Chapter V

Nuclear Policy and Doctrine: the Command - Control Challenges

Nuclear Policy of Pakistan

In the early periods of the nuclear programme, unlike India, Pakistan did not have a well defined nuclear policy especially due to the immature nuclear programme, the internal political turmoil, unstable government and lack of leadership. Pakistan’s actual nuclear policy began after 1958 during the period of Ayub Khan. This policy contained the use of nuclear energy for peaceful purposes (Tabassum; 2003: 63). Until it tested the nuclear weapon in 1998, Pakistan had followed an ambiguous nuclear policy with frequently altering and contradicting statements by the heads of the government. When looked into the entire nuclear policy it could be seen that the nuclear policy was shaped and shifted to deal with the Indian threat. This ambiguous and India centric nuclear policy was almost carried out similarly by both the civilian and military governments. At the official level, the policy was designed in such a way to counter the pressure on its nuclear programme. So there was a kind of deliberate ambiguity from the Pakistani officials. Also revert the international pressure towards India and create a regional arrangement for non proliferation along with a repeated desire for the systematic elimination of nuclear weapons at the international level (Tabassum; 2003: 62). Initially Pakistan chose a policy that stood for peaceful use of the Nuclear energy and it carried out the nuclear programme for the same. As part of this policy it established nuclear institutes and medical centers. Before 1974, Pakistani nuclear policy contained the aspects such as to build up scientific and technological base with the financial resources, develop nuclear energy for peaceful purposes, support nuclear arms control measures and disarmament proposals and demand India’s nuclear facilities to be put under international safeguards and inspections (Singh; 2007:140).

Similarly, with the other areas of policy making the nuclear policy making was also limited to a small group. The Pakistani nuclear weapons programme operates nearly autonomously from the larger political system. But apart from A.Q. Khan and
the technical personnel who actually perform the nuclear research and development, the decision-making circle is not much larger than President Ghulam Ishaq Khan and the army chief of staff. This was the scene in almost all the regimes. Neither the military rulers nor the civilian leaders wanted to discuss the nuclear issue in the public. During her first regime, Prime Minister Benazir Bhutto, from 1988 to 1990, put nuclear programme under strict secrecy (Perkovich; 1993: 90). Policy making in the realm of security, including the nuclear field, has been the preserve of the Pakistani military with the assistance and willing collaboration of the civil bureaucracy, including the nuclear scientific estate (Ahmed; 2000: 783). Pakistan has not published an official policy on how it plans to use its nuclear weapons. It has not yet drafted a nuclear doctrine which states its nuclear policy. The actual sources of the Pakistani nuclear policy are the statements by the officials and the writings by knowledgeable Pakistanis especially the high ranking military officials who had close link with the military administration. The statements by the civilian and military leaders do not provide coherent doctrine that guides the use of nuclear arsenals. They do not state about the management of the nuclear forces effectively (Perkovich; 1993: 88). Pakistan’s nuclear weapon policy primarily relates to the use of nuclear weapon for deterrence, particularly deterrence against India. These sources reject the ‘no first use policy’ and support the minimum credible deterrence.

Pakistan’s nuclear policy revolves around three basic tenets: (i) a nuclear threat warrants a nuclear response; (2) nuclear force will act as a force multiplier to balance the asymmetry in conventional forces; and (3) there should be a regional solution of non proliferation issues (Khan; 2008: 255). Both the civilian and military rulers attempted to link the nuclear policy with the sovereignty and prestige of Pakistan. Frequent statements by the Pakistani officials disclose that Pakistan’s nuclear policy is built around the twin principles of ‘restraint’ and ‘responsibility’ (Salik; 2009: 82).

As Pakistan plunged into the weapon programme its nuclear policy was much concerned about expanding its nuclear programme as well as defending the Indian threat and the international pressure. Looking from another angle, Zalmay Khalizad had observed that the Pakistani nuclear policy was a ‘three-pronged’ one which contained the expansion of the nuclear programme, demand for nuclear free zone of
the region and strengthening conventional forces. He says “First, Pakistan has expanded its own nuclear program. Allocations have been made in the 1975-1976 budget, for setting up a 500 MW nuclear reactor near Kundian in the Chashma Baghage area of Punjab. In contrast to IAEA’s "optimum" energy solution of a reactor in 1982, another one in 1987 and one in 1988, the Pakistani Government plans that starting in 1980 one reactor will be installed every two years until the end of the century. Second, Pakistan will continue its effort to embarrass India in international forums by demanding that South Asia be made a "nuclear-free zone of peace," that India should open its nuclear installations to international inspection, and that India should never undertake the production of nuclear weapons. Third, Pakistan is working hard to build up its conventional military forces (Khalilzad; 1996: 589).

Nuclear policy and the evolving factors

The ‘India Factor’ was the most influential factor in the nuclear policy making. The covert nuclearization, the nuclear policies of deliberate ambiguity, minimum credible deterrence and the ‘first use’ are primarily intended to deal with India. In terms of deterring India’s nuclear weapons, Pakistani leaders demand for a small nuclear force of undetermined strength, which will be used either to stop the Indian invasion or to deter India’s nuclear forces by threatening retaliation against Indian cities (Rajagopalan; 2005: 5). The quantitative level of the minimum credible deterrence’s is by and large related to the Indian nuclear force. From the 1970s onward, however, strategic issues precipitated by Indo-Pakistani nuclear rivalry primarily shaped Pakistan's nuclear policy and postures. Similarly it can be asserted that Pakistan's nuclear policy will follow its past patterns, and India's nuclear posture will still determine Pakistan's nuclear policy (Chakma; 2002). But it does not mean that it is the sheer nuclear potential of India that influences the nuclear policy of Pakistan. Overwhelmingly, Pakistan’s nuclear policy is to be received in the context of the Indo – Pakistani relations as Pakistan perceives its insecurity emanating from conventional asymmetry existing in favour of India. Therefore, primarily the nuclear policy is framed to deter the Indian conventional superiority.
Pakistani policy on the international non-proliferation system revolved around the Indian position and its national interest. Also, the policy often shifted as it was linked to the Indian policy. Pakistan shifted its position on the CTBT twice during 1998-99. Within a couple of months after the nuclear explosions, Pakistan de-linked its position with India's and maintained that Pakistan would decide the issue on the basis of its national interests. Due to the fear of withdrawal of U.S. sanctions against it, Pakistan decided to sign the CTBT. But in mid-1999, Pakistan changed this position, linking its acceptance of the CTBT with India's signing it (Rizvi; 1999: 217).

One of the reasons why Pakistan was late in forming its nuclear policy was its policies were reactive to India. Pakistani officials have been even more circumspect, preferring to wait and see what India is planning to do before announcing their own policies (Strobe; 1999: 119). Pakistani officials while deciding the nuclear policy have also indicated that this nuclear posture is designed to preserve territorial integrity against Indian attack, prevent military escalation, and counter its main rival’s conventional superiority (Kerr and Nikitin; 2009: 7). *Pakistani decision-makers in the early 1970s saw nuclear capability as the best option for counterbalancing India; conventional means were expensive, had a short shelf life, and their availability was dependent on the goodwill of foreign powers. They concluded that nuclear weapons were the cheapest, most effective and reliable route to national security* (Rais Rasul; 2005:147). The rumours about the Indian nuclear test made Pakistan's policy makers upset. The press reports in 1995 and 1996 predicted that India would resume nuclear testing. The potential of Indian nuclearization threatened Pakistan's security parameters, which were based on the principle of ongoing nuclear ambiguity; consequently, the policy makers made a quick review of their nuclear policy so as to respond effectively to the expected Indian test. (Rizvi; 2001: 945).

