisenhower Administration's "Atoms for Peace" program the US agreed to supply 21 tons of heavy water for this reactor in February 1956. This research reactor came to be known as Cirus and became operative in 1960. It was not under any scrutiny and safeguards under any authority. It enabled India to produce Plutonium, which was used in the nuclear explosion of 19743. Cirus provided the design prototype for India's more powerful Dhruva plutonium production "research" reactor. The technical effort was Indian but the raw material help was came from abroad, on the Promise that these reactors will use for “peaceful purposes”.

Amidst all this, tension arose with China over the border issues since 1959. This resulted in large-scale troop deployment on the either sides. India had become conscious about China’s nuclear program. This gave greater impetus to Indian efforts. India faced a crushing defeat from China in the border war of 1962. Post Sino-Indian war, there were some Indians who believed that nuclear weapons program along with rearmament would strain the economy. India had received military assistance and aid from United States and MiG-21 factory from Soviet Union. They believed that it would affect the Five Year Plans. Another group of Indians was of the opinion that nuclear weapons would guarantee India’s security. Thereafter, the Jana Sangh Party made the first formal demand, in the Parliament, for the development of nuclear weapons. This was contradictory to Nehruvian policy of peaceful uses. It was also clear that Chinese nuclear explosion was in the making, which will create security problems for India.
In May 1964 Nehru died and Lal Bahadur Shastri took office as the new Prime minister. He followed the Gandhian philosophy and was opposed to the nuclear weapons programme. Later that year in October came the Chinese nuclear explosion. This sparked off a debate in the Parliament, wherein Pro-Bomb speakers were of the opinion that China would become “Giant” and India would “remain a dwarf” if it did not develop nuclear weapons. Thus, Shastri had to change from the “No-Bomb” policy to a vigorous nuclear policy due to the domestic political pressures. The nuclear policy was on the lines of peaceful uses. This served a dual purpose. It strengthened Shastri’s position in the party, which was under attack. Secondly, it was a rejection of the nuclear policy, which he believed in. However, the advancement of the nuclear program would pull back the Indian economy, which was to be a priority.

Moving ahead with the peaceful nuclear explosive capability was due to the acquirement of nuclear weapons by the Chinese. This in turn would give China leverage over India as an Asian power. Ironically, the Indian military was always excluded in the decision making process. Nuclear weapons program was solely the field left to the leaders and to Homi Bhabha.

The movement of Pakistani troops in the Rann of Kutch in 1965 followed the border war with China. Despite the arms supplied by the US to the Pakistani troops and the support from China, India emerged victorious. This strengthened India’s desire for nuclear weapons. Also the US-Pak-China ally was posing security threat to India. These International developments were threatening Indian security. It strengthened India’s aspiration for continuing on the path of nuclear weapons program. However, for a brief period in the year 1966, Indian nuclear establishment was stalled due to the sudden death of Bhabha in a plane crash. The death of Shastri in the same year led to Mrs. Indira Gandhi assuming the office of the Indian Prime Minister. Mrs. Gandhi chose Vikram Sarabhai as a successor to Dr. Bhabha.
Raja Ramanna succeeded Sarabhai as the director of the Bhabha Atomic Research Centre. The Indian nuclear weapons program was in full swing under his guidance. He placed the country’s indigenous nuclear program on a firm footing and is called the architect of the Indian nuclear program.

India’s nuclear option was becoming a concern for Pakistan. The then Military ruler, Ayub Khan, with his Foreign Minister Zulfiqar Ali Bhutto met with the Chinese Premier, Chou en Lai to win support for Pakistan. It was in mid-1965 that Bhutto made his famous remark that if India acquired nuclear weapons "then we should have to eat grass and get one, or buy one, of our own." Pakistan feared a change in the balance of power in the region with the acquisition of nuclear weapons by India. During this period the two Super Powers, Soviet Union and United States, came out with the Nuclear Non Proliferation Treaty (NPT) to stop the further acquisition of nuclear weapons by the countries. The fundamental reason for Indian refusal to the Treaty was the threat to the Indian National Security from China. The humiliating defeat of 1962 was still fresh in the Indian mind. India feared that China might possess the ability to “Blackmail” India in some future Diplomatic confrontation. Thus, India accelerated the development of nuclear weapons in the aftermath of the Border dispute with China. This threat was repeatedly reinforced with China mounting its thermonuclear bombs, miniaturized warheads for tactical nuclear weapons, testing Atomic bombs, when the Nuclear Proliferation Treaty was in progress. India wanted security and safety. Therefore it wanted to “retain the option to make nuclear weapons”. Refusal to sign the treaty gave India that freedom and would enable India to continue the import of nuclear materials and equipment for its civilian nuclear program subject to bilateral controls.

India was against controls over its nuclear establishments, as this would authorize the external authority to check these areas. It opposed the Baruch plan of the United States for control over the Atomic raw materials. It
was against the creation of IAEA as India viewed it technical and economic colonialism. Thus, India never accepted controls on imported equipment and fuel. Rather, it became the first developing country to indigenously build the first experimental research reactor, Apsara, in Asia.

Dr. Homi J. Bhabha, head of the Indian Department Atomic Energy, opposed the IAEA on several grounds. According to him, the IAEA safeguards would hold up the pace of a country to develop nuclear weapons. This would widen the gap between the developed and the developing countries. Also the control was not on proper parts of the nuclear fuelcycle. Safeguards should be on the nuclear weapons of purely military nature, like plants for the extraction of Plutonium and gaseous diffusion plants, but not on fuel fabrication plants and Atomic Power stations. In the words of Arthur Lull, Indian representative to the Geneva Conference on June 7, 1962, claimed that IAEA safeguards provided “no safety at all... Full of holes... are laborious exercises in red tape in the atomic sphere... But once again gaseous diffusion plants to enrich Uranium, and the chemical separation plants to purify Plutonium have been put under effective controls, there is no significant risk”. But the Indian Government refused to International controls on the grounds of being discriminatory for the Non-Nuclear States. Indian negation to the treaty was officially announced on May 14 1968 at the special session of the General Assembly convened to debate the final treaty draft.

