South Asian Studies
A Research Journal of South Asian Studies
Vol. 30, No.1, January – June 2015, pp. 221 – 235.

Pakistan's Nuclear Development (1974-1998): External Pressures

Iram Khalid
University of the Punjab, Lahore.
Zakia Bano
Government College for Women, Sahiwal.

Abstract

Pakistan detonated its nuclear test on May 28, 1998 in the Chagai hills which is along the western border of the province, Baluchistan. Many personalities and organizations were involved in developing the nuclear device against a backdrop of political, security and economic constraints, as well as opportunities. India's 1974 nuclear explosion had proved a fundamental flashpoint for Pakistan's nuclear program. Pakistan decided to accomplish its vow to "eat grass or go hungry" in its mission on its advance for the nuclear weapons. Pakistan's nuclear program evolved under immensely intricate and challenging security dilemmas and circumstances. Historical experience, a combination of cultural nuances, idiosyncrasies of personalities, and domestic politics existed throughout the nuclearization process. Pakistan faced regional crises, geographical compulsions, technical challenges, global politics, external pressure and international propaganda to nuclear materials know-how.

Key words: Nuclearization, India's Explosion 1974, Security Dilemma, External Pressure, International Propaganda.

Introduction

The international community had been unable to stop the creation of nuclear weapons despite determined efforts. The subsequent potential of future nuclear crises is one of the world's most important security concerns. On nuclear crisis, there exist two schools of thoughts, namely optimists and pessimists. Favoring stabilization and destabilization of nuclear weapons and concerns on regional security, scholars of the two schools have their own assumptions for the issue. The way to Pakistan's nuclear program is one of the steady resolve and devotion. Pakistan's constant antagonism and strategic competition with India bitterly turned over its intentions. India fought a series of wars and crises with Pakistan. The last major war in 1971 resulted in humiliating military defeat and dismemberment of East Pakistan. It simply reinforced Pakistan's belief that its adversaries were detrimental for the very existence of the new state. This perception integrated the

nation-state into a “never again” state of mind (Ganguly & Kapur, 2009, pp. 1-2). It promoted nuclear nationalism for the acquisition of nuclear capability. Security dilemma could only be resolved through arming themselves and /or forming alliances to deter potential threats (Sridharan, 2007, p. 27). Therefore, in this regard deterrence and deployment of nuclear weapons was the only option. Air Marshal Zulfiqar Ali Khan was also of the view that nuclear weapons had decreased the danger of war (Dhanda, 2010, pp. 17-18).

Pakistan is a de facto nuclear weapons State. Pakistan’s policy makers took decision that any full-scale conventional conflict with India is likely to escalate to the nuclear level. Pakistan is not only to ensure its own security but also to pursue a strategy of limited conflict against Indian rule in Jammu and Kashmir (Sagan, 2011, p. 195). Pakistan’s nuclear program is reactive in nature. Pakistan may not abandon its nuclear policy until India does it. India may not do the same, as long as China and other NPT legitimate nuclear powers do so (Chari, Cheema & Zaman, 1996, pp. 16-17).

To say that every state has the same historical experience is unusual, but their practices are useful for highlighting the similarities. The unique strategic beliefs of Pakistan are found in histories of other nuclear aspirants. Three threads interweave through the fabrics of many nuclear weapons aspirants: national humiliation, international isolation and national identity. When Pakistanis looks onto their history, then these themes are recurrent and provide a conceptual foundation from which specific beliefs emerge (Khan, 2013, pp. 7-10). States are concerned primarily to maximize security to face external threats and an unfavorable distribution of political, economic, and military capabilities of their adversaries.

Pakistan's Nuclear Test

Pakistan exploded nuclear test on May 28, 1998 in the Chagai hills which is along the western border of the province, Baluchistan. Many personalities and organizations were involved in developing the bomb against a backdrop of political, security and economic constraints, as well as opportunities. Pakistan decided to fulfill almost accurately its promise to “eat grass or go hungry” in its mission for the development of nuclear weapons. Pakistan’s nuclear program started under severely complex and challenging security dilemmas and circumstances. Historical experience, a blend of cultural nuances, idiosyncrasies of personalities, and domestic politics existed throughout the nuclear development. Pakistan faced regional crises, geographical compulsions, technical challenges, global politics, and international propaganda to nuclear materials know-how (Khan, 2013, pp. 3-5). Studies have estimated that lack of proper technical capability does not deter highly provoked states from pursuing s ‘nuclear hedging strategy' (Lavoy, 2007, p. 71).

Table 1 is showing Pakistan's nuclear weapons potential with two categories of nuclear weapon designs: a low-yield tactical weapon, and full size fission weapon.

