Pakistan's Strategic Nuclear Policy and Implications for Deterrence Stability

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Introduction

Atomic weapons are universally considered as political weapons. Consequently, possession of nuclear weapons requires clear articulation regarding its purpose or use. States possessing these weapons articulate the role of nuclear weapons in their respective national security strategies through their nuclear doctrine or policy. A state's nuclear policy or doctrine is, also, a declaration of the strategic interests vital to the state, for whose protection it will resort to the use of ultimate weapon. It also enables a state to act purposefully in the face of the challenges confronting its security.[1] In other words, it reflects a rationale for acquiring nuclear weapons and importance of those weapons in the broader national security framework.

Nuclear policy is reflected on three levels i.e., declaratory, operational and force structure. Additionally, deterrence is the primary goal of nuclear policy of all nuclear weapons states. Moreover, strategic nuclear policy must factor in how the adversary calculates its risks in the eventuality of a war.

Evolution of Pakistan's Strategic Nuclear Policy

Nuclear tests in 1998 fundamentally transformed the nuclear policy landscape in Pakistan. With these tests the era of a covert military-nuclear program and a policy of 'deliberate nuclear ambiguity' came to an end. Prior to May, 1998 Pakistan's nuclear program was covert, and the country publically denied pursuit of nuclear capability. A public debate on the nation's nuclear policy, therefore did not take place, nor foreign and security policy makers –civilians and military–held in-house discussions on nuclear policy and the role of nuclear weapons in country's security strategy.[2] However, May, 1998 proved to be a pivotal month. With overt nuclearization of India and Pakistan deterrence emerged as a new factor in South Asian security environment. At the political level, Pakistani policy-makers had to delineate a policy framework identifying the role of nuclear weapons in national security strategy. At the military level, operational planning had to be configured to

integrate nuclear weapons into the existing war-plans and force structures. Moreover, a command and control regime with secure communications and associated infrastructure also had to be established for managing nuclear operations and capability.

To date, Pakistan has not enunciated an official nuclear doctrine. However, the broad contours of its nuclear policy have been defined periodically by officials and the national leadership through formal statements, and addresses at various academic and policy forums. Moreover, Pakistan regularly conducts tests of various missile systems and makes detailed press statements on development and operational roles of these weapon systems. These statements provide an insight into the operational nuclear policy of Pakistan. Thus, some broad parameters of the framework governing Pakistan's strategic force structure, and targeting policy, including types of delivery systems and circumstances of their use, can be deduced from such declarations.

Pakistan's nuclear policy is India-centric, with which it is engaged in a competitive relationship, rooted in territorial disputes, historical legacy of partition, and complexities of regional security environment. Thus, few constants in shaping Pakistan's nuclear policy have been the nature of military-security centric threats that it perceives from India, widening imbalance in the conventional military forces, and growing asymmetry with India in relative terms. Moreover, the regional security environment and engagement of external powers with the regional countries have also influenced Pakistan's nuclear policy.

Credible Minimum Deterrence

After the nuclear tests, Prime Minister Nawaz Sharif, in May 1999, announced the principle of 'minimum credible deterrence' as the corner stone of country's nuclear policy.[3] Pakistani officials and political leadership have repeatedly stressed the same over the years. It has gradually translated into following elements:

- Nuclear deterrence is India-centric.
- Pakistan's policy follows minimum, credible deterrence
- Requirements of minimum, credible deterrence are dynamic and evolve with changing threat environment.
- Given India's conventional military superiority, Pakistan does not subscribe to the policy of No-First Use.