The turning point came with the 1972 Bangladesh liberation war. The majority party in East Pakistan was not allowed to form the government even after winning majority seats and its leader Sheikh Mujib-Ur-Rehman was arrested. India provided help to the East Pakistani forces. It was cheaper for India to get involved in the war rather than settling the tons of refugees from Bangladesh to India. In retaliation, Pakistan attacked India in the western sector. It wanted to gain territory in the West, which could be bargained for the territory lost in the East. During this war Pakistan had moved closer to
China and to US. India had no option but to move towards Soviet Union. India and Soviet Union signed a treaty of Peace Friendship and cooperation in 1971 whose article 9 contained a clause for the guarantee of Indian security. Pakistan faced a humiliating defeat at the hands of India. India faced nuclear coercion when USS Enterprise was dispatched into the Bay of Bengal towards the end of the Bangladesh liberation war.

By the beginning of 1972 the basic design for India's first nuclear device was complete, and other parts of the program for developing the necessary expertise to implement the design were coming along. After the Bangladesh liberation war, India exploded an underground nuclear device in May 1974 under Raja Ramanna. He stated, "The Pokhran experiment was a landmark in the history of nuclear research in the country. It was an assertion of the technological advancement India had determined to perfect in the post independence era." Complete secrecy was maintained about the tests. The Indian government files did not record this decision or the basis of this decision. It became the first country to explode a bomb for peaceful nuclear purposes. The bomb was made with Plutonium extracted from spent reactor fuel. Canada supplied the reactor and the Heavy water needed to run the reactor was supplied by the United States. This assistance was provided on the promise that the materials would be used for peaceful purposes. The primary motive behind the nuclear explosion was not security concerns but the scientific ambition and the desire to prove Indian proficiency in the global politics in comparison to China. Hence, India did exhibit its nuclear capability; its technological might and demonstrated that it could become a major military power. But its nuclear explosion was done without a doctrine except for the fact that it will be for peaceful purposes.

Indian nuclear program completely depended on the steady supply of Heavy Water. India is a member of the International Atomic Energy Agency (IAEA) whose main task is to safeguard nuclear imports. Though India has
manufactured its own Heavy Water since 1962, its domestic production has been insufficient to meet the required demand.

Hence, it has to import Heavy Water on the promise that the Plutonium made will be used for peaceful purposes. India produces Heavy Water at four places namely Nangal, Tuticorin, Kota and Baroda. Out of these Nangal is the best producer of Heavy Water. According to an estimate it produced between 10t to 12t annually. Another major factor is the demand for the Heavy Water, which falls short of the supply. India has two nuclear reactors, Cirrus and Dhruva. It has two nuclear power plants in the northwestern province of Rajasthan (RAPP-1, RAPP-2). They are subject to the IAEA inspection. Two power plants near the South port of Madras (MAPP-1, MAPP-2). All require heavy water supply. Due to domestic shortages of Heavy Water, India depends on the imports to run the reactors. India’s first import came from the United States, about 19t, to start Cirrus in 1960. RAPP-1 was started in 1972 owing to 80t of Heavy Water imports from the United States through Canada. Soviet Union made imports of 456t of Heavy Water to India to keep RAPP-1 running and to start RAPP-2. India managed with the import of Heavy water till 1983. Shortages were faced in 1985 when India decided to start MAPP-1 without safeguards.

International reaction was mixed. France was the only country that congratulated India. China and the Soviet Union were quiet but critical of the tests. United States and Canada cut off all nuclear help to India. They felt that India had misused the help provided to produce a bomb. The immediate event following the peaceful nuclear explosion was the declaration of state emergency in 1975, which ended in 1977. A National Uprising was led by J.P. Narayana against Mrs. Gandhi. He followed the Gandhian principles and was opposed to the nuclear weapons like Morarji Desai. Thereafter Mrs. Gandhi stepped down and Morarji Desai assumed the Prime minister ship of India. He had a strong aversion towards nuclear weapons. He reinforced the
idea that India would not sign the NPT on the grounds of being unfair. This was a clear reflection of Indian image against the cold war politics and pursuing an independent foreign policy. By this time Pakistan was on its path of constructing the Kathua Uranium enrichment plant.

Nonetheless, Desai’s tenure in the office was short lived and Indira Gandhi along with the congress government returned to power with a significant majority in 1980. The period also coincided with the soviet invasion of Afghanistan. United States supplied Pakistan with military aid to enhance its weapons capability. F-16 fighter jets were supplied despite protests from India. China continued its help to Pakistan by providing help in buildings its nuclear program. There was a revival of United States-Pakistan ties after the Soviet invasion of Afghanistan. United States lifted the economic and military sanctions imposed on Pakistan16. Thus, United States was posing another threat to India by moving close to Indian adversaries. In 1983 the Defence Research and Development Organisation budget was increased and an Integrated Guided Missile Development Program was started. It also embarked upon the establishment of ballistic missile program. These led to the development of short range Prithvi missile and long range Agni missile series.

By this time Pakistani nuclear development was looming large on India and the Chinese security concerns had moved to the background. The assassination of Mrs. Gandhi in 1984 brought her son as the new Prime minister Of India. His nuclear policies were contradictory. He proposed the gradual elimination of the nuclear weapons, which is known as the Rajiv Gandhi “Action Plan” in 1988. The plan was the descendent of the Nehruvian disarmament vision. According to this plan, India would adhere to comprehensive test ban and banning the production of Fissile material. However, the absence of the will to do so on the part of the nuclear states like China obliged the non-nuclear states to look after their own security. However
the plan failed to create an impact as expected. But the increasing Pakistani nuclear activity compelled Rajiv Gandhi to restart the nuclear weaponisation in collaboration with the Defense Research and Development Organization. During his term India and Pakistan reached an accord of not attacking each other’s nuclear facilities, which was ratified in 1991. His interests lay in the military modernization that culminated in the biggest and largest military exercise “Brasstacks” conducted by India. The development indigenous ballistic missile technology under the guidance of APJ Kalam resulted in the successful testing of India’s first intermediate range ballistic missile, Agni, on May 22, 1989 from Chandipore in Orissa.

Three years after operation Brass-tacks, India and Pakistan got enmeshed in another crisis in 1990 over the Kashmir issue. The then Prime Minister, V.P. Singh organized a meeting with the top scientists, government advisors, Air Force Chief of Staff to evaluate the threat posed by Pakistan and the response initiation by India. He set up a committee to plan India’s moves in the wake of Pakistani nuclear attack on New Delhi. But before the committee could submit its report, the domestic political turmoil led to the collapse of V.P. Singh’s government and Chandra Shekhar succeeded him. But again this was a short-lived government and Narsimha Rao emerged as the Prime Minister and took the reigns of the nuclear policy in his hands.