Table 1: Pakistan's nuclear weapons potential

Date of tests	Type	Total no. of tests	Yield	Possible target/use
28 May 1998	Largest explosion (boosted fission) Small, low-yield Device (fusion)	1 4	30 kilotons Collective yield of 4=10 kilotons	Strategic application Tactical application
30 May 1998	Miniaturized Version size and Weight of the reduced(fission)	1	15-18 kilotons	Tactical/strategic application bombers

Source: Zafar Nawaz Jaspal, 'Nuclear Risk Reduction Measures and Restraint Regime in South Asia', New Delhi: Manohar, 2004, p. 27.

Pakistan's acquisition of nuclear capability

Pakistan's nuclear development process consists of three distinct phases which eventually made Pakistan as nuclear weapons state in May 1998. Threshold states argue to exercise their nuclear option for political prestige, military security, economic gains and domestic compulsion. Pakistan's security dilemma categorically involves India's nuclear capabilities and intentions. India has more than 15,000 km of frontier and 6000 km of coastline, with huge conventional forces (Rajain, 2005, p. 260).

First Phase: 1974-78

India detonated its nuclear device on 18 May 1974 at Pokhran. Pokhran was about 100 km south of the Pakistan border, in the thar desert of Rajasthan (Banerjee, 2004, p. 192). It was called "Buddha Smile". India claimed that the explosion had no military implication. It was a Peaceful Nuclear Explosion (PNE). Zulfiqar Ali Bhutto became the Prime Minister of Pakistan on 14 August 1973. He explained that India's explosion was a threat to Pakistan. He described that "Pakistan would not accept under any circumstances India's hegemony over the subcontinent" (Pakistan Times, 1974).

Table 2 shows India's nuclear weapons potential that India has three types of nuclear weapon designs: a low-yield tactical weapon, full-size fission weapons, and a thermonuclear weapon

Table 2: India's nuclear weapons potential

Date of tests	Type	Total number of tests	Yield	Possible Target/use
18 May 1974	Fission Thermonuclear device(fusion)	1 1	15 kiloton 43kilotons	Peaceful nuclear explosion Strategic application
11 May 1998	Fission device Low-yield weapon(fission)	1 1	12 kilotons 200 tons, or less than a kiloton (sub-kiloton)	Tactical/strategic missile and bombers Tactical application
13 May 1998	Low-yield fission	2	Between 0.2 and 0.6 kiloton	Tactical application

Source: Zafar Nawaz Jaspal, 'Nuclear Risk Reduction Measures and Restraint Regime in South Asia', New Delhi: Manohar, 2004, p. 20.

Pakistan's nuclear policy was tremendously influenced by its relations with antagonistic neighbor India. It was also evolved within the context of developments in India's nuclear program. In 1972, International Atomic Energy Agency (IAEA) had committed with Pakistan Atomic Energy Commission (PAEC) to meet the nuclear needs of Pakistan. The report issued in 1973 to set up 600 megawatt (MW) nuclear units during the period 1982-1990. PAEC initiated working, as energy reports had recommended. The site, Cashma was selected to build the 600 MW power plants, CHASNUPP depending on the assistance of America and Britain. Both countries did not release funds, and the project did not start (Ebinger, 1981, pp. 91-94). It was a clear indication to keep its nuclear option continued. The India's nuclear explosion of 1974 confirmed Pakistan's doubts about the peaceful nature of Indian nuclear intentions. So, Pakistan sustained its enthusiasm for the development of nuclear weapons.

Bhutto called a meeting of scientists at Multan on 20th January 1972, at the residence of Nawab Sadiq Qureshi, former governor of Punjab. Those who were to attend the meeting included Dr. Abdus Salam, the scientific advisor to Pakistan government, Dr. I. H Usmani, chairman of the PAEC, Dr. Z.A. Hashmani secretary education. Scientists from various scientific and research centers, and universities also came to attend the meeting. Zulfiqar Ali Bhutto appointed Munir Ahmad Khan, the new chairman of the PAEC in this meeting, who was then the in charge of the nuclear power reactor division of IAEA at Vienna. He replaced Dr. Usmani, who was then designated minister of science and technology. It was a newly created ministry. Munir Ahmad Khan established a Centre for Nuclear Studies (CNS) at PAEC to train young nuclear scientists and engineers. The centre had produced almost 2000 highly trained and qualified scientists and experts in different nuclear fields till 1999 (Mattinddin, 2002 , p. 85).

Zulfiqar Ali Bhutto's vigilance searched Dr. Abdul Qadeer Khan, who did Doctorate in physical metallurgy from Belgium. He could take on the task of enriching uranium. He specialized in strengthening metals used in centrifuge. Dr.

Qadeer Khan was working at Almelo plant in Netherland. He was familiar with the procedure of enriching uranium using the gas centrifuge method. In a letter to Bhutto, who was then the Prime Minister of Pakistan, he wrote that Pakistan might take the enrichment route rather than the plutonium one, to which Bhutto agreed (Rehman, 1992, pp. 45-47). Bhutto asked him to come back Pakistan. He met Prime Minister and told: 'to forget about the steel mill, only tell us how to start work on a uranium enrichment plant'. Bhutto asked Dr. Qadeer to start work on an enrichment plant in 1975. Bhutto was determined to give him a free hand. He started work on the plant in 1976. A laboratory was also established to initiate the process of enriching uranium simultaneously. The code name of this project was 706. In his death cell Bhutto wrote: 'we were on the threshold of nuclear capability when I left the government in 1977' (Chopra, 1986, p. 10).