Yet another factor that has influenced the Pakistani nuclear policy is the desire to attain self-reliance in defence capability (Ramusino and Martellini; 1999: 95). The nuclear policy was also driven by the prestige factors, especially becoming the first among the Islamic nations. Pakistan believed that the nuclear potential would accentuate its status among the Muslim nations and leadership of the Islamic world (Farzana; 2002: 47). According to Z. A. Bhutto, Pakistan’s nuclear programme was intended to make it stronger (Khalizad; 1996: 589).
Leadership both in the military and civilian administration played a vital role in the nuclear policy of Pakistan. Personality of Z. A. Bhutto substantially influenced the Pakistani nuclear programme and its policy formulation in the 1970s. With Mr. Z.A. Bhutto coming to power, Pakistan’s nuclear policy underwent a perceptible shift. With regard to the nuclear option, bilateral and international nuclear relations, nuclear arms control policies and safeguards Bhutto initiated a different and committed approach (Singh; 2007: 141). Z.A. Bhutto called a secret meeting of top scientists and bureaucrats at Multan and announced his determination to build nuclear arms. He launched ‘Project 706’ for the same (Tabassum; 2003: 50). Pakistan’s nuclear policy underwent remarkable changes during the time of General Zia. On the one side, he gave the Islamic character to the Pakistani Bomb and on the other side he opted to sign the NPT, if India signed it. This stand was also aimed at the Indian Nuclear Posture. With General Zia’s military coup, the nuclear programme was completely brought under the control of military. Thereafter, there were serious efforts to weaponize the programme, though there was assurance of nuclear use for peaceful purposes in the international and regional forum (Singh; 2006: 8).The nuclear policy during Benazir’s time had two faces. One that resembled the peaceful purpose of the nuclear programme was revealed to the world. The other that opted for the clandestine nuclear weapon programme was hidden. Prime Minsiter Nawaz Sheriff also continued this double faceted policy.

Z.A. Bhutto had a policy which strongly demanded the nuclear weapon capability. He always related his nuclear policy with that of India and on various occasion he reiterated that if India develop an atomic bomb we too will develop. General Ayub Khan though initiated the nuclear programme, didn’t preserve a policy to develop nuclear weapon but his policy stated that of having a bomb if India develops it by ‘buying from shelf’. Samina Ahmed argues that though civilian governments were formed after direct military rules, the actual policy making particularly on security matters, including the nuclear policy was dominated by the military. “Security policy remains the military’s responsibility and elected civilian leaders continue to play a limited role in either the formulation or the direction of Pakistan’s nuclear policy” (Arnett; 1998: 57). There are views that general Zia linked the nuclear programme to military doctrine (Rajain; 2006: 308). Zia proved more
adept in administering Pakistan’s nuclear policy. He deliberately generated ambiguity, took calculated risks, and successfully exploited the international environment in the wake of the Afghan Conflict (Caldicott; 2002: 446).

The internal pressure on the decision making authority in Pakistan, strongly demanded for a nuclear policy that could challenge the Indian nuclear threat. The majority of the population accepted Pakistan’s policy of nuclear ambiguity, that is, the capability to assemble a nuclear device without either acquiring or renouncing nuclear weapons (Arnett, 1998: 53). The public perception, being largely antagonistic to the Indian nuclear capability, forced Pakistan to a pro nuclear policy making. However, many analysts have found that this public discourse on the nuclear policy was created and controlled by the civil-military bureaucrats. The absence of strong democratic structure, inactive civil society, and restricted and regulated media in Pakistan, in fact, questions the basis of the public support to the pro-nuclear policy of Pakistan. Indeed, many regard that the nuclear policy making was framed by the military and political elite. There weren’t any internal debate on the nuclear policy either within the military or in the civilian bureaucracy. Even academic publications or analysis on the subject were missing in the covert period of Pakistani nuclear programme (Salik; 2009: 74).

The nuclear programme was presented to domestic audience not only as the ultimate means of ensuring Pakistani security against aggressive Indian intentions, but also as a symbol of national prestige and sovereignty (Arnett; 1998.62). Further, it was a fact that the Islamic radical groups also influenced the policy making. ISI commanders with radical Islamic ideologies have demanded to link the nuclear policy with the Kashmir issue (Farzana; 2002: 38).

It was in the third phase of the nuclear programme (after the 1998 tests) Pakistan’s nuclear weapons capability transformed into an operational deterrent. Moreover, coherent and deliberate policy to deal with the nuclear programme was framed during this period. Also, Pakistan’ under General Musharraf evolved strategic doctrine and command and control network, as well as the establishment of tri-service strategic forces (Khan; 2006: 504). This policy was in fact critical especially it had to deal with the external pressure against the nuclear test as well as the volatile relation with India. The key question that now confronts the Pakistani leadership concerns the
future direction of Pakistan's nuclear programme. Pakistan is yet to develop a strategic nuclear doctrine

**The first-Use policy**

There is a large volume of writings that support and oppose the ‘first strike’ policy of Pakistan. Some analysts view that the ‘Pakistani first use policy’ is indeed due to its nuclear strength. Everyone agrees the conventional inferiority of Pakistan with respect to India. While adhering to first use policy Pakistan's main concern has always been to offset India's superior conventional military. Stephen Cohen calls it as an "Option enhancing policy". Pakistan is unwilling to consider a NFU pact with India. Conversely, they have made suggestions for a Non-Aggression pact. Under this policy Pakistan would be able to continue low level conflicts with India without escalating it into a major war. Therefore Pakistan reiterates that it will resort to the first use of nuclear weapons if these redlines are violated (Kazi; 2007). Pakistan believes that to overcome the conventional superiority of India it needs to adhere to a policy of first use. However, as India has the ability of second strike, Pakistan needs second and further striking capabilities. Therefore, some analysts view Pakistan nuclear policy aims at a large size of nuclear arsenals capable of second and further strikes. Three factors could be attributed to the first use policy of Pakistan 1) the conventional weakness when compared to India, 2) lack of strategic depth to retaliate with a second strike and 3) poor economic situation to build up larger nuclear strength (Ramusino and Martellini; 1999: 95). Pakistan has pledged no-first-use against non-nuclear-weapon states, but has not ruled out first-use against a nuclear-armed aggressor, such as India (Kerr and Nikitin; 2009: 40).

According to Gen. Kidwai, Pakistani nuclear weapons will be used, only if the very existence of Pakistan as a state is at stake. Nuclear weapons are aimed solely at India. In case the deterrence fails, they will be used if a) India attacks Pakistan and conquers a large part of its territory (space threshold), b) India destroys a large part either of its land or air forces (military threshold), c) India proceeds to the economic strangling of Pakistan (economic strangling) and d) India pushes Pakistan into political destabilization or creates a large scale internal subversion in Pakistan (domestic destabilization) (Gupta; 2010).
Some scholars argue that the ‘first use policy’ is indeed less relevant. The use of nuclear weapon by Pakistan will help India to mobilize international feeling in favour of it and even could make second strike with the international support. Further, as its conventional military strength is superior, India may not use the nuclear weapon against Pakistan. It would attack and demolish the Pak nuclear capabilities with the conventional strength. This in fact would give India a better place and prestige to India among the international community. Also, it will enhance Indian credibility as a responsible nuclear power. The policy generally intends to avert the nuclear war holding on to deterrence. The ruling circles in Pakistan are not much interested in fighting (even less in funding!) an all-out war, certainly not one fought with nuclear weapons (Wirsing; 1996: 102). 