In October 1999, Agha Shahi, Abdul Sattar and Zulfiqar Khan, the three leading figures of Pakistan's foreign and security policy establishment, in a joint essay, which in itself was a rare public assertion on the subject, wrote that, "minimum deterrence has been and should continue to be the guiding principle of Pakistan's nuclear pursuit. Of course the minimum cannot be defined in static numbers."[4]

However, at the same time they also emphasized that, "nuclear weapons are not meant for war-fighting. Nuclear deterrence, unlike the conventional one, is not degraded by quantitative or qualitative disparity."[5]

Abdul Sattar, one of the co-authors, after a few weeks was appointed Pakistan's foreign minister. Addressing a seminar in Islamabad, in November 1999, he again emphasized that:

> Minimum nuclear deterrence will remain the guiding principle of our nuclear strategy. Although the minimum cannot be quantified in static numbers. That will depend on the Indian build-up. If India goes ahead with its (nuclear) program that will necessitate review and reassessment by Pakistan also. In order to ensure the survivability and credibility of the deterrent, Pakistan will have to maintain, preserve and upgrade its capability.[6]

In June 2001, addressing the Carnegie Nuclear Policy Conference in Washington, D.C, Mr. Abdul Sattar firmly stated that the government had embraced "minimum credible deterrence as the guide to [its] nuclear program".[7] However, no public statement, as of yet, has detailed requirements or quantified number of weapons, types of delivery systems and fissile materials stockpile required to achieve minimum, credible deterrent posture. Similar is the case of India, when it embraced 'minimum credible deterrence' as a doctrine; it termed it a dynamic concept.[8]

The National Command Authority (NCA), officially the apex- decision-making body on all matters related to nuclear policy, weapons development and employment issues, in its public statement have also reiterated a policy of 'Minimum Credible Deterrence'. Press statements of the NCA in 2002, 2003 and 2004 emphasized development of nuclear forces as per "minimum deterrence needs".[9]

At the operational level, minimum credible deterrent, thus, translated into a nuclear strategy which emphasized credibility, and remained deliberately ambiguous. It focused on achieving following objectives:

- Deterring external aggression.
- Deterring pre-emptive strikes against strategic assets.
- Deterrence through combination of conventional and nuclear forces.
- Stabilizing strategic deterrence in South Asia.
- Resorting to nuclear weapons only as 'last resort'.

Gradual Shift to Full-Spectrum Deterrence

Since 2006, the nuclear policy predicated on the principle of 'minimum credible deterrence' has undergone gradual evolution. After the signing of India-US strategic partnership agreement Pakistan's anxieties grew. The Indo-US agreement envisaged nuclear and ballistic missile defence cooperation. Pakistan's concerns were elaborated in 2006 NCA press statement, stating, "India-US agreement would enable India to produce significant quantities of fissile material and nuclear weapons from unsafeguarded nuclear reactors, the NCA expressed firm resolve that our credible minimum deterrence requirements will be met."[10]

On May 21, 2009, a spokesperson of Pakistan's foreign ministry linked military procurement of India to lowering of nuclear threshold. He stated that, "there are acquisitions of sophisticated weaponry by our neighbour which will disturb the conventional balance between our two countries and hence, lower the nuclear threshold."[11]

A December, 2010, press statement from the NCA only referred to maintaining 'credible deterrent'[12] and in a surprise move dropped the epithet 'minimum' which had been part of the nuclear policy earlier. However, the July, 2011, statement again reverted to the principle, but with the formulation described as 'Credible Minimum Deterrence'.[13] It also stated that Pakistan will maintain "effective, reliable and credible deterrence" capability. Moreover, 2011, was also the year, when Pakistan introduced battlefield nuclear weapons capable of delivering nuclear warheads at shorter rangers, i.e. at 60 kms.

Khalid Banuri, Head of Arms Control and Disarmament Affairs Directorate at Strategic Plans Division (SPD), in 2011, stated that the country's nuclear policy was devised to "deny India the space for launching any kind of aggression against Pakistan."[14] He further emphasized that Pakistan intends to achieve following objectives through its nuclear policy:

- Preserve Pakistan's territorial integrity.
- Prevent military escalation.
- Counter-balance India's conventional superiority.

In 2013, addressing a workshop on 'Deterrence Stability in South Asia', then DG-SPD, Lt. Gen (R) Khalid Kidwai asserted that Pakistan's nuclear policy is geared towards 'deterrence of aggression', and in the event of failure then 'defence of its sovereignty'.[15] He outlined following five objectives of Pakistan nuclear policy:

- Deter all forms of external aggression.
- Deterrence will be achieved through a combination of conventional and strategic capabilities.
- Deter counter-force strategy targeted against the strategic capabilities of Pakistan.
- Stabilization of strategic deterrence in South Asia.
- Maintaining the current de-facto status.

