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Pakistan's Nuclear Policy & Development: A Sri Lankan Perspective

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Abstract

This paper aims to examine the historical background of Pakistan's nuclear strategic doctrines in the context of nuclear deterrence policy of Pakistan. After years of research, Pakistan proudly set off an atomic bomb in 1998 and became the first Muslim nation to join the nuclear community. Primarily, the reason of nuclear deterrence of Pakistan will be profound as part of their historical conflicts with India and Indian threat was the major motive for Pakistan unveiling its nuclear card. The explosion caused tensions around the world and further strained diplomatic relations between Pakistan and its main rival India, which had detonated its own atomic device in 1974. The original Pakistani effort to build the atomic bomb began in the 1950s and reached a fever pitch during the Jimmy Carter administration when Pakistan made a deal with France for a reprocessing plant that could create fissionable plutonium. The other part would emphasize the key part of the nuclear program of Pakistan. In such context, this paper is an attempt to touch various issues regarding development of nuclear power in Pakistan, while highlighting the role of external powers which would contribute to the transitory nature of their dynamic relations to develop nuclear power in Pakistan. The data were collected mainly from secondary sources. The research concludes that Pakistan may have no choice but to gain nuclear capability, to ensure its survival, and has developed its own nuclear weapons in order to strengthen its bargaining position vis-à-vis India and reduce its dependence on external sources.

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1. Introduction

At first glance, Pakistan's motives for pursuing nuclear capability do not seem to be clear. This is because the development of this capability was not carried out under a consistent strategic purpose. Pakistan's nuclear development has been gradual and reactive. Indian's nuclear testing and the acquisition of nuclear capability by India are factors that pushed the development of Pakistan's nuclear capability on to the next stage. However, Pakistan has not sought to achieve security through nuclear weapons in a straight single-minded manner due to its domestic politics. Some domestic elements strongly commit to nuclear disarmament and the others are concerned about the financial cost of nuclear development.

Pakistan's nuclear development program in its initial years started with the aim of using the atom for peaceful purposes. Pakistan did not commence its nuclear program immediately after independence; rather, it took several years to embark finally on a peaceful nuclear development program. There is little evidence that Pakistan aspired to build nuclear weapons in its initial years of nuclear development (Khan, 2015). The initial impetus to build a peaceful nuclear program came from the U.S 'Atoms for Peace' initiative.

The first evidence that Pakistan's government was thinking of taking a scientific interest in the "Atoms for Peace" program came in late September 1954. The U.S. National Planning Association announced it was to conduct a series of country studies to look at the "economic problems and policy issues raised by the rapid increase in technological knowledge of atomic energy and its potential contribution to the industrial and agricultural development and improved standards of living."(Dawn, 1954) Pakistan was chosen to be one of the countries for study, along with Japan, Korea, Brazil, and Israel because the Planning Association claimed that "all these countries [have] 'special institutions' which might make nuclear development interesting."(Dawn, 1954) Oddly, however, Pakistan had no 'special institution' at that time working on nuclear research. The report becomes understandable if a decision had been made in principle to start work on atomic energy in Pakistan at this time but had not yet been made public

The major public announcement of Pakistan's nuclear plans came on 1 January 1955, in Prime Minister Mohammad Ali's "first of the month" broadcast to the nation. After laying out a number of decisions taken by the government on constitutional and economic issues, he declared:

"While concentrating our attention on matters of vital interests to your daily life we have not been unmindful of the need for the country's progress and development in other spheres. A step forward in the scientific field was the formulation of a scheme to set up a Nuclear Research Centre for exploring the possibility of obtaining uranium from the mountainous regions of our country with a view to the production of atomic energy for the country's economic development."(Dawn, 1955).

2. Research Methods

This research is critical one based one interpretive analysis which has used both quantitative and qualitative data. Here, the stated purpose is examined by studying mainly secondary materials. This secondary data collected from books, reports, journals, newspapers, official documents, and research articles. The fundamental questions of this research are the following: why does Pakistan conduct Nuclear weapons? What are the factors motivated Pakistan to atom bomb? And what is the impact in the South Asian Region?