External Pressure and Propaganda

International environment had its own impact on Pakistan's nuclear policy, resulting in the acceptance or rejection of particular nuclear policy. These internal, regional and external factors are closely interlinked and cannot be examined in isolation. Zulfiqar Ali Bhutto, The political father of Pakistani bomb was hanged on 4 April, 1979. Immediately after two days later, on 6 April the US President Carter imposed Symington Law that suspended assistance (Lux, 2001, p. 238). President Richard Nixon and later Jimmy Carter made efforts to influence Zulfiqar Ali Bhutto for leaving his nuclear ambitions but he had always refused. In this way, he aggravated Washington (Kissinger, 1957, pp. 7-8).

The Karachi Nuclear Power Plant (KANUPP) is a heavy water reactor that consumes natural uranium as fuel. It is almost same as to a Canada Deuterium-Uranium (CANDU). It was established in 1972 under IAEA safeguards. After Canada's abandonment of supplies of heavy water, spare parts, and nuclear fuel in 1976, Bhutto struck a deal with Beijing for technically running the KANUPP. China would have the ability to run KANUPP and this had built a trust between Pakistan and China. It eventually leads to a broad-based nuclear cooperation. As a result Pakistan produced its own nuclear fuel and heavy water. PAEC suffered from crises because Ottawa had stopped to supply fuel. Pakistan was given punishment due to India's deeds of conducting nuclear test. Dr. Aminuddin, a nuclear scientist at PAEC worked day and night to produce enriched uranium to be used as fuel for KANUPP (The Nation, 1998). So PAEC was able to keep Karachi nuclear reactor functioning despite the cutting-off the fuel from Canada. In this way Pakistan compensated the misbehaving of Canada.

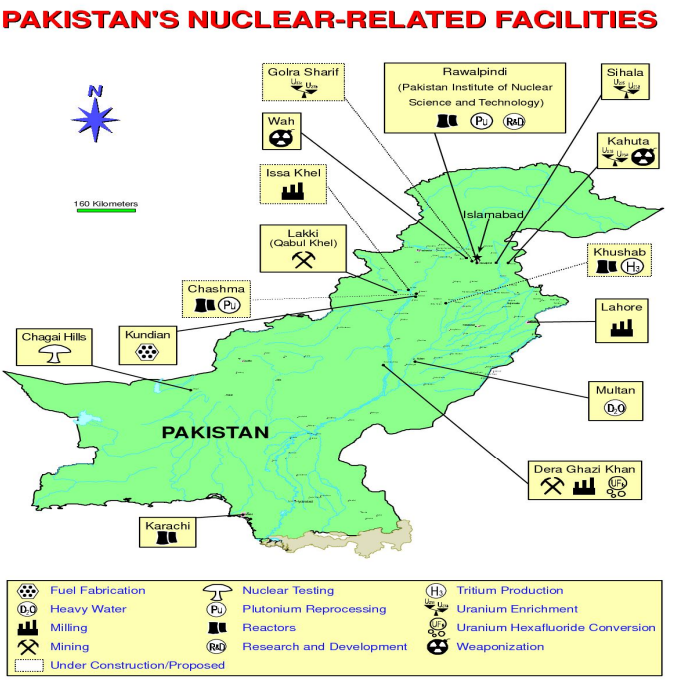
The French Nuclear Reprocessing Plant

After three years of struggle, Bhutto succeeded to set up a nuclear reprocessing plant in Pakistan after an agreement with France. The United States was the member of the IAEA'S board of governors. Both approved the agreement. Pakistan

promised to abide by the conditions imposed by France about nuclear equipment. Pakistan would not use them to acquire nuclear weapons and other nuclear explosive devices for military purposes. Actually, the United States was unhappy that Pakistan had been getting Nuclear Reprocessing Plant from France. Many world capitals were also concerned about this deal. America's intelligence agencies reported that Pakistan could use the plant for military purposes. So Washington motivated France to cancel the agreement of the Reprocessing Plant. Upon this Paris searched an authentic reason which was that, Pakistan could not produce weapons grade plutonium from the reprocessing plant. So Pakistan refused the proposals. With this, France got a chance to terminate the agreement in 1978. President Richard Nixon and later President Jimmy Carter remained concerned for changing Bhutto's determination to acquire nuclear weapons. They provided him with incentives for huge military and economic aid, but he did not change his mind in 1977. The CIA, also played a role in the anti Bhutto agitation (Mattinuddin, 2002, pp. 88-90).