The first use policy of Pakistan states the use of nuclear weapon as “last resort protection”. But many scholars have pointed out that Pakistan can not afford to last resort because of the fear that India with its conventional strength will wipe off Pakistani nuclear capabilities. So, the ‘last – resort’ would remain only in the policy statements. Some scholars have argued that Pakistan is more capable than India of delivering nuclear payloads (Faruqui; 2003: 106). This shows the fact that Pakistan give over emphasis to nuclear deterrent policy. Chakma views the earlier Pakistani nuclear policy as a policy of “deliberate nuclear ambiguity. In the 1980’s Pakistan’s policy stated that it had no intention of building nuclear weapons unless supreme national security interest compelled it to do so (Chakma; 2009: 41). Pakistan has also found that the nuclear deterrence is quiet working from their experience in Kargil war 1999 and other confronting situations thereafter. With the overt nuclear deterrence, Pakistan viewed that its Kashmir policy would be put forward with more efficiency and efficacy.

**The minimum credible deterrence**

Minimum Credible Deterrence has been the central concept of Pakistan’s nuclear policy. Minimum credible deterrence relays on the notion of miniaturization of the weapon capability. The nuclear force shall be minimum but should be credible to deter the opponent. Therefore, the size of the nuclear force cannot be precisely decided and it depends on the strength of the opponent. Infact the concept of
minimum credible deterrence is an extension of minimum deterrence which requires the deterrent capability to be credible. Zafar Khan places minimum deterrence a nuclear posture between assured destruction (a condition prevailed during the cold war period) and nuclear abolition. Another aspect of minimum credible deterrence is that it is not meant for fighting war. It is best suited for peacetime and low-intensity conflicted situations.

It was deterrence by uncertainty\(^2\) that prevailed until 1998 in South Asia. Even in the absence of the nuclear weapon test there was a sort of nuclear threat Pakistan raised from 1987 onwards. This could be considered as a kind of proxy nuclear deterrence. Though it lacked credibility, it could make a reasonable deterrence against India. There was the belief that it would explode on delivery of the nuclear weapon which is indeed uncertain (Vajpayee; 1996). With the nuclear test in 1998 Pakistan’s nuclear policy shifted from ‘non-weaponized deterrence’\(^3\) to weaponized deterrence. Until the Indian nuclear test Pakistani decision makers found that the policy of nuclear ambiguity would be a better policy to deter the Indian threat. However, a shift was inevitable as the Indian test challenged the credibility of non-weaponized deterrence. Rasul Rais considers this non-weaponized deterrence as a condition of threshold deterrence (Rasul: 2005: 144). Because it was period that Pakistan was about to acquire the nuclear capability openly. It was necessary for Pakistan to continue its ambiguous policy until it tested so as to deter the Indian threat. Since it was far behind India in the nuclear development programme it could not conduct test immediately after India had the first peaceful test. Looking from another angle it would be found that the international pressure mounted on the nuclear proliferation during this stage has also forced Pakistan to deny the nuclear weapon programme. Pakistan pursued a minimal deterrence approach to cope with what the policy makers perceived as an adverse regional security environment. In contrast to the military superiority that India enjoyed in South Asia, Pakistan had to cope with notable geographic and security handicaps, a weak military and civilian industrial base, and resource constraints. The same minimal deterrence approach shaped Pakistan's nuclear weapons and missile programs in the beginning stages. The underlying consideration was to develop some capability in all types of armament to deal with India. Moreover, India was building its nuclear strength (Rizvi; 2001: 944).
Prime Minister Sharif, while delivering a lecture on nuclear doctrine at Pakistan’s National Defence College, referred to ‘minimum credible deterrence’ as one of the principles guiding Pakistan’s nuclear policy in May 1999’ (Rajagopalan; 2005: 5). The Pakistani policy makers believe that the minimum credible deterrence would be a better policy that is economically and politically viable to face the asymmetry with India. The qualitative and quantitative factors of this minimum credible deterrence have been observed by some scholars as a major defect with in this policy. Bumitra Chakma points out that following the nuclear tests, Islamabad indicated that it would pursue a 'minimum deterrent' posture. However, it has failed to define it in quantitative and qualitative terms as yet (Chakma; 2002). Minimum Nuclear Deterrence is one of the basic tenets of Pakistan's nuclear doctrine. This is an undefined as well as a dynamic concept. It is not based on the numerical strength but it is a minimum quantity maintained based on the threat of pre-emption and interception from India. As this threat perceptions changes, Pakistan will have to reorient its minimum deterrence capability (Kazi; 2007). Describing the guiding principle as minimum credible nuclear deterrence, high level officials’ statements point to four policy objectives for Islamabad’s nuclear weapons: deter all forms of external aggression; deter through a combination of conventional and strategic forces; deter counterforce strategies by securing strategic assets and threatening nuclear retaliation; and stabilize strategic deterrence in South Asia (Kerr and Nikitin; 2009: 38).

Initially Pakistan had adopted a policy of minimum deterrence. However, Pakistan changed this policy by adopting minimum credible deterrence. This change was made by Pakistan according to the peculiar condition existing in the South Asian region (Zafar; 2015: 54). It requires Pakistan to miniaturize its nuclear power at the same time it should be employed and deployed credibly. Former President Muahsaraf used “minimum defense deterrence”, which may be meant as minimum credible deterrence (Salik; 2009: 78). Pakistani officials believe that when this deterrence stabilizes the minimum credible deterrence accelerates nuclear security in South Asia.

**The Policy of nuclear ambiguity**

Nuclear ambiguity as a policy is deliberately coined and not accidently developed. Stephen Cohen termed it designed ambiguity (Cohen; 1991: 41). Thomas
W. Graham uses the term ‘calculated ambiguity to denote the nuclear policy of ambiguity (Graham; 1986). Cohen and Frankel explain nuclear ambiguity in two senses. There is a genuine uncertainty that is lack of adequate knowledge about the technology status and programme. The ambivalence created by the political or military leadership concerning its nuclear capability (Frankel; 19919). As a policy of nuclear ambiguity, the leaders of such nations deliberately create uncertainties, by making irregular and contradictory statements as well as not declaring the policy officially. They find it as a useful policy in deterring a strong power. They find effective working of the deterrence under the policy of nuclear ambiguity. However, this policy of nuclear ambiguity is considered to one of the challenging issues of international non-proliferation regime. It would also create deep security dilemma, particularly about the safety and security of the nuclear materials.

The official policy that Pakistan adopted, showing greater concern for nuclear disarmament and peace in the initial phases, was a clear hypocrisy. During the period of its ardent effort on the weapon programme Pakistan followed dual policy. Recognizing its military inferiority to New Delhi, Islamabad has consistently proposed that both countries simultaneously undertook bold steps toward de-nuclearization. It demanded for a Nuclear Free-Zone in South Asia on the one side. Also it attempted to expose the danger of India nuclear programme in front of the international forum. But, the Indian stand is a Global nuclear free zone. The former External Minister of India S.M. Krishna has rightly observed that while Indian quest for global nuclear disarmament has been an integral part of the independent foreign policy, it is a painful reality that achieving a nuclear weapon free world has remained a distant goal (Ministry of External Affairs; 2012). Contrary to it Pakistan secretly continued the weapon development. In fact Pakistan never gave a true picture of its nuclear programme through its nuclear policy. The demand for ‘nuclear free zone’ and the official statements of remaining in peaceful development of the nuclear energy made many to expect that Pakistan would follow the policy of nuclear restraint. But this was a part of the policy of nuclear ambiguity and the Pak decision makers valued the nuclear deterrence more than anything. On the one side it developed the nuclear capability and on other side it carried out the nuclear proliferation. There seems to have some connection between the nuclear proliferation
activities and Pakistan’s nuclear policy. Pakistan was less bothered of the danger of nuclear black marketing. It wanted to build up its nuclear force any how. Therefore, the actual policy didn’t prevent the nuclear transactions and proliferation. The policy of nuclear ambiguity infact helped the nuclear proliferation. As Pakistan had its nuclear programme as a policy to attain nuclear weapon capability any how, the proliferators got a better chance. This could be evident from the A.Q. Khan network. This policy indeed lessened security and secrecy on the nuclear programme, making the nuclear scientists and officials free to proliferate. Some analysts say this ambiguity serves to maintain deterrence against India’s conventional superiority (Kerr and Nikitin; 2009: 9).