3. Results and Analysis

3.1 Pakistan's Nuclear Program

The peaceful uses of nuclear technology started in Pakistan in 1953 (Kapur, 1987). At that time the government of Pakistan had not formulated its nuclear policy (Kapur, 1987). Pakistan government constituted its nuclear policy in 1955. It means that Pakistan's nuclear program began some seven years after India's nuclear program. The then government of Pakistan established a 12 member Atomic Energy Committee, headed by Dr, Nazir Ahmed. Its objective was to prepare plans for peaceful uses of atomic energy. It was on the recommendation of this committee that an Atomic Energy council was set up in March 1965, which had two organs: a Governing Body and an Atomic Energy Commission. The former comprised two central ministers, two central secretaries, and chairman of the Atomic Energy Commission. The later had six scientists as its members and was assigned to take steps for the achievement of the goals set out by the government for the Atomic Energy Council. These included "planning and developing peaceful uses of nuclear energy with special reference to survey, procurement and disposal of radioactive material; planning

and establishment of atomic energy and nuclear research institute; installation of research and power reactors; negotiations with international atomic energy bodies; selection and training of personnel, application of radioisotopes to agriculture, health, industry etc (Rizvi, 1991)

3.2 Motivation of Nuclear Proliferation in Pakistan

Indian Factor

Pakistan's effort to develop nuclear weapon capability is generally believed to be a reaction to the nuclear capabilities of its traditional adversary, India (Saeed, 2004; Bidwai and Vanik, 1991; Pranjpe, 1987, Khalizad, 1980; Ebinger, 1979). The rivalry between the two countries is based on centuries of communal antagonism, territorial disputes dating from independence. Repeated wars in 1947-48, 1965 and 1971, to settle differences and a policy to interfere with each other's internal affairs. Therefore, Pakistan developed nuclear weapons mainly to deter military aggression from India, and therefore nuclear weapons continue to play the central role in Pakistan's military strategy.

In fact, India is the second most populous country in the world and account for approximately 77 percent of the region's population, 72 percent of its area and 78 percent of its Gross National Product. It ranks as the tenth industrial nation in the world; 3rd in a number of scientists and engineers (Merani, 1990; Amit Gupta, 1989). Today it commands the world's third-largest standing army. Its Navy ranks sixth and Air Force as the fourth largest in the world, it became the sixth member of the nuclear club. It has joined the Global Space Club by orbiting an indigenous satellite (The Nation, 1992). With such a strong military muscle India considers itself as the security manager of the South Asian Region. But Pakistan does not accept its superiority in the region. Another thing which makes Pakistan nervous is that since independence, India pursued a quest for domination. While most of India's neighbors have accepted Indian military dominance in the region, Pakistan continues to deny it. In fact in Pakistan's foreign policy, the projection of its image as a challenge of India's pre-eminence in the region will continue.

Since their independence in 1947, India and Pakistan fought three wars. Pakistan was severely defeated in the third Indo-Pakistan war in 1971 and was divided into two states in which former East Pakistan became the newly independent and the separate state of Bangladesh. Given that Pakistan started to develop nuclear weapons the following year in 1972, (Jones *et al.*, 1998) it is thought that this defeat of Pakistan was a direct momentum to the development of nuclear weapons by Pakistan.

These factors reinforced Pakistan's security perception vis-à-vis India, and encouraged Zulfiqar Ali Bhutto to launch the nuclear weapons program which was "predominantly security driven, and based on the statements of leaders and senior government officials - mainly India -centric."(Naeem Salik: 2009) When India tested its nuclear device in 1974, Prime Minister Bhutto described it as a threat to Pakistan's security, and said;

> A more grave and serious event has not taken place in the history of Pakistan. The explosion has introduced a qualitative change in the situation between the two countries. (Bhutto, 1974).
> Statements made by Bhutto during various speeches were mostly aimed to stir public sentiments and a result of India-specific threat perception. He was a kind of leader with deep-seated "national identity conception (NIC),"(Potter and Mukhatzanova, 2010) – who viewed the world as „us against them". Therefore, once it was clear that India was on its way to building nuclear weapons, Bhutto had famously remarked in the aftermath of the Indian nuclear test reportedly said; "If India developed an atomic bomb, we too will develop one even if we have to eat grass or leaves or remain hungry, because there is no conventional alternative to the atomic bomb."(Jalal and Hasan, 1970).