The Uranium Enrichment Plant at Kahuta

Zulfiqar Ali Bhutto guided his minister of information, Kauser Niazi to launch a public campaign to keep western attention, focused on the reprocessing issue to establish uranium enrichment plant at Kahuta. Cancellation of r-reprocessing plant, under the pressure of the United States, Pakistan adopted the objective to initiate nuclear weapons technology. For this purpose, Pakistan established a small-scaled commercial reprocessing plant at Pakistan Institute of Nuclear Science and Technology (PINSTECH). Pakistan also constructed another pilot reprocessing plant at Sinhala. If France did not cancel the reprocessing plant, then both plants could be under international safeguards, according to Franco-Pakistan agreement. Pakistan had eventually succeeded to operate a gas centrifuge uranium enrichment plant at Kahuta successfully. The plant was developed through a series of covert import of equipment and material from western countries, for instance, electrical inverters from Great Britain and Canada, stainless steel vessels from Italy; aluminum rods and vacuum pumps from West Germany, vacuum valves, evaporation and condensation systems from Switzerland (Cheema, 2010, pp. 163-64).



Source:
https://www.google.com.hk/search?newwindow=1&safe=strict&q=kahuta%20plant%20pakistan

Second Phase 1979-1989

Through a military coup on 5July 1977 General Zia-ul- Haq came to power in Pakistan. Like his predecessor he encouraged Dr. Qadeer Khan. He did not slow down Pakistan's nuclear program. General Zia gave him all the facilities that that were needed to boost up the nuclear program. He adopted the policy of ambiguity unlike Zulfiqar Ali Bhutto (Pakistan times, 1979). He declared that the 'objective of Pakistan's nuclear policy was entirely 'peaceful'. On the other hand he was concerned about Pakistan's security concerns to acquire nuclear capability. It was necessary to compensate the conventional superiority of India. During Zia's regime, nuclear development focused principally on enriched uranium route to nuclear weapons. He also accentuated more aggressive campaign for the clandestine acquisition of necessary technology and hardware.

PAEC knew it well that Khan Research Laboratories (KRL) had also worked on the nuclear bomb design. On 1st May, 1981 the same day Zia-ul-Haq visited Engineering Research Laboratories (ERL) and renamed it KRL. Zia directed Abdul Qadeer Khan to pursue a nuclear bomb design for a cold test. KRL was granted a lot of funding for this project (Levy and Clark, 2007, p. 85). Pakistan embarked the project for enriching uranium. It had been called a nuclear coup-d'état, to predict that a country like Pakistan could initiate such an obscure and

complex project (Ali, 1994, p. 1). The PAEC and KRL were working on the nuclear weapons simultaneously at different places. Dr. Qadeer Khan was doing the whole task under General Zia. Zia encouraged both labs, for if one of them was destroyed by the enemy action or sabotage, then the other would continue to manufacture nuclear weapons. This strategy would save nuclearization from being halted completely. Extraction of national uranium was done at Dera Ghazi Khan. Designing and production of fuel was being done at the PAEC. Pakistan Ordinance Factory (POF) was performing the function of fabrication and the machining of the weapons. KRL was running the task of enriching the uranium. Army undertook the obligations of setting up of special communications, construction of tunnels at the detonation site, and all the security arrangements. It was a team work but there was occasional unhealthy professional rivalry between the PAEC and KRL. However, it was settled down under the supervision of army. Munir Ahmad prompted to say that the nuclear weapons program was hijacked by the army. Inspite of many hurdles, Pakistan acquired nuclear capability in 1987 (Khan, 1984, The news).

Benazir Bhutto became the Prime Minister of Pakistan in December 1988. She won the election that was held after Zia's death in an air crash. She demanded a reconsideration of Pakistan's nuclear program. She expressed her views in an interview to the Indian Express; 'we only want nuclear energy for peaceful purposes and we are prepared to set all doubts at rest on this score because it has undermined our relations with other countries and has complicated matters for Pakistan (The Indian express, 1986, p. 2A). Benazir Bhutto opposed Pakistan's nuclear program but she did not agree to sign NPT (A Saff Report, 1988, p. 17). Benazir influenced the nuclear decision making in legislature. Her government faced major challenges, because she did not have authority in two provinces of Pakistan and because the eighth amendment in the constitution of Pakistan 1973 let to the confinement of powers of Prime Minister Benazir Bhutto.

USSR's invasion at Afghanistan in 1979 and its impacts on Pakistan's nuclear program

The occupation of Union of Soviet Socialist Republics (USSR) inAfghanistan basically changed the Americans strategic priorities in the region (Spector, 1988, p. 129). The United States changed its nuclear non-proliferation policies towards Pakistan. Carter administration offered US $400 million aid to Pakistan. President Reagan announced US $ 3.2 billion aid in 1981 (Cheema, 2010, pp. 170-171).