He gave precedence to economic development over nuclear development. The collapse of Soviet Union, the emergence of United States as the global super power, change from bipolarity to unipolarity led to a change in the Indian Foreign Policy. His emphasis was on the integration of the Indian economy into global economy for a greater role in international community. Chinese economy was on the rise, which meant the growth of its military, economic and political strength. To prevent China from becoming the Asian giant India had to advance economically. Rao was of the opinion that the Indian economy was strong enough to conduct another nuclear test and bear the inflationary
effects of International sanctions. According to him inflation was more important than nuclear weapons testing.

On the international front the NPT was again brought forward along with the Comprehensive Test Ban Treaty (CTBT). Despite possessing nuclear capability, India’s believes in universal nuclear disarmament. It was important for Indian security that China joins CTB since India is threatened by the stockpiling of nuclear weapons. These external pressures could limit the Indian nuclear weapons program. However, its isolation by the international community, on this account, was short lived. Indo-American ties deepened. Jiang Zemin became the first Chinese President to Visit India and emphasized on building relations with India. It also declared that Kashmir was not an international issue and Pakistan should focus on stabilizing relations with India.

At the same time the domestic political situation was becoming against the Rao government and the Pro- Bomb BJP was pushing India towards a more robust nuclear policy. BJP based its argument on the fact that nuclear capability will facilitate India to be recognized as a strong power by the P-5. After being sworn in the as the new Prime Minister, Atal Bihari Vajpayee ordered Rajagopala Chidambaram and Kalam to proceed towards nuclear testing. But the tests had to be halted on the account of lack of vote of confidence in the Lok Sabha for Vajpayee. His successors, Deve Gowda and I.K.Gujral following the footsteps of Rao, believed in the Economic strength rather than nuclear testing. Regardless of this, expansion of the ballistic missiles continued. Short- range Prithvi was inducted in the Indian army. India gained international respect and recognition due to the magnanimous policies of I.K.Gujral.

But again due to the internal politics, Vajpayee as the new Prime Minister replaced him and Bhartya Janta Party became the ruling party. BJP
election manifesto had emphasized on the country’s nuclear policy. Acquisition of nuclear weapons would not only counter threat of Pakistan and China, but are also necessary to deter United States. Prime Minister Vajpayee viewed United States base of Diego Garcia in the Indian Ocean as a threat.

He embarked on the nuclear weapons program. Pakistan’s quick advancement in the missile technology made it imperative for India to conduct the nuclear tests. They were also seen as a shortcut to move with the China as a major Asian power. Finally, the tests were conducted in May 1998, which was followed by Pakistani nuclear testing. The BJP government have always been in favour of the nuclear bomb, whether in power or not. Their rationale for the nuclear weapons was not the security threat from Pakistan or China but to make India ‘strong’.

After the nuclear tests India announced that it had tested three nuclear devices: a fission device with a yield of 12kt, a thermonuclear device with a yield of 43kt, two sub kiloton devices with yields of 0.2 and 0.6. It possesses three different kinds of nuclear weapons simple fission design, a thermonuclear bomb and a tactical nuclear weapon.

The Indian nuclear tests put forth two objectives. First, to gain confidence about developing nuclear weapons. Second, to convey to the enemies about the technological prowess of India. The international community was alarmed by the nuclear tests conducted by India. The G-7, European Union, Australia and New Zealand imposed sanctions that terminated bilateral programs, reduced multilateral support and the technological assistance for the Indian civilian nuclear program. It truncated the military and diplomatic exchanges. This changed the security paradigm in South Asia. Immediately after the tests, both India and Pakistan, decided not to engage in a nuclear arms race. Thereafter, the Indian Prime minister and the Pakistani Prime Minister signed the Lahore declaration wherein the decided to
maintain good neighbourly relations, stop cross border terrorism, and maintain peace and stability in the region. The Indian Prime Minister made a bus trip from New Delhi to Lahore. In spite of these Confidence-building measures, Pakistani infiltrators entered the Indian controlled part of Kashmir in the Kargil sector. Many scholars are of the view that it was an attempt by the Pakistani side to make India aware of its nuclear capability. It was one of the major crises after the nuclear tests, which broke the myth that nuclear weapons capability would promote stability. Indian officials did not know how the Pakistani’s were managing their nuclear weapons. The International community appreciated Indian response of maintaining restraint and caution during the crisis. This reaction by the Indian government prevented the escalation of war into a nuclear warfare. Principal Secretary Brajesh Mishra said that India’s restraint "will drive home the point that a nuclear India can and does act in a responsible manner".

Another major event in the aftermath of the nuclear tests was the National Security Advisory Board’s Draft Report on the Nuclear Doctrine issued on the August 1724. The nuclear Doctrine was based on four principles namely- no-first use policy, minimum deterrence, civilian control of the weapons and commitment to nuclear disarmament. The most distinctive facet of the nuclear doctrine was the claim that the nuclear weapons are political tools and not military tools. India will never initiate the use of nuclear weapons but will do so only in retaliation. These weapons will not be a part of the armed forces due to their destructive nature. The decision to use them will be taken at the highest level and in the Indian case it will be the Prime Minister. This is unlike the Pakistani situation where the nuclear weapons are under the control of the army and the Prime Minister cannot even visit the nuclear site. Thus India would not use the weapons of Mass Destruction and would be used as weapons of defense. India firmly believes in nuclear disarmament despite possessing them itself. India developed nuclear
capability as a result of the acquisition of nuclear weapons by Pakistan with the Chinese help.

Pakistan’s nuclear weapons are linked with the Kashmir issue, the bone of contention between India and Pakistan, since Independence. Pakistan is the revisionist state in the South Asian region. The inclusion of Kashmir with the state of Pakistan would determine the fact that it is an Islamic country and religion determines Nationality. In the words of Prime Minister Vajpayee “New Delhi does not intend to use these weapons for aggression or for mounting threats against any country; these are weapons of self-defense, to ensure that is not subjected to nuclear threats or coercion”.