> Pakistan's nuclear pursuits were mainly guided by its security fear vis-à-vis India. With long-standing disputes, limited resources to match Indian conventional military capability, and lack of support from its principal ally, the U.S., during various crises reinforced Pakistan's India-specific threat perception and made the nuclear weapons pursuit a national imperative which no successive leadership could reverse. In fact, the growing conventional asymmetry and the salience of nuclear deterrence during various crises reinforced Pakistani conviction that nuclear weapons are the only guarantors of its national security. Several factors contribute to a state's nuclear choices, but in Pakistan's case, the concern about national security has been the chief catalyst (Chakma: 2009).

The development of nuclear weapons by Pakistan was further spurred on by India's nuclear test in May of 1974. Abdul Qadeer Khan, a metallurgist who had returned to Pakistan from Europe in 1975, made significant contributions to the advancement of the development of nuclear weapons. Dr. Khan worked in Dutch uranium enrichment facilities during

the first half of the 1970s and became well acquainted with the gas centrifuge equipment necessary for uranium enrichment. Dr. Khan came to play such a critical role that he subsequently came to be known as the father of Pakistan's nuclear weapon development program.

3.3 Pakistan's Nuclear Doctrine

Pakistan acquired nuclear power in order to establish a strong deterrence against India. Initially, Pakistan intended to stick with the concept of the Atom for Peace. With the passage of time and occurrence of hostile acts from the Indian side, Pakistan had to change its vision. It was a conventional victory of India over Pakistan when it lost it's Eastern wing at the hands of India in 1971. When India conducted its first nuclear test in 1974, threat perception in Pakistan was on peak. Keeping in view Indian nefarious designs against Pakistan, the leadership of Pakistan resolved to get a nuclear weapon in order to get reliable deterrence against India. Infect the same vision is the basis of Pakistan's nuclear doctrine (Khalid, 2011).

It is equally necessary that nuclear capability must be kept under a well devised doctrinal concept. Defense Committee of Cabinet held its session under former Prime Minister Nawaz Sharif in order to devise a policy regarding Pakistan's nuclear doctrine and strategic culture. Usually, Pakistan's policies had remained India-centric mostly because of the hostile posture of the later. Pakistan's nuclear policy has also been India-centric since 1974. Bhutto described Indian nuclear tests as 'fateful development, a threat to Pakistan's security' (The Pakistan Times, 1974 June 8).

According to Smart (1975) strategic doctrine of Pakistan is based on following three principles that include, first is the guarantee of independence and geographical integrity second is mutual deterrence among nuclear states and to control total war while the third principle is "offense-defense", as these weapons made it possible for weaker states to defend themselves effectively against aggressors and powerful countries. These perceived security and deterrence benefits underpin Islamabad's to stay away from the policy of no first use. According to most authoritative sources, Pakistan's nuclear doctrine is based on the following claims:

a) Nuclear weapons are assurance for the territorial integrity of the country as well as national independence and sovereignty.
b) Pakistani threat perceptions (as narrated above) are only India-centric and sole aim of having these weapons is to deter India from aggression. Such as, Nuclear weapons are essential for India's conventional superiority. As the conventional balance of forces between India and Pakistan, benefitted India so nuclear use is for Balance of Power in conventional force ratios between the two sides.
c) Deterrence strategy of Pakistan is based on the threat of punishment with counter value targets.
d) Pakistan's strategic stance is that of minimum credible deterrence, it is minimum because as these weapons have no other role but to deter the adversary.
e) As India has an advantage in the conventional army, so Pakistan cannot commit to a policy of any first use (NFU). As this will enable India to fight a conventional war with impunity (Latif, 2014).

These were the main attributes of Pakistan's undeclared nuclear doctrine. It has three distinct policy objectives: a) deter a first nuclear use by India; b) enable Pakistan to deter Indian conventional attack; c) allow Islamabad to "internationalize the crisis and invite outside intervention in the unfavorable circumstance"– the external balancing factor. Some analysts have suggested that this capability may also be used as a deterrent to cover a low-intensity war in Kashmir (Hussain, 2005). This concept had remained central to all nuclear policy and planning of Pakistan.