At the same workshop, Gen Kidwai also mentioned that Pakistan would deploy a 'modest triad' to develop a second strike capability. A step in this direction was taken in 2012, when Headquarters of Naval Strategic Force Command (NSFC) was established. Commander of NSFC stated that the Force is custodian of the nation's "second strike capability", and it will strengthen "Pakistan's policy of Credible Minimum Deterrence".[16]

In September, 2013 NCA asserted that Pakistan adheres to policy of 'Credible Minimum Deterrence, and will maintain 'Full-Spectrum Deterrence' capability to deter all forms of aggression. Moreover, a spokesperson of foreign ministry stated that Pakistan's "nuclear deterrence capability is aimed at maintaining regional stability in South Asia".[17]

On 23 March 2015, addressing a conference in Washington, D.C., Lt. Gen (R) Kidwai, after his retirement as DG-SPD, explained the evolution of nuclear policy. He explained that Pakistan began its nuclear journey with the principle of credible minimum deterrence, but gradually 'translated it to the concept of full spectrum deterrence'. He asserted that Pakistan moved towards this new posture because India was attempting to find 'space for conventional war'.[18]

In September 2015, NCA underscored that 'Full-Spectrum Deterrence' posture was in line with principle of 'Credible Minimum Deterrence'.[19] Further explaining Pakistan's nuclear rationale, Foreign Secretary Aizaz Ahmad Chaudhry, the top diplomat of the country, in October 2015, stated that the objective of Pakistan's "nuclear programme is one dimensional: stopping Indian aggression before it happens. It is not for starting a war. It is for deterrence".[20]

In February, 2016, NCA asserted that nuclear deterrence is a "factor of stability" in the region, thus, Pakistan will continue to "maintain Full Spectrum Deterrence, in line with the policy of Credible Minimum Deterrence".[21]

Nuclear use policy: Delivery Systems and Their Likely Targets

To implement its strategic nuclear policy, Pakistan has raised strategic nuclear forces armed with a variety of delivery systems. Pakistan also has a nuclear weapons use policy. However, under what circumstances and how will Pakistan employ its nuclear weapons has not been disclosed. Ambiguity and non-declaration of an official nuclear doctrine have been the cardinal principles guiding the planning for nuclear weapons use. However, a broad outline of strategy to employ nuclear weapons can be gleaned from rare statements made on the subject by Pakistani leaders and policy-makers. Moreover, the role assigned to variety of delivery systems by Pakistan also provides a source to infer employment strategy.

Public statements on the willingness to use nuclear weapons in a conflict have been rare. Emphasis has been on employment of nuclear weapons as a "last resort". However, what constitutes last resort, has not been made public. During the height of 2001/02 military standoff with India, Lt. Gen(R) Khalid Kidwai, also echoed the same. He asserted nuclear weapons will be used only "if very existence of Pakistan as a state is at stake".[22] Similarly, in April 2002, then President General Pervez Musharraf, also declared that mounting pressure from India meant "as last resort

(use of) atom bomb is also possible".[23] And, the contingency for nuclear weapons use will arise "if Pakistan is threatened with extinction". However, President Musharraf, directly, linked it to the public pressure saying, in such an event "the pressure of our countrymen would be so big that this option, too, would have to be considered".[24]

In recent years, development and deployment of battlefield nuclear weapons suggest that Pakistan has lowered the threshold of nuclear use. As part of its full-spectrum deterrence posture, Pakistan has explicitly stated that all types of nuclear weapons are for "deterrence" only. However, if deterrence break downs, then, nuclear weapons could be employed to control military escalation[25] and establish "intra-war" deterrence.[26] However, at what point in an active conflict would such a use of nuclear weapons be contemplated, has not been stated publicly.

Pakistan has categorized its nuclear weapons for meeting requirements at three levels, i.e., strategic, operational and tactical. This reflects that Pakistan has a specific targeting strategy for each level. Given the presence of operational and tactical level, it appears that Pakistan has developed a mixture of counter-force and counter-value targeting strategy. At present, Pakistan has nine types of delivery systems, in two categories, i.e., ballistic and cruise missiles. They can strike targets located at 60 km to 2750 kms.