This policy of ambiguity is retained even in its policies to the international non-proliferation regime. Pakistan’s stand was that the NPT would possess little appeal and exert less weight if the near nuclear status do not subscribe to it (Tabassum; 2003: 63). Pakistan’s earlier nuclear option suspected the Indian nuclear weaponisation. Pakistan’s adoption of such a policy was clearly reflected in its refusal to sign the NPT in 1968. Hence Pakistan contained a policy of nuclear option until it tested the bomb (Chakma; 2009: 41). Pakistan does not have a document detailing its envisaged nuclear policy. More than its inability to frame the policy it was deliberate attempt to hide the nuclear development so as to avert the international pressure. What could be assessed from the various statements by Pakistani leadership is ‘Pakistani policy does not abide by no first use ‘doctrine’ but would ‘respond with full might’, it encompasses minimum nuclear deterrence and a balance of conventional force (Teresa; 2009:143). In the absence of a nuclear doctrine Pakistan pursued a policy of nuclear deterrence (Rajain; 2006:307). This minimum deterrence is also ambiguous as the policy does not contain the operational aspect of the deterrence. Even now the nuclear ambiguity still persists in its policy, especially dealing with India. A week before the terrorists struck Mumbai, the financial capital of India, on 26 November 2008, the President of Pakistan, Asif Ali Zardari, had offered India the guarantee of ‘No First Use’ of nuclear weapons. A week later, it is threatening to resort to the same nuclear blackmail. Perhaps it is time to call Pakistan's nuclear bluff. If Pakistan offers an NFU then it implies that it has acquired second strike capabilities against India (Kumar; 2008). Pakistan still wants to continue its
policy of ambiguity. Nobody is expected to declare the targeting policy or identify the targets intended to be engaged or when and how the nuclear weapons would be employed in actual operational environment. Maintaining secrecy about these factors would still preserve the ambiguity (Salik; 2009: 75)

A Policy of Covert Nuclearaization

In the second phase of the nuclear programme Pakistan adhered to policy of covert nuclear weapon programme. The second phase of Pakistan’s covert nuclear program lasted from 1974 until the May 1998 Indian tests. This phase included building up Pakistan’s stockpile of fissile material, developing weapon designs, testing in a laboratory setting, and acquiring, developing, and testing various delivery systems (Khan; 2006: 503). While carrying out the nuclear weapon programme clandestinely, Pakistan denied its plan to develop the nuclear weapon. In February 1992 in an interview with the Washington post, Pakistan Foreign Secretary Shahryar M. Khan declared that Pakistan had the capability of making an atomic bomb. But it had not manufactured one' (Salik; 1996: 92). During the deliberately course of this covert nuclearization, Pakistan’s policy was to foster the ambiguity and exploit the international conditions. For example General Zia deliberately fostered ambiguity and took the advantage of the international nuclear treaties and exploited the US nuclear proliferation policy. Also, Pakistan could make the advantage of the international developments like the soviet invasion in Afghanistan. The policy Pakistan chose at the weapon development stage was to conceal the weapon programme and at the same time carry out the verbal deterrence against India. The denial and acceptance about the nuclear programme alternatively held by the Pakistani military and civilian leaders helped the clandestine nuclear development. The two aims of this covert nuclear policy were to carry out the clandestine nuclear programme on the one side and on the other side deter India with the non-weaponised deterrence. And this policy of Pakistan proved to be successful as it could develop the nuclear capability as well as defend the Indian threat simultaneously.

Pakistan’s nuclear policy was devised such a way not only to defend the Indian nuclear threat but also the threat from the conventional strength of India. The Barrasack crisis, Kashmir crisis and the Kargil crisis proved the successful working of
this policy. During the covert nuclearization process the official nuclear policy of Pakistan stood for non-proliferation in South Asia. Shaista Tabassum points out that then nuclear policy revolved around four pillars basically. This was described by the foreign minister of Pakistan on 20\textsuperscript{th} April 1987. They are:-- 1) To support all efforts to check and reverse vertical and horizontal proliferation; 2) As proliferation concerns in South Asia are regional only regional solution can be fair and effective; 3) Pakistan does not possess nor it indulges to possess nuclear weapons (Tabassum; 2003: 65). However, the overt official nuclear policy remained sheer in the statements. In practice Pakistan followed covert nuclear weapon development. Rajagopal says that Pakistan has not published an official policy on how it plans to use its nuclear weapons (Rajagopal; 2005: 48). Hiding even the policy was followed during the process of nuclearization.

**Nuclear Triad**

Nuclear triad stands for nuclear capability in three levels. Accordingly the nuclear weapon state must have strategic bombers, intercontinental ballistic missile and submarine launched ballistic missiles to deliver the nuclear arsenal. The development of nuclear triad by states is to make the second and further nuclear strikes credible. This is because massive attack on the nuclear potential on state possessing only one of the above delivery components can not make the second strike. Now states regard nuclear triad very necessary for credible nuclear deterrence, albeit they follow minimum credible deterrence.

The policy Pakistan followed immediately after its nuclear weapon tests as stated by its military and political leaders was-Pakistan is not going for arms race and nuclear weapon is simply for deterrence purpose. However, as the policy is heavily dependent of Indian nuclear posture, Pakistan has shifted from this stand. Pakistan already possesses strategic bombers (32-16 A/B fighters and 122 Mirage) and intercontinental ballistic missiles (Hafta series and Ghuari) (Geller; 2003:141). Now its policy demands building submarine launched ballistic missiles. Pakistan believes that its minimum credible deterrent be useful only if it possesses nuclear triad especially as India has already advanced in nuclear triad (Chari; 2013: 3). Pakistan’s
‘targeting doctrine’ to deny Indian victory in a nuclear war will be possible only if it has nuclear triad.

**Nuclear Policy: the Operational Impacts**

Pakistan’s nuclear policy was structured on the strategic calculations and historical antagonisms of the region (Paranjpe; 1987: 21). The nuclear policy was primarily focused on avoiding the Indian threat to it, regaining in sub-continent and to equalize the disturbed balance of power in the region. Pakistan said that it was left with no choice but to respond to the Indian tests so as to restore the “regional strategic balance (Khan; 2008: 242). The India-Pakistan rivalry had a deep impact on the nuclear policy. The meeting held at Multan in 1972 which is reported to have made the decision to develop an atomic weapon was a reaction to the demeaning defeat in the war of 1971. The Indian first nuclear test ‘Smiling Budha’ in 1974 forced Pakistan to a public declaration of its intention to enter the nuclear field. Therefore, many scholars have observed Pakistan’s nuclear policy as something ‘reactive’ to Indian nuclear policy. Pakistan’s nuclear policy very often fluctuated linking and de-linking itself from Indian nuclear policy. This fluctuation in the nuclear policy was as part of dealing with the International pressure. When it spoke of the idea “Islamic Bomb,’ it was in a larger spectrum, beyond India to the global level. However, while Pakistan’s nuclear policy largely centered on the security threat to the nation particularly from India, it neglected the threat to the security of its nuclear programme. The nuclear policy kept silent on the command control and safety measures.