However, Pakistan's strategic doctrine is undeclared, and will probably remain so, but prominent officials and analysts have offered insights concerning its basic tenets. (Lavoy, 2006) Describing the guiding principle as minimum credible nuclear deterrence. (Kerr *et al.*, 2010). 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 et al., 2010). Pakistani officials 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 (Salik, 2006).

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. (Lamont and Bokhari, 2008) Some analysts say this ambiguity serves to maintain deterrence against India's conventional superiority. Other analysts argue that keeping the first-use option against New

Delhi allows Islamabad to conduct sub-conventional operations, such as support for low-intensity conflict or a proxy war in Kashmir, while effectively deterring India at the strategic level (Bajpai, 2002).

3.4 Nuclear Weapon

Pakistan started its nuclear-weapons program from a very low technological level. Pakistan was, therefore, dependent on international support from the day on onwards. This project was supported financially by other Islamic states such as Libya, Iran, and Saudi Arabia.

Pakistan's nuclear industry was founded in the 1950s and the US "Atomic for Peace" program trained Pakistani scientists in nuclear-reactor technology. They also enabled Pakistan to buy a 5 MW swimming pool type research reactor and fuel, too small to have any military significance, which became fully operational in 1965; it has been used mainly for training purposes. A Canadian 137 MW heavy-water type power plant reactor, the Karachi Nuclear Power Plant (KANUPP) was supplied on a turnkey basis and became operational in 1972. The KANUPP facility is a natural uranium, heavy water reactor of the CANDU type which, according to some sources, can produce as much as 55 kg of plutonium per year (4-6 bomb's worth) when operating at peak capacity. (Leventhal, 1992) However, the reactor has never operated at full capacity and since 1977 it has been operating at a sharply reduced level due to a cut-off in Canadian fuel supplies. Pakistan recently solicited bids for construction of a 900 MW light water, low enriched uranium fuelled power plant on the Indus River at Chashma, where it can draw on hydroelectric power with the co-operation of China. Indeed, China, as a staunch ally of Pakistan, is the principal nuclear benefactor, having provided blueprints for the bomb, as well as highly enriched uranium, tritium, scientists and key components for a nuclear weapons production complex, among other technical tools. The Chinese provided Pakistan with hands-on assistance for the Chashma and Kahuta enrichment plants, with a tested bomb design, and with enough highly enriched uranium for more than two bombs –perhaps even conducting a test of the bomb design for Pakistan at China's Lop Nor test site (Milhollin, 1998).

According to Western sources, the "hot cell" facility installed at the Pakistan Institute of Science and Technology PINSTECH in the mid-1970s with French and Belgium assistance may be able to produce small amounts of plutonium. One report suggested that Pakistan had 30 kg of plutonium by 1980 and would have 605 kg by 1984 (Sharma, 1982).

Thus, the Pakistani nuclear weapons program took shape in 1976 when Dr. Abdul Qadeer Khan, a German-trained metallurgist, returned to Pakistan from the Netherlands and ultimately, an enrichment facility at Kahuta, based on blueprints from Almelo gas centrifuge enrichment plant, was completed in 1985. Pakistan also has a small pilot plant at Sihala, the existence of which was acknowledged by Zia-ul-Haq. (Weaver, 1982) However, the Kahuta enrichment facility began to produce weapons-grade uranium in the mid-1980s and this plant produces uranium enriched to more than the relatively innocuous five percent level (Smith, 1988) Thus, it is the uranium enrichment program that provided the decisive breakthrough for Pakistan in the area of weapon-grade material production. The 1980s saw Pakistan's achievement of the target of designing a nuclear weapon and the acquisition of important hardware. Dr. Abdul Qadeer Khan, the mastermind behind the establishment of the Kahuta enriching plant, was able to announce his country's success in breaking the Western monopoly and exceeding the five percent level in uranium enrichment (The New York Times:1988).