Battlefield TNWs
NASR/ Hatf-IX

In April 2011, Pakistan introduced a new missile called NASR, with a range of 60 kms. It proclaimed this new weapon system has been developed to "add deterrence value" at "shorter ranges". Its short range effectively made it a weapon system suited for battlefield use. Moreover, it has been labeled as a "quick response system", that is capable of defeating "all known Anti-Tactical Missile Defence Systems". Though NASR is dual-capable, i.e., it can carry both conventional and nuclear warheads, yet Pakistan has repeatedly stressed it can carry "nuclear warhead" of suitable yield. NASR missile is launched from a mutli-tube launcher, capable of launching four successive missiles.

Pakistan has tested this missile system five times. The most recent test was conducted in September, 2014. ISPR statements have emphasized that NASR contributes to "full spectrum deterrence" against perceived evolving threats. Lt. Gen

(R) Kidwai, in March, 2015, explicated on the threat perception and necessity of developing NASR. He was the head of SPD when NASR was developed and flight-tested. He asserted Pakistan believed India was exploring space for conventional conflict below the nuclear threshold. It necessitated development of a weapon system with a shorter-range to "plug this particular gap" as war was being "brought down" to "tactical level". [27]

Operational Level Weapon Systems
Abdali/Hatf-2

Abdali/Hatf-II, introduced in March, 2001, is a short-range ballistic missile that can strike targets at a distance of 180 kms. It can carry both conventional and nuclear warheads. It was flight-tested along with other missiles during the height of 2001/02 military stand-off with India was later inducted into the Army Strategic Force Command (ASFC). A March 2011 statement issued by ISPR, after a test-launch of Abdali/Hatf-II, asserted that Abdali weapon system provides country's nuclear forces "operational level capability". Moreover, technical work to improve its accuracy has continued. In February, 2013, ISPR reported that Abdali can deliver warheads with "high accuracy". While, it also has been augmented with technology to evade missile defenses, with "varied maneuverability options".[28] Abdali can be used to hit military targets across the border from safety of Pakistan's heartland.

Ghaznavi/Hatf-III

Ghaznavi is a solid-fuel, road mobile, short-range surface to surface ballistic missile. It was inducted in the Pakistan army over a decade ago. It can deliver conventional and nuclear warheads to the maximum range of 290 kms.[29] In recent years' troops from AFSC have conduced several training launches to validate technical parameters, handling and operating of the complex weapon system.[30] In 2008, a training launch of Ghaznavi was conducted with "live firing of missile under realistic operational environment".[31] Given the range of 290 kms, Ghaznavi, can strike several cities in Northern and Western India.

Babur/Hatf-VII

In response to Indian acquisition of *Brahmos* supersonic cruise missile from Russia, Pakistan introduced a ground-launched cruise missile, Babur/Hatf-7, in August,

2005. It is a sub-sonic land-attack weapon system that can carry conventional and nuclear warheads to the range of 700 kms.[32] Launched from a mutli-tube vehicle it is capable of "high-maneuverability" and hits the targets with "pin point accuracy". The mutli-tube missile launch vehicle also provides a significant force multiplier effect, as it increases the survivability of nuclear force. It also increases the targeting options available for utilizing this weapons system. In September, 2012, ISPR noted that Babur can strike targets both at 'land and sea'. It enables Pakistan to counter ballistic missile defences, strike military targets on land, and ships at sea. Moreover, Babar also provides a secure platform for an assured second-strike.

Ra'ad/ Hatf-VIII:

Introduced in August, 2007, air-launched cruise missile, Ra'ad/Hatf-VIII is described as "low altitude, terrain hugging missile with high maneuverability".[33] It can strike targets at a distance of 350 kms. Pakistan also maintains that Ra'ad missile has "special stealth capabilities".[34] Its purpose, according to ISPR, is to secure "strategic standoff capability on land and at sea".[35] Ra'ad enables Pakistan to strike counter-force targets across the border and at sea.