Pakistan found its policy of first use as very significant to the ‘credible deterrence against a conventionally superior India. “Islamabad announced that her nuclear weapons would be the instruments of last resort’ against any further Indian military adventure and abandoned non – first – use policy in its nuclear strategy” (Javaid; 2006: 108). The policy makers well understood the need for the first use policy from the previous wars with India, which proved their inferiority. Because of its inferiority in conventional weapons, Pakistan has always reserved the right to use nuclear weapons first (Jones; 2002: 203). Pakistan also wants to link its nuclear policy with the Kashmir issue, the major confronting issue between India and Pakistan.
“Unlike India Islamabad wants to attract the world’s attention to Kashmir, it proclaims that unless the dispute is resolved there is a serious threat of war, which might escalate into a nuclear one’ (Ahmed; 2002: 53). The nuclear policy here is to attract the international mediation on the issue which India vehemently rejects. Consequently this also deters the Indian action on the Kashmir issue. Earlier Pakistan made all efforts to prevent the nuclear weapon programme of India. Pakistan adopted this policy because the Indian nuclear capability would further widen the asymmetry. Also, the economic and technical backwardness restricted the potential for Pakistan’s nuclear weapon programme. So in initial period Pakistan’s policy was regional nuclear free zone. But with the Indian nuclear test 1974, Pakistan became aware that this policy has no substantial effect. What it requires is the nuclear weapon to encounter the Indian threat. Then Pakistan adhered to a policy of active nuclear weapon programme. It was policy that supported the clandestine nuclear weapon development.

Pakistani nuclear weapon programme was carried out without any clear cut policies and doctrines, particularly neglecting the repercussions of the programme. Commenting on the Pakistani nuclear programme, Stephen Philip Cohen has pointed that out a wide range of nuclear and missile programmes were carried out and allowed to slowly mature, without a clear policy decision about their consequences (Perkovich; 1993:88). In the first face of the nuclear programme, (1954 – 1964) Pakistan had no coherent nuclear policy (Singh; 2006). Till the test of May 1998, Pakistan followed a policy of an opaque deterrence. This was well executed by the nuclear ambiguity it maintained. Before having conducted the test, Pakistan made threatening statements of having the capability of the nuclear bomb. This was policy which was part of the opaque nuclear deterrence. But this policy required a change when India demonstrated its nuclear capability as very strong and tangible. In Pakistan’s strategic calculus the nuclear weapon would provide strategic balance and is the best guarantee of peace and stability in the region (Rasul; 2005: 147). More important is that incase of the nuclear weapon the balance of power is not to be countered on the number. Therefore it is more reliable for strategic balance of power.

The credibility of the nuclear policy of Pakistan could be questioned as there are great level differences among the decision makers about the policy. “The
involvement of the ISI, many of whose commanders are said to espouse versions of radical Islam arising from their assistance to the Afghan Mujahedeen in the 1980s, could accentuate differences over nuclear policy within Pakistan's military establishment as Kashmiri militants stage ever larger and more perilous attacks against Indian forces in Kashmir” (Farzana; 2002: 38). Pakistan is very little bothered of the domestic threat while formulating its nuclear policy. Pakistani nuclear weapons will be used, according to Gen. Kidwai, only "if the very existence of Pakistan as a state is at stake" (Ramusino and Martellini: 2002). What Kidwai intends is there shall be the authorized use of the nuclear arsenal when the existence of the state is risked by another nation. But to many scholars the real threat to the state emanates from within the state. And this, perhaps, would be followed by unauthorized use of the nuclear weapons.

Pakistan’s nuclear policy similarly with the other security decisions is premised on the India factor. In its policy, Pakistan considered nuclear weapons an ‘essential weapon’ for its survival. The Paksitani Nuclear policy after the nuclear explosions were aimed at reducing the international antagonism mounted against it especially the form of economic sanctions. Somewhere at the end of the 20th Century, Pakistan nuclear policy, though not officially, adopted the rout to proliferation. Here, it contained two aspects-one to expand nuclear capability (vertical and self proliferation) and the other to export the nuclear capability (Horizontal or cross proliferation). Hence, Pakistan moved from ‘capability decision’ to ‘proliferation decision’. This was indeed for strengthening their defence by getting missile technology as well as to make economic benefits.

Under military rule, Pakistan's nuclear policy will be primarily determined by the high command's mistrust of India and the military's propensity to react to India's nuclear ambitions (Ahmed; 2000: 791). Pakistan has a declarative policy which states in the doctrinal level the nuclear weapon is primarily meant to offset India’s conventional advantage by signaling that even in the event of conventional attack, Pakistan may retaliate with nuclear weapons (Rasul; 2005: 155). This is an extension of its first use policy. The confrontation in Kargil underlined two aspects of Pakistan's nuclear policy that could threaten regional stability in South Asia; both in some sense also reflect the emerging balance of forces in the country. The first is the apparent
lack of a coherent doctrine of nuclear deterrence. The second aspect of Pakistan's nuclear policy has been a tendency to exploit the nuclear balance with India by expanding low-level conflict (Farzana; 2002: 37 & 38). Pakistan will remain hostage to its nuclear weapons policy until such time as its policy makers realise that the best way to ensure national security is to abandon an untenable nuclear competition with India (Ahmed; 2000: 791).

Though Pakistan has not yet formally announced their nuclear doctrine, the statements by the officials give an outline of the nuclear doctrine. The statements by Abdul Sattar lays down the significant features of the doctrine as a) Pakistan’s policy will be based on a minimum credible deterrence; b) It will avoid getting embroiled in a strategic arms race with India; c) It will continue to support international arms control regimes, which are non-discriminatory in nature; d) Pakistan’s nuclear policy will be conducted with ‘restraint’ and ‘responsibility’; e) It will participate in the FMCT negotiations; f) It will refrain from further nuclear testing. However, this commitment is subject to change in case India decides to resume testing (Salik; 2009: 84)

**Command and Control Challenges of Pakistan’s Nuclear Weapon**

There have been a number of questions raised on the safety and security of nuclear weapons, materials and reactors of Pakistan. The political instability, military dominated political system and the activities of non-state and anti-state actors in Pakistan have made many scholars sceptic about the safety of nuclear programme in Pakistan. Under this contest, many have argued that managing nuclear weapons in Pakistan would be a grave security challenge. An important point of concern in Pakistan about its nuclear safety is the possibility that extremist groups with in the country could gain control of its nuclear facilities, including fissile material. President General Pervez Musharaff was attacked many times by the militant groups. For instance, in 2003 he escaped death thrice by a matter of inches. Assassination attempts against the Pakistani leader raised the scary specter of a government in shambles and a country in chaos. What would become of Pakistan’s resources of highly enriched uranium enough to make around 50 to 70 bombs and who would take control of the facilities where this material is stored? A destabilized Pakistan with
Kashmir militants to the north east and Al Qaida and Taliban insurgents to the North West would definitely be a global security nightmare (Cirincione; 2001: 94).