Nuclear scientists of Pakistan mastered to produce fissile material by using the gas centrifuge based technology of uranium enrichment in the years of 1980s. Fissile material for nuclear weapons is of two types, highly enriched uranium and plutonium. Main enrichment facility of the country is located at Kahuta including other sites. As far as sources of enrichment for these materials it is pertinent to mention here that Pakistan acquired from many sources, like Europe and China as well (Latif, 2014) Accordingly, Pakistan constructed a uranium enrichment facility in the 1970s, and according to Dr. Abdul Qadeer Khan the country started uranium enrichment in 1978 and highly enrichment uranium in 1983.

Pakistan's nuclear weapons are produced from centrifuge-generated highly sophisticated enriched uranium at the Kahuta laboratory. Thus, the fissile material may amount to between 400 kg and 600 kg, allowing for the manufacture of some 20 to 30 nuclear weapons. Foreign Minister Gohar Ayub Khan reports that Pakistan's six tests were based on "boosted fission devices using uranium" and the country also has the ability to conduct a fusion or thermonuclear blast (Dawn, 1998). The US Los Alamos National Laboratory report declared that Pakistan's nuclear tests based on smaller and more powerful plutonium-based weapons could fit more easily onto ballistic missiles than those fuelled by the highly enriched uranium that Pakistan has produced recently. (The Washington Post, 1999) However, Pakistan also has the ability to extracted weapons-grade plutonium from the Chashma plant and substantial amounts of plutonium

for weapons is also available from the Khushab reactor in the Punjab province, which is fully operational and will soon be capable of producing 5 to 10 kg of weapons-grade plutonium, enough for one bomb, annually.

Over the years, Pakistan has acquired a broad array of aircraft, which could readily be configured for nuclear weapons. Pakistan is not well endowed but it has enough aircraft to conduct a nuclear mission without obstacle. Its 34 F-16 (A/B) and 20 Mirage IIIEP aircraft could form the nucleus of an atomic strike force, with a dozen squadrons of French and Chinese-made aircraft.

According to most public estimates, Pakistan has about 60 nuclear weapons, though it could have more;[1] a recent public estimate from two prominent experts on the subject stated that the country has between 70 and 90 nuclear weapons. (Norris and Kristensen, 2009) Pakistan's nuclear warheads use an implosion design with a solid core of approximately 15-20 kilograms of HEU (Norris and Kristensen, 2007) Islamabad reportedly continues to produce HEU for weapons at a rate of at least 100 kilograms per year (Kerr *et al.*, 2010).

Pakistan has also pursued plutonium-based warheads and continues to produce plutonium for weapons. Islamabad has received Chinese and European assistance for at least some of its plutonium program. The 40-50 megawatt heavy water Khushab plutonium production reactor has been operating since 1998. (The Nation: 1998) It appears that Islamabad is constructing two additional heavy-water reactors, which will expand considerably Pakistan's plutonium production capacity, at the same site. (Kerr *et al.*, 2010) Additionally, Pakistan has a reprocessing facility[2] at the Pakistan Institute of Science and Technology (PINSTECH) and is apparently constructing other such facilities. Nuclear Fuel reported in 2000 that, according to "senior U.S. government officials," Islamabad had begun operating a "pilot-scale" reprocessing facility at the New Laboratories facility at PINSTECH (Kerr *et al.*, 2010) Pakistan also appears to be constructing a second reprocessing facility at the site (Albright and Brannan, 2009) and may be completing a reprocessing facility located at Chasma (Kerr et al., 2010).

Islamabad's construction of additional nuclear reactors and the expansion of its reprocessing capabilities could indicate plans to increase and improve Pakistan's nuclear weapons arsenal in the near future. Indeed, Defense Intelligence Agency Director Michael Maples told the Senate Armed Services Committee on March 10, 2009, that "Pakistan continues to develop its nuclear infrastructure, expand nuclear weapon stockpiles and seek more advanced warheads and delivery systems."(Norris and Kristensen, 2007) Similarly, Admiral Mullen confirmed during the May 14 hearing that the United States has "evidence" that Pakistan is expanding its nuclear arsenal.