Pakistan believed that nuclear weapons would be able to deter India, coerce the international community, particularly United States, to settle the Kashmir dispute. However, US isolated Pakistan and appreciated India, which broke the myth of Pakistan. This US attitude can be justified on the grounds of the Helsinki Declaration of 1975 that there would be no alteration of the Line of control or the borders through force or threat of force. This would apply to Kashmir as well. During the same period, there was a military coup in Pakistan. This led to defeat of Prime Minister Nawab Shariff and General Pervez Mushraf became the President of Pakistan. Nuclear weapons serve an important purpose for a rising power like India. They provide protection against the military intervention of the major powers, protect the borders from attack by the neighbours. These facts convinced the Indian leaders of the necessity of developing nuclear weapons capability. This was also apparent by the name given to the nuclear testing “Shakti” which means “Power” in Hindi.

The nuclear tests conducted by India in 1998 have changed the security paradigm in the South Asian region. It has become a Nuclear weapon State. Pakistan is the only country in the region that has challenged this nuclear
superiority of India. It conducted nuclear tests immediately after Indian nuclear explosions of 1998 and has made the South Asian region one of the most volatile regions of the world. However, this nuclearisation has brought Deterrence stability. Since the acquisition of nuclear capability, the two countries have not been engaged in a full Scale war. Though, India and Pakistan are still enmeshed in Low Intensity Conflicts. Pakistan developed nuclear competence not indigenously but with the support of China and United States. Their motive was to use Pakistan as an outpost to prevent the rise of India as a regional power.

**Indian Missile Capability**

The well-crafted, planned and executed space research program has facilitated the indigenous missile development of India. The missile progress of India will deter Pakistan, safeguard the probable nuclear threat from China and help in attaining super power status. It will enable India to maintain balance in the Asia Pacific region. The research into ballistic missiles began with the setting up of Defense Research and Development Laboratory in Hyderabad in June 1962 which was followed by the Sino-India border clash. Later, Abdul Kalam was made the head of DRDL. In 1983 it created the Integrated Guided Missile Development Program (IGMDP) for the development of an indigenous missile infrastructure.

Its space research program stared in 1962 and made advances in space science and technology with the formation of Indian Space Research Organization in Bangalore. India launched its first space satellite, Aryabhatta in April 19, 197529. The satellite weighed 360 Kg. India’s second satellite was Bhaskar-I, which was launched in 1979. The successful launch of space launch vehicle (SLV 3) on August 10, 1979 gave India entry into the group of countries having global orbiting satellites. Thereafter India decided to use the capability for military purposes and decided to frame a plan for Integrated
Guided Missile development Program. The aim was to achieve self-sufficiency in the production of missile technology.

The first success of the missile program came with the triumphant launch of “Trishul” in 1987. It is a ground to air missile. This was followed by the launch of short-range ballistic missile “Prithvi” in 1988. It has a range of 150 miles and is completely Pakistan centric. This was developed with the Russian assistance and is the considered the Indian version of Russian scud missile. Indian moves towards the Intermediate range ballistic missile were visible with the testing of “Agni” missile in 1989. It has the capability of carrying 1000Kg payload with a maximum range of 2500 Km. Agni tests have been carried out thrice. The third test was the most successful and confirmed the development of reentry vehicle structure. Apart from these, “Akash” is another missile solely for Indian air force. It is a short range missile with a range of 25 Km. The missile uses an integrated solid rocket propellant system. “Nag” is the third generation anti tank guided missile with a range of 4 Km.

The Indian missile program is by and large indigenous with slight assistance from Russia. Four decades of Research, investment and development has shaped the present missile capability of India. It is now capable of deploying short- and medium-range nuclear ballistic missiles in an operational mode against any threat from Pakistan and China. At present it is involved in developing cruise missile capabilities. Recently, it inducted the “Brahmos” supersonic cruise missile in the Indian military, an Indo-Russian joint venture. However, India is limited and suffers set backs in its long range ballistic missile capabilities and plans to tests its capabilities in the near future.

The Indian army conducted the fifth successful launch of Agni-I early this year in the month of March. It is a surface-to-surface missile and was test
fired from the Wheeler Island, off Damra village, on the coast of Orissa. The launch was totally executed by the army and is an important landmark in the Indian strategic defense capability. Agni-I along with Agni-II and Agni-III form the triangle of India’s minimum credible deterrence. The Defense Research and Development Organization (DRDO) is now focusing on carrying out the launch of Agni-III, the third time. This is the most powerful surface-to-surface missile capable of carrying nuclear warheads. The test firing of Agni has enabled India to reach the vital centers of its adversaries. India is also making enormous strides in the space technology. India has launched various indigenous built satellites. The year 1999 was a major landmark in the space technology when India launched Polar Satellite Launch Vehicle (PSLV-C2). With all the advancements in the nuclear capability, missile and space technology, India has been able to maintain an average growth rate of 5-6% after the New Economic Policy in 1991.

The availability of fissile material is central to the nuclear weapons program. India wanted to develop nuclear weapons through plutonium to attain self-sufficiency and then mix this plutonium with thorium. Thorium is available in abundance in India. This would enable India to start a series of second stage reactor to produce uranium. This three stage process was conceived by Dr. Bhabha to make India self-sufficient in the nuclear weapons capability. Thus plutonium became vital fissile material for the Indian nuclear weapons program.

**Nuclear Triangle (India, Pak and China)**

In 1998 India testified a great range of nuclear explosion at Pokheran (Rajasthan) and declared himself a Nuclear weapon state. Though India Nuclear power was targeted by the stream of peaceful coexistence. Just after nuclear test India bound himself in the declaration of “No first use".
After the events of 1998, there has been a change in the security paradigm of the South Asian region. A nuclear triangle of India, Pakistan and China has emerged making the South Asia the most volatile region of the world. They form the triangular power nexus that dominate the polity in the region. This power triangle is unique since the three nuclear countries share disputed borders, which have resulted in conflicts and cross border terrorism. This has resulted in security implications for the three countries, since they face a threat from each other. All three states are nuclear weapons states and have been engaged in limited conflicts. The three countries also differ in their political set up. India is a democracy, China a communist country and Pakistan oscillates between authoritarian regime and democratic institutions.