Strategic Delivery System
Shaheen-I/Hatf-IV

Shaheen-I/Hatf-IV missile system was introduced as a single-stage, solid fuel, road mobile ballistic missile with maximum range of 700 kms. It was first unveiled in 1999, and since then it has been tested several times. It is an operational weapon system in service with ASFC. It is launched from transport erecter launcher vehicles, giving it significant mobility and flexibility of quick firing, thus, enhancing its survivability. It can deliver conventional and nuclear warheads.

Its design has constantly been under improvement. In 2012, Shaheen-1A, an improved version of the missile system with a range extended to 900 kms was tested.[36] Its accuracy has undergone significant improvement over the years. It is considered part of missile family, designated for counter-value targeting. An ISPR statement issued in 2015, after a test launch of the Shaheen-1A, stated this system was part of 'strategic capabilities' of the country which were based on policy of 'Credible Minimum Deterrence'. [37]

Ghauri Missile System/Hatf-V

Pakistan's only liquid-fuel missile system, Ghauri/Hatf-V is a medium-range missile, which can deliver nuclear payload to a distance of 1300 kms. Introduced in 1998, it has undergone significant technical improvements over the years. It is a road-mobile weapon system. Its liquid propellant, however, is a significant limitation which increases launch preparation time and constrains ease in storage and transportation. It is an operational weapon system in service with ASFC. In 2008, a strategic missile group of ASFC conducted its first training launch. Its most recent training launch was conducted in April, 2015, which according to ISPR was also meant to gauge operational and technical readiness of ASFC. Its range makes it a strategic weapon that can strike cities in Indian heartland.

Shaheen-II/Hatf-VI

It is an intermediate-range, solid-propellant, two-stage ballistic missile. It was first flight tested in March, 2004, with a range of 2000 kms. It is a road-mobile weapon system and can deliver conventional and nuclear payloads. Shaheen-II is an operational weapon system in service with ASFC.[38] Troops from a Strategic Missile Group have conducted training-launches in recent years, with most recent conducted in November, 2014.[39] During the November, 2014 test-launch a different design of Shaheen-II was tested at a range of 1500 kms. ISPR statement, quoting then DG-SPD, Lt. Gen. Zubair Mahmood Hayat, stated that this missile launch consolidated 'full-spectrum credible minimum deterrence'.[40] Shaheen-II brought under its range entire Indian landmass, including eastern sea-board and also urban center of Kolkatta. Its targets can include urban centers and select large military bases situated deep inside India.

Shaheen-III

Introduced in March, 2015, Shaheen-III is Pakistan's longest range missile to date. It can carry conventional and nuclear warheads to a range of 2750 kms. ISPR statement made a specific note of mentioning that missile system had been tested at its 'maximum range'. A second test launch in December, 2015, quoted present DG-SPD Lt. Gen. Mazhar Jamil as saying that Shaheen-III complements Pakistan's "deterrence capability", whereas "nuclear deterrence strengthens strategic stability in South Asia". Moreover, Lt. Gen. (R) Kidwai, in March, 2015, asserted that Shaheen-III can

target Indian Islands of Nicobar and Andaman in Indian Ocean. He described these Islands as possible bases to store and launch strategic weapons for India. Thus, Shaheen-III brings Nicobar and Andaman Islands under its striking range, and is an attempt to deny India a "second strike capability within its land borders". This explicit purpose of Shaheen-III makes it a weapon system aimed at striking counter-force targets, at the higher end of full-spectrum deterrence capability. However, given the long-range of Shaheen-III, it is also suited for counter-value targeting across Indian continental landmass, thus, multiplying the targeting options available to Pakistan.

Implications for Deterrence Stability

Bernard Brodie famously wrote after the advent of nuclear weapons that "thus far the chief purpose of our military establishment has been to win wars. From now, its chief purpose must be to avert them. It can have almost no other useful purpose."[41] Deterrence is the fundamental objective of strategic posture of every nuclear weapon state. Deterrence is a political and psychological phenomenon, operationalized through strategic nuclear forces equipped with strategic weapons systems. Deterrence aims to prevent the enemy from taking hostile action. It can only work when there is a realization of the certainty of any risk taking being disproportionately higher than any possible gains. According to the nuclear deterrence theory there are three pre-conditions to ensure deterrence stability. First is possession and demonstration of capability. Second is demonstrating credibility that capability will be used if circumstances arise. Third is communicating to the adversary in clear terms what entails if deterrence breaks down. For this to work it is necessary that both sides equally recognize the effectiveness of deterrence in their strategic relationship. Moreover, each side is deterred by certainty of other's response and the unacceptable damage it would suffer.