3.5 Cold War, US, and Pakistan

As the Cold War set in, however, the U.S. military planners began to see Pakistan as important because of its "proximity to the Soviet Union; its proximity to the oil fields of the Middle East; its potential role in the defense of both the Indian Ocean area and the Indian subcontinent; its position as the largest Muslim nation in the world; and its army. (McMaho, 1994) Despite this, nothing substantial happened. The U.S. did not want to undermine the possibility of a good relationship with India and so left Pakistan on the margins of the Cold War. Jimmy Carter, who came into office as president of the United States in January 1979, tackled nuclear non-proliferation issues seriously. After assuming office, Carter promptly invoked the Glenn-Symington Amendment,[3] that was enacted in 1977 during the Republican administration of the former President Ford and suspended economic and military aid to Pakistan for its suspected development of nuclear weapons at that time (Jones *et al.*, 1998). Before that to stop Pakistan from starting its nuclear development program, US secretary of state Henry Kissinger visited Pakistan in August 1976 to persuade Islamabad to abandon its nuclear technology ambition. In a meeting with the then Prime Minister late Zulfikar Ali Bhutto, Henry Kissinger used both carrot and stick policy to persuade Pakistan to disband its nuclear technology program. It has been stated that Kissinger threatened Bhutto that "we will make a horrible example of you," and added ominously that "when the railroad is coming, you get out of the way". (Tirmazi, 1995) When the US failed to dissuade Bhutto from its stance, Henry Kissinger visited Paris to stop it from supplying the required material for which it had

[1] Arms Control Association Fact Sheet, http://www.armscontrol.org/factsheets/Nuclearweaponswhohaswhat.asp; "Global Fissile Material Report 2007," International Panel on Fissile Materials http://www.fissilematerials.org/ipfm/ site_down/gfmr07.pdf; SIPRI Yearbook 2007. The International Panel on Fissile Materials estimates that Pakistan has enough fissile material (highly enriched uranium and plutonium) for 65-80 nuclear weapons; this estimate assumes 25 kilograms of HEU per weapon and 4.5-6 kilograms of plutonium per weapon ("Banning the Production of Fissile Materials for Nuclear Weapons: Country Perspectives on the Challenges to a Fissile Material (Cutoff) Treaty," International Panel on Fissile Materials, 2008. http://www.fissilematerials.org/ipfm/site_down/gfmr08cv.pdf).

[2] "Reprocessing" refers to the process of separating plutonium from spent nuclear fuel

[3] The Glenn-Symington Amendment is a domestic U.S. law that added to The Foreign Assistance Act of 1961. It came into force in 1977 and prohibits any kind of aid to be given to countries that import uranium enrichment equipment and/or technology, and where this equipment is not monitored by the IAEA

already struck a deal with Pakistan (Jone, 2002). Under the US influence, France canceled the deal in 1978 which was "a huge blow to Pakistan which, once again, complained that the West was singling it out" (Paul, 1992). However, the Soviet invasion of Afghanistan in later 1979 dramatically changed this course. The US administration has overlooked these factors and reverses its policy decisions taken earlier about Pakistan. In 1981, the Reagan administration began to provide substantial amounts of economic and military assistance to Pakistan. By 1981, the US and Pakistan were discussing a US $ 3.2 billion aid package. By 1985, Pakistan became the fourth largest recent of the US bilateral military assistance (Ali *et al.,* 2015). The Reagan administration tried to make use of Pakistan as a base to support Afghan anti-Soviet armed groups, while at the same time attempting to contain the expansion of Soviet power and influence in South Asia. The Reagan administration justified commencing aid to Pakistan on the grounds that it would be conducive to enhancing the security of Pakistan and thereby reduce the incentive for that country to go nuclear (Jones *et al.,* 1998). Still, Pakistan steadily proceeded with the development of nuclear weapons as an armed conflict against Soviet troops continued in Afghanistan. In 1985, Pakistan began to produce weapons-grade enriched uranium (Jones *et al.,* 1998). Incidentally, it is believed that this was also the time when Pakistan obtained blueprints for nuclear warheads from China (Jones *et al.,* 1998).