Nuclear weapons have become a vital element of security since the cold war times. Maximization of national power and safeguarding national security are the driving forces for the nuclear development by the countries. Chinese and the British nuclear program started to gain international prestige in as political and technological powers. Acquisition of nuclear weapons by countries other than the P-5 countries was viewed as the proliferation of arms race. During the Cold war the two super powers prevented the escalation of nuclear wars and maintained peace and stability in the international system. With the end of cold war, there began a race for the possession of nuclear weapons particularly among the Third World countries.26

In the Southern Asia, India and Pakistan are the two nuclear weapon states posing a threat to each other. But the driving force for the two countries in developing nuclear capability was China. Prior to Chinese nuclear testing the two countries showed no interest in developing nuclear weapons. The nuclear test of 1964 brought nuclear weapons into the region. There is a probable risk of a nuclear warfare between the countries relating to the Kashmir issue. Kashmir can trigger the spark of nuclear conflict between India and Pakistan. However the two countries believe in maintaining
deterrent capability to prevent the occurring of heavy losses. Both the countries have declared no-first-use policy and use of nuclear weapons in retaliation. The growth of the nuclear weapons program of Indian and Pakistan can be related to the nationalistic feeling. The existence of the state of Pakistan is always questioned particularly after the liberation of East Pakistan. Its convention weaponry is not with power with hostile neighbors. Pakistan saw nuclear weapons program as an opportunity to compensate for these weaknesses. Acquisition of nuclear weapons would add prestige to the nation state of Pakistan. Indian nuclear weapons program was the effort of the scientific community to put forth the indigenous technological advancements after the independence. Indian nuclear doctrine is based on the principles of minimum credible deterrence and no-first-use policy. This reflects qualities such as reasonableness, maturity and moderation and makes India a responsible nuclear weapon state. Scholar said that India is a responsible nuclear power because the technology was his own.

Nuclear weapons greatly impact the Inter-State relations. Acquisition of nuclear weapons guarantees security to the physical integrity and independence. It prevents the outbreak of a total war between the antagonistic states and nuclear weapons have enabled the weaker states to defend themselves against the powerful states. On the negative side nuclear weapons can cause colossal damage. Incase of nuclear exchange between India and Pakistan, the destruction will be manifold. It will result in an "acceptable" number of deaths. India and Pakistan are in close proximity and their industrial establishments are located in few cities. Dropping of nuclear bomb or exchange of nuclear and missile weaponry will result in disruption of the societies on either side and may even cross the boundaries. Both the countries lack emergency and health management infrastructure to deal with situation after the nuclear warfare.27
Both India and Pakistan have fissile-based nuclear weapons and their delivery systems. It is difficult to create a nuclear free zone in South Asia. Only a weapons control policy can be adopted. The growth of their ballistic missiles has led the region towards an arms race. Both the countries have sizeable stock of fissile material outside the scope of IAEA safeguards. The declaration of the no-first-use policy in the nuclear doctrine would enable India to gain international support and sympathy. Lack of resource base and the technical know how handicaps Pakistan to adopt credible minimum deterrence as its nuclear doctrine. Pakistan must engage with India in bilateral talks on the security issues. Issues like nuclear stability, Kashmir problem must form the basis of the South Asian diplomacy. Western countries like United States can play a very important role in reducing the risk of nuclear war in the South Asian region. By providing experience and expertise on command and control of nuclear weapons, United States can prevent nuclear exchange between India and Pakistan. The traditional hostility should be converted into effective cooperation for the development of the region.

The nuclear environment in the South Asian region became significant when India conducted its nuclear tests for peaceful purposes. This gave impetus to Pakistan to develop its nuclear capability. Following this, China began enhancing its nuclear and missile capabilities. The crisis of 1987 also referred to “Operation Brasstacks” was the largest military exercise conducted by India. Fearing the transformation of the exercise into an attack; Pakistan launched its defensive mechanism, Operation Sledgehammer. During this crisis, Pakistan indicated that it had acquired nuclear capability. The immediate follow up of the Pakistani military exercise; Zarb-i-Momin was the crisis of 1990. However none of these were conducted with the nuclear weapons in hand, they signaled the threat to build, the threat to prevent their construction and the threat of future use of nuclear weapons.

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The civil military relations in India and Pakistan play a major role in the nuclear weapon doctrines and operations. In India civilian form of government has been ruling the country since independence. It takes strategic decision relating to foreign policy and defense policy. The military is under the control of the government with little influence in nuclear decisions. On the contrary in Pakistan, the military rules the country taking all-important decisions on foreign and defense policies. The nuclear arsenal is under the complete control of the army even when a civilian government is in power.  

The Deterrence Theory was developed during the cold war period to deal with Soviet Union and United States. It was meant to maintain the balance of power in the international system particularly after the two super powers acquired nuclear weapons. According to Bernard Brodie nuclear weapons would peace and stability rather than war. The structural deterrence theorists propose the idea that it brings strategic stability. The cost of the nuclear war being high, a small risk of war is also deterred. The states are deterred from using nuclear weapons since they do not know the damage they will suffer. Another deterrence theory is the decision-theocratic deterrence and it emphasizes on the choices, preferences that will lead to stability. This becomes very important if the leader behaves irrationally and considers nuclear war as a means of conflict resolution. Rational decision-making by the leader becomes very vital for deterrence stability.

China’s Role in Nuclearisation of India and Pakistan

Role of China in Nuclearisation of India and Pakistan is the burning question in the mind of every defence aware personality. The nuclear ups and downs made serious after Chinese nuclear test in 1964 in South Asia. Though China is not a land of south Asia yet her domination on south Asian security environment is great. As China is a nuclear weapon state since 1964, its presence has spoiled the balance of power in South Asia also.
of China is the decisive factor to nuclearisation of India and Pak, because India have to acquire nuclear weapon due to China's accessibility and Pak has to due to India one.

China is the third country in the triangle. It entered the nuclear hub after testing its nuclear weapons in the Lop Nor region in 1964. The nuclear deterrence of South Asia cannot be confined to the geographical limits. Nuclearisation of the region is intertwined with external actors particularly China. Chinese nuclear alliance with Pakistan was not only to contain India but also to limit the western powers influence in the region. Chinese association with Pakistan was because of the long border with the unstable Chinese Muslim province of Xinjiang. For Pakistan, friendship with China would leave only one super power to confront that is India. Supporting Pakistani nuclear weapons program would keep India tied down and pave the way for the smooth rise of China as an Asian super power. However the nuclear tests of May raised uncertainties about the South Asian region. To prevent the emergence of new nuclear powers, China joined the various international nonproliferation regimes.