Doctrinal concepts are reflections of strategic circumstances. Pakistan's nuclear posture is India-specific and is designed to act as a force equalizer to overcome conventional imbalance vis-à-vis India. It means Pakistan seeks to avoid war rather than engage in costly prolonged military hostilities. Taking into account India's nuclear doctrine of massive retaliation, growing conventional military capabilities, and implementation of a proactive operations strategy, Pakistani strategic planners believe that it is essential to stabilize deterrence at all levels of threat spectrum.

In 2011 Pakistan introduced TNWs as another "layer" of deterrence. Gradually, they were incorporated into the nuclear policy, by adopting operational posture of "full spectrum deterrence" which is defined as plugging the gap between conventional and strategic forces. To counter the threat Pakistan modified its strategic force posture by developing TNWs. Theoretically, TNWs are meant to provide more flexible responses to policymakers and therefore enhance deterrence credibility. Pakistani policy-makers believe that effective deterrence has "plugged" any space to employ war as an instrument of policy. The logic behind shift in strategic nuclear posture of Pakistanis to stabilize deterrence through maintaining mutual vulnerability to retaliation against any perceived threat from the Indian side. This draws a credible linkage between conventional war and nuclear escalation and, attempts to maintain mutual deterrence at all levels. It, in turn, makes India aware of the danger of initiating conventional operations, even at a limited scale.

Targeting Strategy and shifting posture

A crucial impact of gradual shift in Pakistan's deterrence posture has been a declared move towards counter-force targeting strategy. Credible Minimum Deterrence essentially called for a counter-value targeting strategy that threatened maximum collateral damage. It, in fact, conveyed if deterrence were to be breached, it would invite unacceptable damage. It was manifested by nuclear warheads of high-yield and delivery systems that can target cities and industrial centers.

Full-spectrum deterrence posture, on the other hand, is pegged to a counter-force strategy, while retaining option to also conduct counter-value strikes. At the higher and lower end of spectrum, both NASR and Shaheen-III have been given precise military targets. In the case of NASR, using it on battlefield, will limit the collateral damage, due to miniaturized warhead and precision targeting. Whereas, Shaheen-III, though can be employed for counter-value targeting, has been explicitly developed to target Indian nuclear warheads and delivery systems stored at Islands of Nicobar and Andaman. This is another military target. It also limits the collateral damage that adversary would suffer from such strikes. Though taking out military assets of the adversary undermines its military and strategic capabilities but the adversary can absorb the damage, as it won't be extensive.

Counter-force targeting strategy by Pakistan, limits the collateral damage for the adversary. But it, also has the potential to escalate the conflict towards a strategic nuclear exchange, as for any counter-force strike, the adversary is bound to respond using its nuclear deterrent. Moreover, Lt. Gen. (R) Kidwai, explicitly, asserted that Shaheen-III is intended to denying India a second strike capability on its territory, which is another instability introduced into the deterrence equation. However, deterrence is strengthened when both sides are confident of their second strike capabilities. It works to avoid the "unthinkable" disaster. The realization that no side can conduct a surprise first strike and be able to escape punishment can lead towards strategic stability and a meaningful political engagement.

Conclusion

Pakistan has not formally declared a nuclear doctrine. However, pronouncements of Pakistani officials and periodic statements on the subject provide an insight into Pakistan's strategic nuclear policy and operational nuclear posture. These statements indicate strategic nuclear policy and the force configuration at the operational level.

Pakistan's nuclear policy and force structures are evolving as the deterrence relationship between India and Pakistan evolves. Pakistan began to operationalize its deterrent with the principle of 'Minimum Credible Deterrence'. Gradually, it has embraced the concept of 'Full-Spectrum Deterrence', which it proclaims is in accordance with the over-arching policy of maintaining a minimum, but credible deterrent. There are two factors responsible for Pakistan's doctrinal evolution. First is the Indo-US nuclear deal and the second, India's move toward operationalizing a limited conventional war fighting doctrine. The latter, is also linked to the political and security context of India-Pakistan relationship.