The Reagan administration was keen to supply Pakistan with sophisticated air-to-air missiles, and key congressional committees also approved $3.2 billion five years (1981-1985) aid package to Pakistan. (Doder, 1985) In March 1986, the Reagan administration announced that it would provide Pakistan a second six-year (1985-1991) aid package worth of $4.2 billion. From this point onward, the Reagan administration was aware that Pakistan had achieved the capability to build nuclear arms or assemble the components. (Boyd, 1986) According to Milt Bearden (a senior CIA officer in Pakistan from 1986-1989), in early 1986 the Soviets and Indians talked Pakistan's nuclear issue with the US diplomats in an effort to isolate Pakistan from the Afghan issue but the US officials refused to discuss this matter and helped to create the conditions to produce weapons-grade material. (Dawn, 1998) According to the Tass report, the Reagan administration allowed Pakistan to increase their self-defense ability and Pakistan's nuclear capability was significantly improved during the years of 1985-86 in order to prevent the Soviets moving towards the Persian Gulf. During those years, Pakistan set up a worldwide smuggling ring to buy, copy or steal nuclear weapons technology. Some sources claimed that during this time, Pakistan conducted two nuclear tests and rapidly assembled at least one nuclear device in the event of a future war (Spector, 1990).

It may be said that Pakistan's nuclear weapon program was able to move forward by taking advantage of the dilemma facing the United States, which was not able to effectively implement a strong nuclear non-proliferation policy toward Pakistan while proceeding with its containment strategy against the Soviet Union in South Asia. The 1985 Pressler Amendment was suggestive that the U.S. policy of seeking to contain the Soviet Union was proceeding at the expense of nuclear non-proliferation objectives. The Pressler Amendment, which was added to the Foreign Assistance Act of 1961, required that the U.S. president certifies at the beginning of each fiscal year that Pakistan was not in possession of any "nuclear explosive devices" as the condition to the provision of any military assistance to that country. In other words, the Pressler Amendment specified that military aid to Pakistan could continue as long as there was no clear evidence of the production of nuclear explosive devices by that country. Thus, despite the fact that Pakistan proceeded with the production of weapons-grade fissile material and research into the production of nuclear warheads, both Presidents Reagan and Bush (senior) continued to provide military aid to Pakistan until fiscal 1989, stating the reason that such activities did not constitute actual production of nuclear explosive devices. However, in October of 1990, President Bush (senior) stated that he was unable to certify that Pakistan was not manufacturing a nuclear explosive device, which led to the complete suspension of aid. In fact, from the end of 1989 to the beginning of 1990, when relations between India and Pakistan were extremely strained, Pakistan had allegedly been fabricating enriched uranium metal strips needed for the production of nuclear explosive devices. (Jones *et al.,* 1998) Moreover, Soviet forces completely withdrew from Afghanistan in 1989.

While the United States suspended aid to Pakistan by invoking the Pressler Amendment, Pakistan suspended the enrichment of uranium and exercised self-restraint in the fielding of M-11 ballistic missiles from China. As a result, the U.S. Congress and the Clinton administration enacted the Brown Amendment in February 1996, which established exceptions to the Pressler Amendment, thereby allowing the resumption of economic and military aid to Pakistan. (Jones *et al., 1*998)

As outlined above, although the progress of Pakistan's nuclear weapon development was being influenced by America's South Asian policy and nuclear non-proliferation policy, its objective is to compete solely with India's nuclear weapon development and to serve as a deterrent to India, which has overwhelming conventional military strength.

3.6 China-Pak nexus on Nuclear Arms

China's involvement in nuclear proliferation in South Asia is long-standing. As a military ally of Pakistan and an adversary of India, China has helped Pakistan to build its nuclear and missiles capabilities. China has used this assistance to Pakistan as a way to balance India militarily and politically. By helping to continue the India- Pakistan rivalry, China has also sought to keep India limited to regional power status and prevent its recognition as a major power.

Chinese –Pakistan nuclear cooperation began in the 1970s during the tenure of Prime Minister Zulfiqar Ali Bhutto. This cooperation reached its peak in the 1980s and early 1990s when China assisted Pakistan in building its nuclear capabilities. According to Robert Ross China continues its support for Pakistan by supplying nuclear and missile technology because "China views a credible Pakistani deterrent as the most effective way to guarantee the security of its sole ally in Southern Asia against Indian power" China views its relationship with Pakistan as somewhat similar to the U.S. relationship with Israel (Ross, 1999).