The biggest challenge the Pakistani Nuclear Command and Control system facing is the nuclear black marketing. The Khan Net Work has been viewed by many scholars as the failure of Pakistani command and control authority of the nuclear programme. Pakistan emerged as the greatest proliferators of nuclear weapons in the name of A.K. Khan. The untold damage, Khan did to the world is yet to be realized (Sing; 2010: 230). According to reports one Wahid Malik Khan claimed that he had canisters of weapons grade uranium and plutonium for sale in Pakistan (Rajain; 2006: 344). The Khan network, described as a Wal-Mart of nuclear proliferation, apparently reached out and touched North Korea, Libya, Iran and many others (Cimbala; 2010: 115). In fact, it may be regarded as an extension of the illegal trade Pakistan had opted for acquiring nuclear capability. Also during the course of its nuclear weapon development Pakistan had given more freedom to the nuclear scientists.

Vipin Narang distinguishes the risk of nuclear command and control in Pakistan during peace time from war time. He find primarily two critical risks during peace time - 1) managing rogue nuclear personnel and 2) risk involved during the time of transfer of nuclear devices and materials. He says “The first is that an insider threat could bypass the PRP/HRP, which, as Secretary of Defense Robert Gates points out, is never “entirely reliable” in any state..... As a small but possibly increasing proportion of Pakistanis may be radicalizing, these programs are charged with the difficult task of separating those who are “merely pious and those with tendencies towards religious extremism,” particularly given that a failure rate of even 0.01 percent could have disastrous consequences. .... The second risk emerges during transportation of nuclear components. As Pakistan’s nuclear arsenal expands to enhance the credibility of its asymmetric escalation posture, the number of nuclear assets that must be securely moved—over poor infrastructure, increasing the risk of accidents—will necessarily increase. Although Pakistan seems to be investing in transportation security, there is always a higher risk of accidents or theft in transport—whether to bases from fabrication facilities or from bases to deployment sites—than in fixed locations” (Narang; 2009 ).
During crisis situation the risk involves the unauthorized or accidental use and the theft of nuclear devices. Moreover, the security of Pakistan’s nuclear arsenal would decline as Pakistan moves to a higher state of nuclear readiness and is forced to deploy nuclear assets or disperse them to secure locations. This would lessen the centralized control of the nuclear arsenals and would provide an ample chance to the terrorist to attain nuclear devices. Quick dispersion or deployment of the nuclear weapons and materials would cause loss of centralized control and generate serious risk of theft, or unauthorized accidental use (Narang; 2009: 137). But Ali Ahmed counters this argument as illogical. He views that keeping nuclear weapons in a demated condition complicates theft. Also, in crisis and conflict conditions, security precautions are more stringent making it difficult to be stolen (Ali; 2009: 1).

Pakistan’s delegated control system is fraught with risks, it is found to increase the likelihood of unauthorized or accidental nuclear use in a crisis prone South Asian strategic environment (Chakma; 2009: 79). To prevent accidents and unauthorized use of nuclear weapons, Pakistan relies on several layers of safeguards. The Personnel and Human Reliability Programs (PRP/HRP) are designed to thwart internal threats to the arsenal. Meanwhile secrecy and robust perimeter security around nuclear installations are designed to thwart external threats to assets. The reliability programmes include a rigorous screening programme involving extensive background checks, tight controls on contact and travel, and psychological screening to ensure the stability and loyalty of 10,000-plus officers and scientists who have access to Pakistani nuclear assets. With so many people involved and with the assets dispersed over dozens of locations, these programmes are critical to the security and safety of Pakistan’s nuclear weapons programmes (Narang; 2009:126).

Therefore, everyone world over is apprehensive that nuclear weapons in the hands of Pakistan, poses a danger to peace, not only to South Asia but to all over the world. It may be seen far fetched to the rational mind that some Islamist function with in the Pak army itself, could seize and smuggle nuclear weapons or material for using in Jehad against India and Western world (Singh; 2007: 152). So, in Pakistan, unlike the other nuclear powers, the threat to the command and control of nuclear weapon emanates from multiple sources. The Kargil war which took place in the meanwhile had created a lot of apprehension about the safety of nuclear arsenals of
Pakistan. By the formation of the NCA Pakistan wanted to avert this fear of the international community. Though Gen. Mirza Aslam claimed about the establishment of National Nuclear Command Authority in the 1970’s, this has been refuted by many scholars (Rajan; 2006: 310).

**Command-Control Institutions and Mechanism**

Since Pakistan followed clandestine nuclear programme and a policy of nuclear ambiguity, until the overt nuclear test in May 1998, there are no clear evidences about the command and control structure of the nuclear programme. What could be reasonably accepted is the PAEC was the authority that performed the command and control of the nuclear programme. However, the PAEC could exercise only a limited power in this respect. PAEC and KRL have both made contributions to Pakistan’s nuclear programme and claimed credit for the success of the nuclear tests. However, the overall co-ordinations and supervision of Pakistan’s nuclear strategic planning and executors may be done by the Combat Development Directorate (CDD) of the armed forces (Khan; 2008: 251). The Khan Research Laboratory (KRL) which carried out the uranium enrichment programme, performed as an autonomous body parallel to the PAEC. The bureaucracy and the military exercised a greater power in the command and control structure. Hence, Pakistan lacked a central mechanism to control and command the nuclear programme.

There is an elaborate command and control structure for taking decisions pertaining to Pakistan's nuclear weapons program. After two years of its overt nuclear capability Pakistan attempted to bring an institutionalized command and control mechanism to its nuclear weapon programme. Islamabad’s Strategic Command Organization has a three-tiered structure, consisting of the National Command Authority (NCA), the Strategic Plans Division (SPD), and the Strategic Forces Commands (Kerr and Nikitin; 2009: 44). The core agency among them in the process is the NCA. On 2\textsuperscript{nd} February 2000 the National Security Council approved the establishment of Nuclear Command Authority NCA (Singh; 2006: 43). NCA is "a 10- member body, which consists of the President, Prime Minister, the chairman of the joint chiefs-of-staff, the Ministers of Defense, Interior and Finance, the Director-General of the Strategic Plans Division, and the Commanders of the Army, Air Force
and Navy" (Govt. of Pakistan; 2002). The President is Chairperson of the NCA; the Prime Minister is the Vice-Chairperson. The final authority to launch a nuclear strike requires consensus within the NCA; the Chairperson must cast the final vote (Kerr and Nikitin; 2009: 44). The NCA includes civilian members and the foreign minister who acts as its deputy chairman (Jones; 2002: 210). The NCA is responsible for policy formulation and exercised employment and development control over all strategic nuclear forces and strategic organizations. Dr. Umbreen Javaid argues that with the establishment of NCA the possibility of any irrational decision by an individual no more exists (Javaid; 2006: 145). It comprised two committees – Employment Control Committee (ECC) and Development Control Committee (DCC) (Singh; 2006: 44).

The ECC is the main body where major decisions are taken. ‘The ECC assess the existing or emerging threat to the country, provide policy direction during peace time, and decides the deployment and employment of nuclear weapons if the necessity should arise’ (Chakma; 2009: 75). The ECC makes the decision to authorize the use of nuclear weapons (Singh; 2006: 46). The Employment Control Committee is chaired by the head of the government and includes minister of foreign affairs (deputy chairman), minister of defence, minister of interior, chairman of joint chief of staff committee, services chiefs, director general of strategic plans division and technical advisers and others, as required by the chairman and co-ordinates all nuclear activities in Pakistan (Javaid; 2006: 115). The DCC is to implement weapons development plans and upgrade the nuclear forces in accordance with the strategic force goals set by the ECC. The DCC exercises technical, financial and administrative control over all strategic organisations, including national laboratories and research and development organizations associated with the development and modernisation of nuclear weapons (Kerr and Nikitin; 2009: 44).
After seizing power through a military coup, General Musharaf created a 13 member National Security Council (NSC) comprising to the civilian and military
personnel (Chakma; 2009: 75). Through NSC was not directly involved in the nuclear decision making, it broadly dealt with the nuclear issues. Immediately after the test in early 1999, the strategic Plans Division (SPD) created to co-ordinate the nuclear activities. The strategic plans division which is in charge of managing the command and control system is placed under the authority of NCA. The Strategic Plans Division (SPD) serves as the secretariat of the NCA, (Chakma; 2009: 76) The SPD, the secretariat for the NCA formulates Islamabad’s nuclear policy, strategy, and doctrine; developing the nuclear chain of command; and formulating operational plans at the service level for the movement, deployment, and use of nuclear weapons (Kerr and Nikitin; 2009: 38).