Pakistan's approach to building a deterrent force at all levels of threat spectrum offers some interesting insights about the transforming operational strategic force. Gradual shift in Pakistan's targeting policy includes preference of counter-force over counter value targets. Pakistan's nuclear use doctrine has put multiple Indian industrial centers, defence facilities, military targets on land and sea, along with holding large urban centers at risk. Moreover, Pakistan has explicitly stated that it will deny India a second strike capability on its territory.

Pakistan's inclusion of short-range nuclear weapons (NASR) and a strategic delivery system (Shaheen-III) is specifically aimed at denying India a second strike capability. It reflects a move away from a nuclear policy of minimum credible deterrent to full-spectrum deterrence posture. However, Pakistan continues to reiterate that its full-spectrum deterrence capability is in accordance with the policy of maintaining credible minimum deterrent.

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Endnotes

[1] Henry Kissinger, *Nuclear Weapons and Foreign Policy* (New York: Harper and Brothers, 1957), 405

[2] Brig Naeem Salik, *Genesis of South Asian Nuclear Deterrence* (New York: Oxford University Press, 2010), 234

[3] PM remarks on Pakistan Nuclear policies and the CTBT at NDC, Islamabad 20 May 1999

[4] Appendix 5, *Nuclear stability in South Asia*, ed P R Chari (New Delhi: Manohar Publishers, 2003), 192

[5] Ibid.,191-192

[6] Abdul Sattar, "Pakistan's response to the Indian Nuclear doctrine" (speech, Islamabad Council on World Affairs and the Islamabad Institute of Strategic Studies, Islamabad, November 25, 1999). Also quoted in Bhumitra Chakma, *Pakistan's Nuclear Weapons* (London and New York: Taylor & Francis Group, 2009), 50. Speech excerpt archived at Pakistan Nuclear, Federation of American Scientists, November, 1999, accessed on March 31, 2016 http://fas.org/news/pakistan/1999/991125-pak1.htm

[7] Abdul Sattar (speech, Carnegie International Non-Proliferation conference, June 18, 2001. "The Acronym Institute for Disarmament Diplomacy," accessed on March 30, 2016, http://www.acronym.org.uk/dd/dd58/58docs6.htm#sattar,

[8] Interview by Jaswant Singh, The Hindu, November, 1999, accessed on March 31, 2016, http://www.acronym.org.uk/spsingh.htm

[9] Musharraf rules out arms race, Dawn, September 25, 2002, http://www.dawn.com/news/58829/musharraf-rules-out-arms-race. Also see Musharraf Rules out freezing N-Program Assistance to Iran denied, Dawn, September 4, 2003, http://www.dawn.com/news/113782/musharraf-rules-out-freezing-n-programme-assistance-to-iran-denied, 2003 . Also see NCA decide on Use of N-Weapons, Dawn, January 7, 2003,

[10]Pakistan Top Nuclear Command Concerned Over India-US deal, Space War, April 13, 2006, http://www.spacewar.com/reports/Pakistans_Top_Nuclear_Command_Concerned_Over_India_US_Deal.html

[11] Minimum N-deterrence will be maintained: FO, Dawn, May 22, 2009, http://www.dawn.com/news/466054/minimum-n-deterrence-will-be-maintained-fo

[12] National Command Authority (NCA)-ISPR Press Release Archive, December 14, 2010, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&id=1608

[13] ISPR Press Release, No-PR166/2011-ISPR, July 14, 2011, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&id=1796#pr_link1796

[14] Memorandum from Air Commodore Khalid Banuri, Director of Arms Control and Disarmament Affairs in the SPD, quoted in CRS Report on "Pakistan Nuclear Weapons" (February 12, 2016), 10. https://www.fas.org/sgp/crs/nuke/RL34248.pdf