Infact the United States offered to Pakistan a second six years package of US $ 4.02 billion. The United States also facilitated Pakistan by ignoring the Solarz amendment of congress that was passed in 1985. The United States was well informed that Pakistan had imported nuclear technology from US, but it did not invoke Solarz amendment. Washington also bypassed the Pressler amendment to assist Pakistan's nuclear program. Pressler amendment was legislated specially Pakistan for non proliferation of nuclear weapons and had enacted by the congress

in 1985. This was done to provide military and economic assistance to Pakistan (Salik, 2009, pp. 98-105).

India's nuclear activities during 1980 and Pakistan's nuclear posture

The substantial implication was an Indian military exercise along the Pakistan's border in 1986-87 (Benjamin, 1982, The Washington Post). On September 15, 1986, Pakistan and China signed a new nuclear cooperation agreement to promote peaceful uses of atomic energy. China would supply two 325- MW nuclear power reactor to Pakistan. It provided the first reactor at Chashma Nuclear Power Plant (CHASHNUPP-1) (Rehman, 1986, pp. 51-52; Hart, 1982, p. 134). A. Q. Khan guaranteed in an interview that "if for the 'sake of existence, integrity, independence and security, the President of Pakistan takes the decision (to make nuclear bomb)……, we are fully capable to carry out the job if entrusted to us". There were some exaggerations in khan's statement, because Pakistan had to cross many technical barriers to attain nuclear capability (Khan, 1984, Interview, p. 41).

External Pressure

Zia faced external difficulties in the pursuit of nuclear program. Glenn-Symington amendment also dissuaded the nuclear development program in 1979. Soviet Union's invasion of Afghanistan did counter these difficulties in late 1979. Pakistan confronted many constraints those of which had been removed due to extreme superpowers enmity in Central Asia. The State Department wrote a letter to General Zia for providing assurance that Pakistan would not enrich uranium beyond 5 per cent, a level not useable for nuclear weapons. By the late 1985 or 1986, the level of the limit was surpassed. The US congress passed Nuclear Nonproliferation Act in 1978. The Act strengthened the international mechanism to prevent the transfer of nuclear explosive technology to non- nuclear states. Pressler amendment was passed in 1980s. It increased US Pakistan differences over nuclear proliferation for more than ten years (pp.27-28). According to Pressler amendment, America not only cut off military and economic assistance to Islamabad but their President also certified that Pakistan was not allowed to develop and possess nuclear weapons.

The danger of nuclear exchange was horrible. General Zia accepted a proposal offered by the Prime Minister Rajiv Gandhi in 1988, none, in which India and Pakistan would attack at the installation of its adversary. Vice President George W. Bush visited Pakistan in 1984. He threatened General Zia that Pakistan's nuclear program could create a hurdle between their mutual relationships. According to General Arif, Zia assured Bush that Pakistan's nuclear program was peaceful (Arif, 1995, pp. 353-55). But this, Zia determined with his policy of ambiguity. Zia-ul-Haq constituted Pakistan's nuclear program against extreme international pressure.

Third Phase, 1990-98

The demise of Cold War increased the security dilemmas of small and weak states in many ways that had not been witnessed in the past. Political scholars had developed theoretical approaches to comprehend the challenging problems of small and weak states, for their security dilemma and survival. Dr. Qadeer Khan however, maintained that his unit continued to produce weapon grade enrich uranium. According to nuclear watch report that was given by Mc Grav Hill Companies Inc., Pakistan had 100 to 200 kilograms of Highly Enriched Uranium (HEU) in 1998, and could possess as few as five bomb or as many as twenty five (Khan, 2011, p. 189). It was assumed that President Ghulam Ishaq Khan had fully authorized Pakistan's nuclear program under the powers given in the eighth amendment. Benazir Bhutto reiterated that she did not know about the secrets of Pakistan's nuclear program (The Independent, 1989). Spector said that there was evidence to believe that Benazir Bhutto might have slow down: 'certain narrow aspects' of Pakistan's nuclear program in 1989 when the US President issued the certificate that it did not 'possess a nuclear explosive device' (Spector & Smith, 1 990, p. 90).

In 1995, the white house won congressional approval, for allowing the delivery of a $368 million package of weapons and military equipment to Pakistan, after ignoring Pressler amendment. The aid was provided under Foreign Assistance Act (FAA) was named Brown amendment in 1996. The Brown amendment not only permitted the delivery of the arms package but also allowed for future economic and military assistance for 'counterterrorism' and for other specified purposes. The Brown amendment was intended to encourage nuclear restraint and support Pakistan's role as a moderate Islamic state (Margulies, 2010, p. 10).

In his first address in the national assembly, the Prime Minister Nawaz Shrif, on 7 November 1990, showed positive gesture for developing Pakistan's nuclear policy. President Ghulam Ishaq Khan also accentuated in a key note address to the session of the newly elected parliament on 8 November 1990 that Pakistan would accept any pressure of the United States for the resumption of its assistance (Dawn, 1990).