Indian enthusiasm towards the nuclear weapons program was due to the Chinese threat that India faced and not to balance Pakistan. Indian planning has always centered on China. Indian conventional weapon superiority was adequate to deter Pakistan. Pakistan was almost periphery to India prior to the 1960's and 1970's. But for Pakistan the driving force for the nuclear weapon development was the Indian threat. It wanted to counter the dominance of the Indian military as the nuclear weapons would provide Pakistan the deterrence to counter the Indian invasion or the Indian backed Pakistan break up. But the Pakistani nuclear weapons development provided the pace for the development of the Indian nuclear program. But India does not occupy a central place in the Chinese policies. However there was a change in the scenario in the 1990's when India was emerging as a major
power. China felt India to be the biggest obstacle in its path to becoming the Asian super power and then the global super power. Their naval build-ups to gain control of the blue water of the Indian Ocean are the clear indication of the Sino-India competition and rivalry in the near future. Added to this is the continuous support of the Chinese in the Pakistani nuclear program. India feared threat with the development of the Chinese nuclear weapon program. Pakistan grew suspicious about India developing its nuclear capability as a reaction and this would be a major threat to Pakistan. India’s refusal to sign the NPT strengthened Pakistani suspicion. Various conferences and debates were held in India after the Chinese nuclear explosion. These lay the foundation of Sino-Pak “special relationship”. This led both India and Pakistan to build their nuclear deterrence.

Indian nuclear program was a slow process since all the leaders were not enthusiastic about developing this capability. Also the Chinese nuclear support to Pakistan was slow since it was preoccupied with tensions with India and domestic turmoil of Cultural Revolution. China had declared no-first-use policy and minimum nuclear deterrence. But China active by supported Pakistan in all the border wars with India. It has been the largest supplier of military equipment to Pakistan. This growing alliance left no option for India but to move closer to Soviet Union. In 1971, India and Soviet Union signed the treaty of Peace, Cooperation and Friendship. This kept both the US and China out of the border dispute of 1971 and helped in the expansion of the Indian nuclear program. China feared Soviet intervention incase of help to Pakistan against India.

These events marked the deteriorating ties of China with India and Soviet Union and it moved closer to Pakistan. Pakistan also declared to enter into a military pact with China if Indian threat continues to persist. Thus the anti India factor common to both became the reason for Pakistan and China to move closer to each other.
China’s active support to the Pakistani nuclear program can be attributed to various other reasons. It wanted to keep the western powers away from the region prone to Pan-Islamic movements. Deteriorating Sino-India relations particularly after the escape of Dalai Lama to India fostered greater cooperation with Pakistan. Pakistan became the Chinese “Bulwark”\textsuperscript{34} in the South Asian region. India’s nuclear test in 1974 changed the security environment of the region and made China apprehensive about the growing Indian dominance in the region.

The Bangladesh liberation transformed the South Asian security scene. From the Chinese perspective, it made India a powerful country. Thereafter it increased its involvement in the Pakistani nuclear program. This was an attempt to make nuclear deterrence central to Indo-Pak relations. China’s decision to play a more active role in the nuclear program of Pakistan was formalized by an agreement in September 1974. Bhutto played a very important role in developing cordial relations for defense cooperation between Pakistan and China.\textsuperscript{35} His death was a major set back but the Soviet invasion of Afghanistan normalized the relations. It was a period, which resulted in deep US assistance to Pakistan despite wanting to curb the Pakistani nuclear weapons development. US also overlooked China’s support to Pakistan’s nuclear and missile development.

Bhutto’s successor, Zia, revived the nuclear cooperation with China. China was becoming directly involved in the nuclear program by supplying nuclear weapons design, highly enriched uranium and nuclear scientists for the Kahuta nuclear facility.\textsuperscript{63} China supplied a 40 MW heavy water research reactor for the Khushab facility and this new facility produced plutonium and tritium. This made it possible for Pakistan to develop advanced nuclear weapons and their delivery systems. Despite External pressure from the US, China did not stop its involvement in the nuclear program. In March 2004, the two countries signed an agreement for the construction of a second nuclear
power plant at Mianwali on the banks of the Indus River in the Punjab province.36

In the present times, the China-Pakistan axis of nuclear cooperation is very low profile. China’s main motive is to prevent the escalation of a total war between India and Pakistan and to check the growing power of India. This is a major challenge to the Chinese desires of becoming Asian super power and later the global superpower.

As we are discussing China Role in Nuclearization of India and Pakistan, we should be cleared that though Pakistan presently self declared Nuclear power but his capability to defence nuclear arms from terrorist’s hand is also suspected. In the recent days Pak President Mr. Asif Ali-Zardary says in a statement “Pakistan is fighting with terror for his survival and if Pak defeated then the terror will get victory.”37

The security competition in Southern Asia is dominated by India and Pakistan and India and China. All the three countries are declared nuclear weapons states forming the nuclear triangle in South Asia. They have altered the security model in the region. South Asia region is viewed as the most volatile region in the world because of the presence of two nuclear states and the persistent conflict between India and Pakistan.

Though Pakistan is born out of India, Pakistan is a totally different country in all aspects. It is an Islamic country following rules of Shariah. Authoritarian regimes have ruled the country since its inception. It is the final authority in the country and takes all-important decisions relating to politics. Even when the civilian government is in power, the military is all-powerful. Islam is the dominant religion and with the growth of the Pan-Islamic movement in the aftermath of 9/11 attacks, Pakistan has become to combat terrorism. The dominance of the army and the failure of civilian government to rule the country have created problems for Pakistan. There are no
democratic institutions, institutional norms and practices. Coupled with this is the economic crisis, which the country faces. It is totally dependent on the foreign counties for aid and assistance.

**Nuclear issue and Indo-Pak relations**

Indian economy in comparison to that of Pakistan has been more promising. After adopting New Economic Policy during the tenure of P.V.Narsimha Rao. The country has made significant strides in the economic front. It changed from a closed economy to an open economy and was able to welcome the Foreign Direct Investment to enhance its economic growth. Since independence, India has been following democracy as the form of government with little army interference in the polity. Institutional norms have been the order of the day and kept the secularity of India intact. However, poverty has plagued the country with no permanent solution to it. This has been a major reason in the slow advancement of the nuclear program, which picked up in the post 1991 period.