Many analysts have identified the overwhelming role of army in the nuclear command and control system of Pakistan. The civilian authority has only a nominal role. While the command and control system that has been constituted is expected to ensure that Pakistan’s nuclear weapons are under the control of the political leadership, in reality, it could be deduced that Pakistan nuclear weapons are firmly under the control of Pakistan’s army (Singh; 2006: 45). Indeed, the army dominates Pakistan’s nuclear command structure. The very composition of the nuclear command control structure that Islamabad announced in February 2000 clearly reflects the army’s leading role in Pakistan’s nuclear decision – making (Chakma; 2009 : 78). The military coup of October 1998 provided a set back to the prospects of some form of formal civilian control over Pakistan’s nuclear deterrent (Rajain; 2006: 348).

In January 2001, the government of Pakistan promulgated PNRA Ordinance establishing a complete independent regulatory authority called Pakistan Nuclear Regulatory Authority. This authority has been entrusted with the control, regulation and supervision of all matters to nuclear safety and radiation protection measures in Pakistan (Javaid; 2006: 111). Musharaf has also sought to preempt the seizure of fissile material by 'rogue' military commanders or Taliban-backed militants by tightening security around Pakistan's main uranium-enrichment facilities at Kahuta and Golra Sharif, and its plutonium reprocessing plant in Khushab. All three facilities are located in the Punjab, well away from the volatile regions of the North- West Frontier Province and Baluchistan, close to the Afghan border (Farzana; 2002: 46).
It has been mentioned by many authors that, to ensure speedy command and control structure, it seems that Pakistan has adopted a delegated command and control system, delegating the authority to use the weapon to military commanders (Rajagopalan; 2008: 132). What is different from the US and Indian system is the strategic plans division in Pakistan is headed by a senior army officer. The international safeguard system also ensures an effective and efficient command and control structure. The country that has become a member of the IAEA has to place their research reactors under IAEA safeguards. This is to ensure the safety of the nuclear programme as well as the misuse of the programme. Pakistan is a member of the IAEA. Therefore Pakistan has placed the KANUPP nuclear reactor and the PARR research reactor at Rawalpindi under the safeguards of the IAEA (Barnaby; 1993: 79).

Scientists and other personnel engaged in nuclear weapon programme are screened and controlled by four agencies (ISI, Military Intelligence, Intelligence Bureau, SPD). However, the credibility of these organisation again raises the threat. The affiliation of these organs to religious and militant wings are frequently reported. Every aspect of each person's life is reportedly controlled, including families and relatives in every two years. Military people (of lower levels) involved with nuclear operations are professionally selected by ISB (Inter-service Selection Bureau) screened by professional psychiatrists. Top level people (including scientists) are controlled by their organizations and not psychologically screened (Gupta; 2010).

Command control challenges

The military has been suspected of giving silent permission to the illegal transfer of nuclear technology by A.Q. Khan. The shocking revelations of top Pakistani nuclear scientists’ nuclear black marketing in which nuclear weapon technology was supplied to the third countries suggested that this could not have happened without the blessings of the military (Devare; 2006: 58). Assessing the civil military relations on the nuclear operation, Sreedhar points to the danger hidden in the command and control system. Indeed Pakistan is the focus of most concerns about the impact of civil military relations on nuclear operations because of the army’s history of frequent military interventions and its well known refusal to relinquish control over the atomic weapons programme to civilians. The state of Pakistan’s
civil military relations also raises another issue – who decides when nuclear weapon must be used? And, in a crisis, who should India and other powers be talking to about reducing the threat of escalation (Sreedhar; 2007: 274).

Terrorist groups prefer to acquire an intact nuclear warhead rather than attempting to construct it themselves. The next chance for such an acquisition is by stealing. But stealing a nuclear warhead under tight security would be extensively difficult. However, the probability of stealing the nuclear materials like uranium and plutonium can not be discarded. “If terrorist could buy or steal 25 kilograms of highly enriched uranium, a well – organized group could presumably who obtain the necessary technical expertise to fashion a gun assembly type bomb, similar to the Hiroshima Bomb (Cirincinone: 2001 : 90). Islamic extremists seeking to enter in any of Pakistan's nuclear facilities may penetrate all of these extensive defenses.

There was much debate about two nuclear scientists Sultan Bashiruddin Mehmood and Abdul Majeed who were arrested for alleged cooperation with the Talibans (Gupta; 2010). US Secretary of Defence Donald Russell said that the serious threat to global security is nexus between terrorist’s networks and terrorist states that have weapons of mass destruction (Cortright; 2007: 123). Reportedly, Al Qaida has tried to obtain weapons grade material (enriched uranium and plutonium) and assistance in assembling both true nuclear weapons and radiological bombs (Cimbala; 2010: 115). There have been shadowing contacts between Al Qaeda and nuclear experts from Pakistan, including a meeting with Osama Bin Laden who has called the procurement of weapons of mass destruction ‘a religious duty’ (Arnold and Brown; 2010: 305). Alistar Millor and Aron Ipe argue that the vulnerability of Pakistan’s nuclear weapons and materials to Al Qaeda is very high. First on the list might be Pakistan because of its nuclear weapons, materials and expertise; Al Qaeda’s large presence in the country; and the sympathy of some within Pakistan’s nuclear programme for Al Qaeda Islamist ideology (Cortright; 2007: 131).

The nuclear establishment in Pakistan faces the problem of lack of co-ordination and effective administration. Some of its entities are controlled by the Ministry of Science and Technology and others by the Ministry of Defence (Khan; 2008:251). The transfer of missile parts from North Korea to Pakistan has made the
army experts to believe that the government was at the very least aware of the transfers by A.Q. Khan (Singh; 2007: 147). Here the bidirectional failure is assessed. If the authority was unaware of it, it lacked competency. If it knew it, then the authority has mal-administered.

Technological incompetence is another challenge that may lead to failure of command and control of the nuclear weapons. It is not a matter of who is the controlling and commanding authority rather it is the technical knowledge of how to make effective command and control of nuclear weapons. There remains the threat of unauthorized use of nuclear weapon by military personnel in charge. The technical in competency also help the unauthorized use of the weapon. At present Pakistan doesn’t possess PAL\textsuperscript{6} technology (Permissive Action Link). In fact an efficient technology can avoid the misuse of the nuclear weapon by the military personnel. However, Pakistan denies this kind of misuse because they have not yet assembled their warheads. They are in component parts, placed at different locations and require scientific experts to assemble them. This posture remains only during peacetime and during a crisis situation the military would get the warhead completely assembled. This would place the situation under severe security complexities. Along wit the challenges of command and control this would raise challenges to safety and security of the assembled nuclear arsenals.