When Benazir won the election for second time, then the opposition leader Nawaz Shrif publically attacked her views about Pakistan's nuclear policy in 1994. He irritated her government by saying that Pakistan had possessed the atom bomb (Rehman, 1992, p. 39). Prime Minister Benazir Bhutto asserted in April 1995 at the Joint Press Conference with the US President in Washington that Pakistan was ' moderate, democratic, Islamic country that is strategically located at the tri-junction of South Asia, Central Asia and the Gulf, a region of both political volatility and economic opportunity' (Chitkara, 1996, p. 8).

Post-cold war period: International propaganda and Pakistan

The international system was transformed after the termination of Cold War. Pakistan lost much of its strategic importance for the United States. President George. W. Bush did not certify it in 1989 before US congress. It became clear that Pakistan had crossed the threshold. However, by 1990 United States had stopped all the economic and military aid to Pakistan. Glenn amendment was also implemented. According to it, economic aid was banned to those countries, building reprocessing or uranium enrichment facilities. The United States believed that Pakistan might be tempted to transfer the blue prints of an atomic bomb to the radical Muslim countries, those who had hostile attitudes about Washington's global interests (Kapur, 1987, pp. 250-254). However, the US executive justified the Indian nuclear program as it would be used by India to counter China. India had already detonated nuclear device.

General Zia died in an air crash on 17 August 1988. Chairman of senate, Ghulam Ishaq Khan became the President of Pakistan and also the chairman of the Pakistan Nuclear Command Authority (PNCA). The President found it much difficult to ensure and eventually developed Pakistan's nuclear program. Funds were frozen and Khan Laboratory became autonomous. It was renamed Dr. Qadeer Khan. Now it was independent and had nothing to do with the PAEC. (Cheema, 1998, p. 90).

Although the US embargo remained in place, external pressures did not force policy makers to abandon the nuclear option. Pakistan's nuclear managers believed that if Pakistan would give up its nuclear program then the United States would not resume any kind of economic assistance during the Cold War. So the armed forces continued their policy of steadily enhancing the capacity to build nuclear weapons.

Washington government threatened Pakistan in November 1991 that Pakistan would be included in the list of those called as terrorist state, if Pakistan did not give up its nuclearization process. It had also abandoned the favor of Kashmiri militants. Pakistan faced acute dilemma for its nuclear program during the post old war period.

Kashmir Crisis in 1990

Kashmir issue made Pakistan a nuclear state. As compared to India, Pakistan was far behind in nuclear raw material resources, but Indian nuclear weapons assets might have been multiplied over several times. The crisis in Kashmir led to search for security and the start of an arm race, achieving nuclear deterrence (Kanju, 2002, pp. 63-94).

Kashmir issue culminated near to a forth war between India and Pakistan in 1990. The crisis assured the establishment of Pakistan's crude nuclear device. The Kashmir crisis in 1990 highlighted a speedy phase of nuclear completion in South Asia. In world opinion, Kashmir crisis is a nuclear flashpoint in international

politics (Wirsing, 1994, p. 50). India acquired nuclear capability so as to strike back with nuclear weapons in reply to major attack. Kashmir had become an issue of political and military clash for more than 64 years.

Analyst Mushahid Hussain described that "during May 1990…… Pakistani policy-makers and defense planners were convinced that it was the Indian fear of Pakistani nuclear retaliation that deterred India from attacking Pakistan, although apparently India poised for a surgical strike against Pakistan" (The News, 1996). The Brass tacks exercise was one of the largest military exercises by India that had been compared with North Atlantic Treaty Organization (NATO) and Warsaw Pact of the Cold War period. What forced Pakistan to acquire nuclear capability were the Indian-Pakistan crisis of 1986-87 and that of 1990. The 1986-87 crisis was related to India's ostensible plans to attack Pakistan's nuclear installation whereas the 1990's crisis was Kashmir-related crisis (Chari, 2003, pp. 12-14). To conclude, Pakistan now would be capable to disregard viable Indian nuclear exploitation. Pakistan had its dependence on nuclear weapons for ensuring its defense in the future.

Pakistan's nuclear posture after the crisis of 1990

The announcement made by Prime Minister has two aims while expressing his views in Muzaffarbad, the capital of Pakistan-led Kashmir, "he warned that New Delhi could not pursue a unilateral policy for altering the Line of Control in Kashmir. The other objective was aimed at domestic politics, was to pre-empt Benazir Bhutto from yielding to the US pressure on rolling back on Pakistan's nuclear program" (Dawn, 1994). Nawaz Shrif did it when Clinton government had been working to initiate nuclear non-proliferation policy in South Asia in 1993 to "cap, reduce, and roll back" India Pakistan nuclear programs.

The United States offered Pakistan F-16s in the context to follow nuclear non-proliferation policy in South Asia. But Pakistan refused to do so. Pakistan's legislature also rejected the offer in December 1993. The consensus got affirmation after the Soviet's demise from Afghanistan. The general public supported this policy. A public opinion survey held in 1996, had estimated that 61% of Pakistan's official policy wanted to be kept working and continue on its nuclear policy and 32% supported the enterprise of overt nuclear weapons capability (Ahmad & Cortright, 1998, p. 17). It was clear that a large number of populations had been favored Pakistan's acquisition of nuclear weapons capability.