Chinese support reportedly included a secret blueprint for a nuclear bomb in the early 1980s; highly enrich uranium, tritium, scientists, and key components for a nuclear weapon production complex. Critical Chinese-supplied components included 500 ring magnets useful in gas centrifuges that can make weapons-grade enriched uranium (1994-95; tritium used to boost the yield of atomic weapons (1986), heavy water, a special industrial furnace, high-tech diagnostic equipment, a nuclear weapon design and weapon grade for the production of one or more nuclear weapons (since1983) (Paul, 2003). Through its continued supply of nuclear and missile materials to Pakistan, China has become a cause of, and a contributor to, nuclear proliferation in the region. Although this relationship with Pakistan also offers China some means for limiting the extent and scope the nuclear arms race between India and Pakistan, China has shown little inclination to restrain its regional ally, largely because the Chinese policy towards South Asia is driven by a balance of power and containment considerations. These policies are part of China's realpolitik strategic culture, which values the pursuit of traditional power and prestige as "maximizing national interests in a competitive and relatively dangerous world". (Johnston, 1992)

A report in the New York Times in 1998 presented the Chinese support Pakistan vividly: "Beginning in 1990, Pakistan is believed to have built between 7 and 12 nuclear warheads-based on Chinese designs assisted by Chinese scientists and Chinese technology. That technology included Chinese magnet for producing weapons-grade enriched uranium, a furnace for shaping the uranium into a nuclear bomb core and high-tech diagnostic equipment for nuclear weapons tests. (Tim Weiner, 1998).

"China recently provided Islamabad with missile-related technologies, which include dual-use missile-related items, raw materials, and other accessories essential for missile manufacturing". (Times, 2002). In a sense, China's nuclear and missile assistance to a volatile Pakistan over the last two decades has now created the risk of a conventional conflict swiftly escalating into nuclear war. Beijing has not only provided Islamabad with nuclear bombs, uranium, and plants (all three Pakistani nuclear plants—Kahuta, Khushab, and Chasma— have been built with Chinese assistance) but also their delivery systems: ready to-launch M-9 (Ghaznavi/Hatf), M-11 (Shaheen), and a number of Dong Feng (Ghauri) ballistic missiles (Malik, 2000)

The Pakistanis seem to have taken a page out of China's book tactical nuclear warfighting capability. Just as persistent Sino-Soviet disputes and the Soviet Union's conventional military superiority during the 1970s and 1980s gave China strong incentives to develop and deploy TNWs, the decade-long India-Pakistan border tensions and India's conventional superiority may have added momentum to Islamabad's efforts to deploy TNWs. Most of Pakistan's missiles acquired from China, such as theM-9, are short-range, solid-fueled, mobile, nuclear-capable missiles and can be used in a tactical mode.

4. Conclusion

Pakistan has sound reasons for pursuing a nuclear policy because nuclear weapons are more corrective than acquisitive and their possession is the only option to defend the state. Pakistan may have no choice but to gain nuclear capability, to ensure its survival. Pakistan perceives that its security is under threat and it sees India as arrogant, aggressive and expansionist. Pakistan has a deep fear of the overwhelming superiority that India enjoys in conventional forces. The differential between the conventional forces of the two countries has increased over the decades. Pakistan now regards its nuclear weapons as a deterrent not just against an Indian nuclear attack, but also against a conventional one.

Pakistan is determined to defy India's predominant position in South Asia and has developed its own nuclear weapons in order to strengthen its bargaining position vis-à-vis India and reduce its dependence on external sources. In these circumstances, Pakistan's defense planners immediately decided to strengthen their country's nuclear deterrence posture and to take steps to ensure that a failure of nuclear deterrence will not necessarily occasion nuclear warfare. Furthermore, the understanding that Pakistan's survival depends on entirely upon purposeful self-reliance, in turn, requires a multifaceted nuclear strategy involving deterrence, preemption, and warfighting capabilities, and a corollary conventional strategy that is similarly comprehensive and undiminished by territorial losses. Unlike India, the background to the development of nuclear weapons by Pakistan does not exhibit any of the aspirations for becoming a major power nor to enhance its international prestige. Nevertheless, no Pakistani government will think to give up the nuclear option in the foreseeable future, without significant incentives.

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