There are many scholarly opinions that the command and control of the nuclear arsenal of Pakistan under the Army is more secure than civil governments. The Pakistan army is also often described in the west as the only cohesive entity in a politically unstable country. Pakistan army therefore, is rated a reliable custodian of the bomb’ (Ahmed; 2002: 87). However it is only a comparison with the civilian government that the military may be viewed more a reliable authority to ensure the safety of the bomb. Its nuclear command and control system lacks credibility because of the uncertainties of military leadership as described above and the compulsions to decentralize the command system (Ahmed; 2002: 87). This reveals the military is also not the safe hands to deal with the bomb. The Islamic influence and connection within the military make the command and control system prone to misuse.
While admitting the value of nuclear weapon in the defence A.Q. Khan has warned about the possibility of accidental nuclear detonation. “There is a real danger of nuclear war by accident due to technical failure or malfunctions, or due to accidental detonation or launching of nuclear weapon. Nuclear war can also be started by unauthorized actions, human error or sheer madness. There is more over a great danger of a person or a group of persons responsible for launching nuclear weapon going insane and deciding to launch a nuclear attack on the enemy, eliciting immediate retaliation and a real holocaust” (Jones; 2002: 207). This statement by the father of Pakistani nuclear bomb infact reveals the threat of command and control of nuclear weapon, though generally it is more befitting to Pakistan. Further the asymmetric military balance prevailing in the South Asian context also points to the failure of the command control mechanism. States that select asymmetric escalation nuclear postures face a grim trade-off in which the pressure for a rapidly usable nuclear capability to establish credible deterrence generates nontrivial risks of accidental or unauthorized use (Narang; 2009).

Many Pakistani officials state that the command and control structure is based on a dual key arrangement with one key under military control and the second under civilian control. But this is not reliable under a military dominated Pakistan. It should be noted that General Musharaf simultaneously occupied the post of Chief Executive, Chairman of the Joint Chiefs of Staff and Chief of army staff. Further, the military organizational structure also makes it difficult to carryout the dual key arrangement. The former foreign minister Agha Shahi stated that the control over Pakistan’s nuclear capability has always remained with the military (Jones; 2002: 209). The competence of the authority in charge of command and control to perceive the actual threat is very essential. Any kind of misperception by the authority would lead to nuclear detonation. Especially as Pakistan is primarily preserving the threat from India, a misinterpretation of missile attack over Pakistan by other states like the U.S., attack on Afghanistan over Pakistan, would force Pakistan to detonate the nuclear weapon. The geographical proximity and conventional military inferiority of Pakistan further add to this misperception and action.

An important failure the command and control system has been facing is the proliferation. There are many reports about the black marketing of nuclear
components by Pakistan. “In a dramatic television appearance on 4\textsuperscript{th} February 2004, A.Q. Khan acknowledged that during the past two decades he had secretly provided North Korea, Libya and Iran with crucial technology for making nuclear weapon (Teresa; 2009: 142). In fact it did reveal the risk of command and control of nuclear programme of Pakistan. What is more alarming is that Khan’s network was not known to the Pakistan Government. ‘Islamabads’ official line is that governments of the day did not know the true extent of A.Q. Khan’s activities, and that what was known about his corruption was overlooked because of his political stature and his contribution to national security. Indeed, a careful analysis shows that most of Khan’s dealings were carried out on his own initiative (IISS; 2007: 93). Khan misused the freedom he enjoyed as the master brain behind Pakistan’s nuclearisation. This also, points another issue of misuse of authority by the Pakistani personnel in charge of the nuclear devises or the nuclear scientists. The transfer of nuclear technology by the Pakistani scientists without the consent of the Pakistan government may take place in the future. Therefore, the command and control structure of Pakistan’s nuclear programme poses severe threat to the international non-proliferation regime. There was greater international discontent on the response of the Pakistan government to the illicit trade by A.Q. Khan. He was pardoned by the Pakistan Government under Musharaf. This provides additional incentive to the Nuclear Scientists and personnel to follow the same suit. There are reports that the inter services intelligence (ISI) contacted the Taliban about hiding some Pakistani nuclear weapons in Afghanistan (Arnold and Brown; 2010: 307). However, after the Khan net work was revealed, personnel security measures were incorporated to the control regime. Analysts now confirm that all personnel working in sensitive positions associated with the nuclear program must pass through Pakistan’s Personnel Reliability Program ("PRP"). The Strategic Plans Division the authority to approve the personnel assigned to sensitive posts and requires a cumbersome security clearance process (Govt. of Pakistan; 2002: 233).

The failure of nuclear command and control system will cause a catastrophic end to the strategic deterrence by nuclear weapons. The perimeter security system is designed to prevent external actors from gaining unauthorized access to Pakistan’s nuclear assets. This arrangement is believed to be robust enough to thwart likely
external armed threats to Pakistan’s nuclear assets during peacetime, particularly
given the defensive advantage imparted by highly secret locations. Although alarmist
assessments of the external threat to Pakistan’s nuclear assets exist, both Director of
Central Intelligence Leon Panetta and Chair of the Joint Chiefs Adm. Michael Mullen
claim that Pakistan’s nuclear assets are generally secure during static peacetime
conditions (Narang; 2009). To avoid the use of Nuclear Weapon by misperception or
unauthorized, Moonis Ahmar suggests the need for dispersal and the need for keeping
them away from forward areas dictated by consideration to enhance survivability.
Also he says there shouldn’t be actual deployment (Ahmar; 2001:137). Scholars and
analysts like Rizwan Zeb Naeem Salik and Kenneth Luongo argue that Pakistani
nuclear weapons are safe and secure. Over the last decade Pakistan has proved it
beyond doubt (Zeb; 2014 and Salik and Luongo; 2007). Despite these precautions,
there are real risks and points of vulnerability in the current Pakistani configuration,
during both peacetime and crises, which make the risk of theft and unauthorized or
accidental use of nuclear weapons higher than in other states (Narang; 2009).
Moreover the concern about the safety and security of Pakistani nuclear weapons and
materials has placed the global community in dilemma and this dilemma is still
continuing. Pakistan has not yet completely succeeded in averting this dilemma of the
international community.

Notes:
1. Pakistan deliberately concealed its nuclear programme form the international
    community. The official statements by Pakistan never gave an idea about its
    nuclear programme.
2. Since nuclear weapon test has not been conducted there is uncertainty about
    capability of nuclear weapon. The question is whether it shall explode when it
    is used under compelling conditions. Also the question whether the weapon
    could be effectively used remains relevant. However even under this
    uncertainty deterrence works out.
3. "Non-weaponized deterrence" infers that deterrence derives from the power of
each to construct nuclear weapons quickly. It was non-weaponized deterrence
that Pakistan followed in its nuclear Policy until the Indian test (Perkovich; 1993: 86). India, however, did not follow it as it relied more on the conventional power.

4. The distinction between a “capability decision” and a “proliferation decision,” is that the former implies a decision to acquire latent capacities and the latter a decision to proceed with a functional nuclear weapons program (Khan; 2006: 502).

5. In India and US the port equivalent to SPD in Pakistan i.e. the National Security Adviser is assigned civilians. In India important National Security Adviser is the Prime Minster’s Principal Secretary (Singh, 2006). “In September 2003 Pakistan approved the Pakistan Nuclear Safety Bill, intended to strengthen current measures to prevent proliferation of weapons of mass destruction” (Singh; 2006: 28).

6. Permissive Action link is a highly sophisticated system employed by the U.S. to avoid the unauthorized activation of the nuclear weapon. A PAL is an electronic device that prevents arming the weapon unless the correct codes are inserted into it (Javaid; 2007).

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