NPT Renewal Conference in 1995

NPT Extension and Renewal Conference were held in April 1995 to extend Non-Proliferation Treaty permanently. Pakistan had not opposed the Non Proliferation Treaty (NPT) regime since its commencement. However, the justification for not signing the treaty was twofold. One was the discriminatory charter/character of the

NPT, while the second was India becoming a power signatory to the agreement. Islamabad repeated the same stand and in a 1995 conference that India was the major threshold in this regard. Pakistan would be left alone in international nuclear diplomacy with the major nuclear powers extremely pressurizing it to sign the treaty (Cheema, 2010, pp. 35-36).

Comprehensive Test Ban Treaty (CTBT) 1995

In the same fashion, Pakistan also did not sign CTBT. Pakistan's decision not to sign the CTBT was also motivated by India's 'nuclear test' which happened in 1995. The United States agencies had detected India's preparation of the Pokhran test site for a nuclear device explosion (Jones & McDonough, 1998, p. 137). Be it a signatory or non-signatory, the signing of CTBT by states would make it difficult for them to conduct nuclear tests. However, it did restraint from detonating the planned nuclear tests (Subrahamanyam, 2004, p. 593). The issue of nuclear proliferation had occupied approximately a similar place in the American foreign policy as had the US-Soviet arms control in the 1980s non proliferation agenda (Ahmad & Cortright, 1998, p. 72). Pakistan did not sign the CTBT; it had significant impacts on Pakistan's nuclear posture.

Islamabad designed a report for allowing for "speculation", but the foreign minister Asif Ahmad Ali threatened and said "if India wants to prove its manhood by conducting a nuclear test, then we have the capacity to prove our manhood". Indian nuclear tests of 11 and 13 May 1998 proved to be astonishing strategic dominance for Pakistan to follow the same, in order for it to maintain a deterrence capability. It also triggered a enthusiastic internal nuclear policy debate (Yasmin, 1999, pp. 43-45). After debating for about two weeks, Pakistan had conducted six reactive nuclear tests.

Conclusion

Pakistan faced international challenges of scarcity of resources, lack of necessary infrastructure, acute external sanctions, international propaganda, antagonism from western states, and of a firm nuclear export control in the achievement of nuclear potential for the continued existence of Pakistan's security dilemma. Pakistan initiated a civilian nuclear power program which was later transformed into a project of nuclear weapons. It eventually built a nuclear arsenal. Various dimension of political, strategic, domestic, bureaucratic, technological, economic and international led path for evolutionary nuclear transformation.

PAEC and KRL have played a crucial role in the establishment of Pakistan's nuclear program. PAEC was exclusively a civilian organization. KRL was also a civilian institution but Pakistani army was the safeguard of its security. PAEC was obliged to promote overall nuclear science and technology in Pakistan. It also provided a wide range of nuclear technology programs for the power reactors, nuclear utilization in agriculture, medicine, and the industry. The particular

organization was KRL, named as Khan Research Laboratories. The prelude objective of the institution was to produce enriched U-235, consisting of the centrifuge process for use in nuclear weapons. Its employees had the experience in PINSTECH.

The conversion of civilian nuclear program to nuclear weapons projects took place due to India's uncertain nuclear intentions. Pakistan's strategic vulnerability accreted during the post cold war international environment. Pakistan lost Washington's patronization in the third phase, 1990-1998. The United States imposed its nuclear non-proliferation policy in South Asia during the post Cold War period. Nonetheless, Pakistan has to be more dependent on nuclear progress for its security dilemma and survival. Hence, nuclear development has become the vital objective of Pakistan's security planning.

References

Ahmad, Samina & Cortright, David. (1998). Pakistan and the Bomb. Karachi: Oxford University Press.

Ali, Akhtar. (1994). Pakistan's Nuclear Dilemma: Energy and Security Dimension Karachi: Economist Research Unit.

Arif, M. K. (1995). Working with Zia. Karachi: Oxford University Press.

A Staff Report. (1988). Nuclear Proliferation in South Asia: Containing the Threat. The Washington DC.

Banerjee, Jyotirmoy. (2004). Nuclear World. New Delhi: Manas Publications.

Benjamin, R. Milton. (1982, December 20). India Said on Pakistan A-Plants. The Washington Post.

Chari, R. P, Cheema, Iqbal, Peraiz & Zuman, Iftekhar. (1996). Nuclear Non- Proliferation in India and Pakistan: South Asian Perspectives. Pakistan: Vanguard Books.

Chari, R. P. (2003). Nuclear Crisis, Escalation Control, and Deterrence in South Asia. Washington DC: Stimson Centre.

Cheema, Iqbal. Zafar. (1998). Pakistan's Strategic Objectives and Doctrinal Development. Paper read out at an International Conference on Peace and Security after India Pakistan Nuclear Tests on 3 December 1998 (pp. 16-35).