[15] General Khalid Kidwai, Rationale of Pakistan nuclear Doctrine and Challenges to the Deterrence Regime in South Asia" (presentation, IISS-CISS workshop on Defence deterrence and stability in South Asia, Islamabad, 10 December 2013), conference attended by authors. Also quoted in Mark Fitzpatrick, Overcoming Pakistan's Nuclear Danger (London: IISS Adelphi Paper, 2014),

[16]ISPR Press Release No-PR 122/2012-ISPR, May 19,2012, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&id=2067

[17] Pakistan Maintains Stance on Nuclear Non-Proliferation, Gulf News Pakistan, April 18, 206, http://gulfnews.com/news/asia/pakistan/pakistan-maintains-stance-on-nuclear-non-proliferation-1.1226992

[18] General Khalid Kidwai, in conversation with Peter Levoy, Carnegie Nuclear Policy Conference 2015, Carnegie Endowment for International Peace, Washington DC, March 23, 2015, http://carnegieendowment.org/files/03-230315carnegieKIDWAI.pdf .

[19]ISPR Press Release No-PR 133/2013-ISPR, September 5, 2013, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&id=2361#pr_link2361

[20] Tactical N-arms Towards off War Threat: FO, Dawn, October 20,2015, http://www.dawn.com/news/1214196

[21] ISPR Press Release No PR64/2016-ISPR, February 24, 2016, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&id=3211 curiously this NCA statement dropped the qualifier "capability" with Full-Spectrum Deterrence, as had been emphasized earlier.

[22] P. Cotta-Ramusino and M. Martellini, "Nuclear Safety, Nuclear Stability And Nuclear Strategy In Pakistan: A Concise Report Of A Visit By Landau Network - Centro Volta," January 14, 2002

[23] Hassan Suroor, Musharraf won't Rule Out Use of N-Arms, The Hindu, April 7, 2002, http://www.thehindu.com/2002/04/07/stories/2002040702790100.htm

[24] Excerpt from Musharraf's interview to *Der Spiegel* quoted in Feroz Khan, Eating Grass: The Making of the Pakistani Bomb, Stanford University Press, 2012, 352.

[25] Memorandum from Air Commodore Khalid Banuri, Director of Arms Control and Disarmament Affairs in the SPD, quoted in CRS Report on "Pakistan Nuclear Weapons" (February 12, 2016), 10. https://www.fas.org/sgp/crs/nuke/RL34248.pdf

[26] Bruno Tertrais, "Pakistan's Nuclear and WMD Programmes: Status, Evolution and Risks," *Non-Proliferation Papers*, No 19, July 2012, http://www.sipri.org/research/disarmament/eu-consortium/publications/Nonproliferation-paper-19

[27] General Khalid Kidwai, in conversation with Peter Levoy, Carnegie Nuclear Policy Conference, Carnegie Endowment for International Peace, Washington DC, March 23, 2015, http://carnegieendowment.org/files/03-230315carnegieKIDWAI.pdf

[28] ISPR Press Release, NoPR20/2013-ISPR, February 15, 2013, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&id=2242

[29] ISPR Press Release No PR 115/2012-ISPR, May 10, 2012, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&date=2012/5/10

[30] Ibid.

[31] ISPR Press Release No PR 31/2008-ISPR, February 13,2008, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&date=2008/2/13

[32] ISPR Press Release No PR 144/2012-ISPR, June 5,2012, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&date=2012/6/5

[33] ISPR Press Release No PR 138/2012-ISPR, May 31, 2012, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&date=2012/5/31

[34] Ibid.

[35] Ibid.

[36] ISPR Press Release No PR98/2012-ISPR, April 25, 212, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&date=2012/4/25

[37] ISPR Press Release No PR382/2015-ISPR, December 15, 2015, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&date=2015/12/15

[38] ISPR Press Release No PR27/2008-ISPR, April 21,2008, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&id=331

[39] ISPR Press Release No PR247/2014-ISPR, November 13, 2014, https://www.ispr.gov.pk/front/main.asp?o=t-press_release&date=2014/11/13

[40] Ibid.

[41] Bernard Brodie, *The Absolute Weapon: Atomic Power and World Order*, (New York: Harcourt Bruce and Company, 1946) 80-81