Despite these problems the two countries developed nuclear weapons. But the Indian nuclear weapon capability is far more advanced than the Pakistani nuclear capability. Pakistan overcame the problems by gaining support of the extra regional powers, China and United States. Foreign aid supported the expansion of the Pakistani nuclear program.

South Asia cannot be made a nuclear free zone since the India and Pakistan have become overt nuclear states. But steps can be taken to restrain nuclear competition between them. This will prevent nuclear exchange in the sub-continent and destruction in both the countries. The two countries have undertaken various nuclear and security confidence building measures to prevent nuclear conflict between them. They both lack effective mechanisms to deal with the after nuclear crisis. Being well aware of each other’s nuclear capabilities and the destructive character of the use of nuclear weapons, India
and Pakistan adopted various nuclear Conflict Building Measures and nuclear risk reduction measures. But they both failed to achieve a lasting peace in the region. The confidence building measures have been adopted since the beginning of hostility between India and Pakistan. The Tashkent Agreement (1966), The Shimla Accord (1972) and the Lahore Declaration (1998) are cases in point. In the aftermath of operation Brasstacks and the Pakistani response of Zarb-i-Momin the two countries became aware that both possessed nuclear facilities. In 1988, India and Pakistan signed an agreement, which called for the non-attack on the nuclear facilities on the either sides. This was ratified and implemented in 1992. In 1991, India and Pakistan signed the Agreement on the Advance Notification of Military Exercises and Troop Movements.

In mid October-November 1998 during the foreign Secretary level talks held in Islamabad, it proposed a, “Peace, Security and Development Initiative for South Asia”. The initiative proposed a Strategic Restraint Regime in South Asia, which suggested.

- Nuclear restraint and stabilization.
- Prevention of nuclear and missile race in South Asia.
- Establishment of risk reduction centers.
- Non-induction of Anti Ballistic Missiles and SLBM systems.
- Balanced reduction of armaments
- Conventional restraint and stabilization.
- Formalizing nuclear testing.

The Lahore declaration was signed by India and Pakistan before the nuclear tests in February 1998. The Lahore New Delhi bus service was resumed and the two countries decided to combat terrorism together. It was considered the high point in the Indo-Pak relations but the nuclear testing by
both the countries led to the deterioration of relations. The Kargil conflict was
the immediate follow up of the Lahore declaration. A step forward in the
nuclear CBM's was the signing of Memorandum of Understanding by the
foreign secretaries of the two countries in 1999. The MOU emphasized on
the bilateral consultations on security, nuclear doctrines. The two countries
decided on giving advance notices in case of ballistic missile flight tests. In
2001, Agra summit was held in India, which was followed by the attack on
the India Parliament in December 2001. During this summit India insisted on
the withdrawal of Pakistani support to the terrorists.

The stability-instability paradox focuses on the escalation of crisis
when the countries have acquired nuclear capabilities. It has two main tenets.
According to the first tenet, nuclear capabilities can increase tensions between
the adversaries. According to the second tenet despite the escalation of the
crisis the adversaries will not employ nuclear weapons and prevent the
nuclear flare up. In the case of South Asia the first tenet holds true. After
India and Pakistan conducted nuclear tests in May 1998, tensions and
apprehensions arose between the two regarding each other's nuclear
capabilities. It was immediately followed by the Kargil conflict. The second
tenet is difficult to prove because the future is unpredictable. Though both
countries has avoided the use of nuclear weapons in the Kargil conflict and
the 2002 crisis. In the near future break down of nuclear deterrence may
compel them to get engaged in a nuclear war. Kashmir will be the trigger for
the nuclear exchange.

Deterrence in the South Asian region has both positive and negative
consequences. On the positive side, the overt nuclearisation has prevented the
escalation of conflict between India and Pakistan. It has brought stability in
the region since both countries have adopted a rational approach in the use of
nuclear weapons. In the wake of the growing nuclear capabilities the only
salvation is cooperation rather than confrontation. The awareness about each
other’s nuclear capabilities has prevented a total nuclear exchange between India and Pakistan leading to the stability in the region. It has led the two nuclear states to adopt nuclear confidence and security building measures. According to General Sundarji, "the only salvation for both the countries to follow policies of cooperation and not confrontation. A mutual minimum nuclear deterrent will act as a stabilizing factor. Pakistan will see it as counteracting India’s superior conventional power potential and providing a more level playing field. The chances of conventional war between the two will be less likely than before".42 In the words of General K.M. Arif, “The nuclear option will promote regional peace and create stability”.

The other school of thought considers the overt nuclearisation of South Asia has leading to instability in the region. The nuclear pessimists hold the view that in case of a direct military conflict the chances of nuclear exchange in the region is very high. Lack of communication skills and trust between India and Pakistan will lead to nuclear warfare in South Asia. In V.R. Raghavan opinion, “the probability of nuclear war between India and Pakistan is high, in the event the two countries engage in direct military conflict”.43 The mere presence of nuclear weapons has brought about instability by creating apprehensions in the minds of the two countries about each other. They believe that in times of deep crisis, weak institutional structures, and rational decision-making can lead to the breakdown of deterrent stability. Pakistan being a military regime has the possibility of state failure that could cause instability in the region. Nuclear stability depends on the conventional forces where India has an edge over Pakistan. India has been spending an enormous amount on the enhancement of its military tactics. Its expenditure is three times more than what Pakistan spends on its military. This has enabled the Indian military forces to employ new strategies and policies in an armed conflict with Pakistan. This growing military capability along with deficiencies in the Pakistani conventional military forces can
increase the nuclear threat in South Asia. Most of the Nuclear Risk Reduction and confidence building measures have not been successful. It is important for the two countries to undertake certain effective measures to maintain deterrence stability and prevent nuclear exchange.\textsuperscript{44}

According to a report published by the Stimson center, the instability remains high on the in the South Asian sub-continent. The leaders of India and Pakistan have engaged in Brinkmanship. Pakistan continues its links with Islamic movements and terrorist, it provides training to the Islamic fundamentalists and supports cross border terrorism along the LOC. On the other hand, India threatens any Pakistani moves through the mobilization of troops along the border. These actions can lead to an escalation of crisis benefiting neither country.\textsuperscript{45}

In the South Asian context the stability- instability paradox is liked with the Indo-Pak regional disputes primarily relating to the Kashmir question. Pakistan’s continued support to the insurgents in the valley; regular border skirmishes are the reasons for the prevalence of instability in the region. This is because Kashmir is critical for the national identities of the two countries. Both India and Pakistan have used force to coerce each other, which has led to the escalation of the crisis. However in the post nuclear testing, stability between the two countries seems to evolving. The nuclear weapons have brought about deterrence in the region and the US intervention has helped to diffuse the problem. The conflict between India and Pakistan is an asymmetrical conflict since Pakistan is the smaller and the weaker power. India is the biggest country in the region in terms of size, geography, military capabilities, science and technological advancements.\textsuperscript{46} Economically it is more advanced than any other in the region. Hence, India is considered a hegemonic in the region and particularly by Pakistan. Pakistan poses the biggest challenge to the Indian dominance in the region. The Islamic nationalism as against the secular belief of India is the main element of
animosity between India and Pakistan. The Kashmir Problem is related to this nationalist sentiment of the two countries. It is the bone of contention and has been transformed into a stage of nuclear exchange between the two countries after the nuclear testing in 1998.