Cheema, Iqbal. Zafar. (2010). Indian Nuclear Deterrence. Karachi: Oxford University Press.

Cheema, Iqbal. Pervaiz & Bokhari, H. Imtiaz. (2004). Arms Race and Nuclear Development in South Asia. Islamabad Policy Research Institute: Hanns Seided Foundation.

Chitkara, G. M. (1996). Nuclear Pakistan. New Delhi: A. P. H. Publishing Corporation.

Chopra, D.V. (1986). Nuclear Bomb and Pakistan. New Delhi: Patriot Publishers.

Dawn. (1994, November 8). Islamabad.

Dawn. (1990, November 9). Karachi.

Dhanda, Suresh. (2010). Nuclear Politics in South Asia. New Delhi: Regal Publications.

Ebinger, Charles. K. (1981). Pakistan Energy Planning in a Strategic Vortex. Bloomington: Indiana University Press.

Ganguly, Sumit & Kapur, Paul. S. (2009). Nuclear proliferation in South Asia. New York: Routledge.

Hart, David. (1982). Nuclear Power in India. London: George and Unwin.

Kanju, N. (2002). Indo-Pak Nuclear Cold War. New Delhi: Reliance Publishing House.

Kapur, Ashok. (1987). Pakistan's Nuclear Development. New York: Groom Helm.

Khan, Ahmad. Munir. (1984, October 31). Franco-Pak Nuclear Relations. The News.

Khan, Hassan. Feroz. (2013). Eating Grass: The Making of Pakistani Bomb. New Delhi: Cambridge University Press.

Khan, Zulfiqar. (2011). Nuclear Pakistan. Karachi: Oxford University Press.

Khan, Abdul. Qadeer's Interview. (1984). Reprinted in Defense Journal, vol. x, no. 4 (pp. 41-50).

Kissinger, Henry. (1957). Nuclear Weapons and Foreign Policy. Ny: Harper and Brothers.

Krepon, Michael & Faruqee, Mishi. (1994). Conflict Prevention and Confidence Building Measures in South Asia: The 1990 Crisis. Occasional Paper 17, Washington Post DC: The Henry L. Stimen.

Lavoy, R. Peter. (2007). Nuclear Weapons Proliferation in the Next Decade. New York: Routledge.

Levy, Adrian & Clark, Scott. Catherine. (2007). Deception: Pakistan, the United States, and the Secret Trade in Nuclear Weapons. New York: Walker Publishing Company.

Lux, Dennis. (2001). The United States and Pakistan 1947-2000. Disenchanted Allies. Washington DC: Woodrow Wilson Centre Press.

Margulies, Phillip. (2010). Nuclear Nonproliferation. New Delhi: Viva Books

Matinuddin, Kamal. (2002). The Nuclearization of South Asia. Karachi: Oxford University Press.

Pakistan Times. (1974, January 21).

Pakistan Times, (1979, July 28).

Rajain, Arpit. (2005). Nuclear Deterrence in South Asia. London: Sage Publications.

Rehman, Shahidur. Khan. (1986). Zia Orders Pakistan AEC to Design Indigenou Nuclear Reactor. Nucleonics Week, November. 13 (pp. 45-56).

Rehman, ur. Shahid. (1992). Long Road to the Chaghi. Islamabad: Shahid-ur-Rehman.

Sagan, D. Scott. (2011). Inside Nuclear South Asia. New Delhi: Foundation Books.

Salik, Naeem. (2009). The Genesis of South Asian Nuclear Deterrence. U.K: Oxford University Press.

Spector, S. Leonard. (1988). The Spread of Nuclear Weapons 1987-88: The Undeclared Bomb. Cambridge: Mass Ballinger.

Spector, S. Leonard & Smith, R. R. Jacqueline. (1990). Nuclear Ambitions. The Spread of Nuclear Weapons. Karachi: Farda Publishing Company Karachi.

Sridharan, E. (2007). The India Pakistan Nuclear Relationship. New York: Routledge.

Subrahamanyam, K. (2004). Narshima Rao and the Bomb. Strategic Analysis. Vol.28, no. 4 (pp. 93-125).

The Indian Express. (1986, July 30). Reprinted in Foreign Broadcast Information service / South Asia, 14 August 1986.

The Independent. (1989, January 3). Bhutto in the Dark.

The Nation. (1991, December 2). Islamabad.

The Nation. (1998, February 7).

The News. (1996, February 10).

Wirsing, G. Robert. (1994). India, Pakistan, and Kashmir Dispute. New York: St. Martin, S.

Yasmin, Samina. (1999). Pakistan's Nuclaer Tests: Domestic Debate and International Determinants. Australian Journal of International Affairs. Vol. 53, no.1, April (pp. 42-60).

Biographical Note

Dr. Iram Khalid is Professor, Department of Political Science, University of the Punjab, Lahore. Pakistan.

Zakia Bano is Assistant Professor, Government College for Women, Sahiwal.