Pak attempts to reduce inferiority in relation to India’s power by China’s support

Pakistan has tried to reduce this asymmetry by following strategies, forming alliances with extra regional powers particularly China and the US. The military superiority of India was being matched by the acquisition of nuclear weapons. China and US played a very important role in the development in the Pakistani nuclear weapons program. China supplied various nuclear equipments, materials and helped in the missile development program of Pakistan.47 US provided enormous military and economic aid for the expansion of nuclear program.

The South Asia region is on alert since declaration of India and Pakistan as the nuclear weapon states. This along with territorial proximity, sharing long borders makes them prone to a nuclear conflict. They have fought four major wars and the Kargil conflict was guided by the nuclear ambition of Pakistan. This has made South Asia the nuclear flashpoint of the world since the wars between India and Pakistan are continuing and only the nuclear dimension was added the hostility.

United States is the ace player in the region. South Asia gained prominence in the American policy as a part of the containment policy of United States against Soviet Union. This included Pakistan admission into various western military alliances like SEATO and CENTO. American base of Diego Garcia in the Indian Ocean provides an important base for strikes by nuclear capable bombers into Afghanistan. Pakistan also serves as an important base for launching attacks against Afghanistan. United States war
on terrorism has made it to look towards South Asia since Pakistan; a Muslim state will be a good support.\textsuperscript{48} United States set up a military base in Jacobabad, in the center of Pakistan to carry out special operations against Afghanistan. The strategic environment is greatly impacted by the US policies and programs in the region. They have a direct bearing on China and India, the two regional powers. China is the biggest competitor for the US in the region. It perceives the American missile advancement in the region as targeted against it. It views the American moves as a major stumbling block in the Taiwanese reunification with the mainland. This has given impetus to the modernization of Chinese military, nuclear and missile capability.\textsuperscript{49} These countermeasures of China against US have led India to enhance its defense capability in case of attack by China. Though Pakistan is a nuclear weapon state and the only challenger for India in the region, its role is limited.

In the context of the Kashmir issue between India and Pakistan it acts as a stabilizing factor. It emphasis on holding bilateral dialogue to solve the Kashmir problem. It acts as a facilitator between India and Pakistan but only on request. It has played an active role in the CBM’s in the region and persuaded the leadership to avoid the nuclear brinkmanship scenario in the sub continent.

So long as the war on terrorism and the Afghanistan assume the position of centrality in the American policy agenda, South Asia will occupy an important position. It will also enable US to counter check the Chinese ambitions of becoming a global super power or the Asian super power. It will balance the power in region and keep the hegemonic and the dominant position of US in the international system intact.

**Stream of Indo-China antagonism and India attempts to nuclearise itself**

The major outsider regional player in the South Asian region is China. It is a nuclear power that has altered the strategic environment in the region.
China and India have been at loggerheads with each other since the border dispute in 1962. Tension between the two countries also relates to the state of Arunachl Pradesh. China treated it as an integral part of its territory but it was granted statehood under the Indian Union in 1986. India conducted a military exercise through operation Checkerboard in 1987 and the Chinese attempt to reinforce the border kept the relationship between the two countries tense. Added to this is the problem relating to the presence of Dalai Lama and Tibetan refugees in India, which is perceived by China as a threat to its territorial integrity.  

Similarly, India is apprehensive about the China’s role in Kashmir and the support to Pakistan in its nuclear and missile development program. It has played a very active role in the developing the nuclear capability of Pakistan by supplying them with material equipment and training facilities. This served an important purpose for china. By doing this China hoped to prevent the rise of India, which was the biggest challenge to its ambitions of becoming a regional and then a global super power.

Various confidence-building measures were undertaken to normalize relations between India and China. During the tenure of Rajiv Gandhi Joint Working Groups (JWG) were formed to settle the border scores between India and China. But the normalization of relations suffered a set back after the nuclear testing by India in May 1998. The Indian rationales for the nuclear testing was the threat from the expanding nuclear capabilities of China posing a challenge to the Indian security.

As India’s Defence Minister Mr. George Frandeez singled out China as India’s number one security threat. Just after India’s nuclear test in May 1998 at Pokheran. Indian Prime Minister Mr. Atal Bihari Vajpayee wrote to U.S.A. President Bill Clinton, justifying Indian nuclear test that due to the present of a nuclear weapon state. India’s security sensitivity has been increased so it
was become necessary to have minimum nuclear deterrent for India. Thus, the stability-instability continues between India and Pakistan. US and China will also continue play a major role in the South Asian politics. This serves an important aspect of their ambitions in the world politics. For the US Pakistan serves an important base to fight terrorism. China’s support to Pakistan will keep India weak and engaged in internal politics. This will prevent the rise of India and pave the way for China to emerge as an Asian giant and global power.

India and Pakistan confrontation will continue until the leaders of the two countries undertake security and confidence building measures. Bilateral negotiations should be of prime concern since the two countries have become nuclear capable and are aware of each other’s nuclear capabilities. This will prevent the nuclear crisis in the region and will maintain peace and stability in the region. Thus on the basis of above study we can say that China being a nuclear power in early has filled India with inferiority about nuclear issue, so Indian nuclearisation was the result of Chinese threat. On the other hand Pakistan’s nuclear programme is caused by the stream of competition with India but China is also the Chief cause to nuclearise Pakistan because China facilitates Pak to develop the nuclear weapons. Pak was not in the condition to nuclearise itself without Chinese technological and strategic support.
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