

## **PAKISTAN'S NUCLEAR POLICY & DOCTRINE TEN YEARS HENCE – WHERE DO WE GO FROM HERE?**

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*“If India builds the bomb, we will eat grass or leaves, even go hungry, but we will get one of our own. We have no other choice”*

*Zulfiqar Ali Bhutto – 1965<sup>1</sup>*

### **Introduction**

May 2008 marks the tenth anniversary of Pakistan's nuclear tests. The strategic choice to go nuclear was made in the aftermath of the loss of East Pakistan in 1971. On 24 January 1972 ZA Bhutto convened a meeting of his top scientists in Multan and launched his nation irrevocably on the nuclear path.<sup>2</sup>

The nuclear journey was not an easy one. Those opposed to the Pakistani nuclear program used all stratagems including denial of technology, economic sanctions, military threats, political coercion and a rabid vilification campaign to block Pakistan's inexorable advance.

The Pakistani leadership refused to buckle under pressure resulting in the Persistence, faith and belief that nuclear deterrence was essential for national security got us the Bomb in the teeth of stiff opposition. Now that we have achieved the *de facto* nuclear status and a modicum of strategic stability has been introduced into the South Asian context, where do we go from here? To answer this question, one needs to explore the current strategic thought.

### **Prevalent Strategic Thought**

Pakistan does not have a formal nuclear doctrine but policy statements of the top government officials provide sufficient material to construct the putative Pakistani nuclear doctrine and policy.

The underlying feature of these official statements is that nuclear weapons are solely intended to *deter* military aggression. This basic aim is qualified by the proviso that Pakistan's nuclear policy is one of *restraint* and *responsibility*. The four salient features underpinning Pakistan's nuclear policy are: Deterrence of all forms of external aggression; ability to deter a counter strike against strategic assets; stabilization of strategic deterrence in South Asia; and conventional and strategic deterrence methods.<sup>3</sup>

### **Pakistani Concept of Nuclear Deterrence – Different Points of View**

Most Pakistani scholars agree with the official version that nuclear weapons deter Indian aggression. According to Dr Zafar Iqbal Cheema, the fundamental objective of having nuclear weapons is deterring rather than fighting a war with India. Other objectives of the Pakistani nuclear doctrine are: to maintain an overall strategic equilibrium and to neutralize conventional military asymmetries against India, with the view to safeguarding its territorial integrity and upholding its political sovereignty. Conventional military disparities *vis-à-vis* India and lack of strategic depth compel Pakistani military leaders to threaten the use of nuclear weapons as a deterrent against a large-scale Indian invasion threatening its territorial integrity. Cheema contends that such threats have been deliberately made on a number of occasions.<sup>4</sup> Nuclear deterrence has over the past two decades helped diffuse various conflict-situations between India and Pakistan.<sup>5</sup> More recently, nuclear deterrence held during the multiple crises of Kargil 1999 and the year long military standoff during 2002.

Non-Pakistani nuclear analysts are of the view that security considerations alone haven't shaped Pakistani strategic thought. They suggest that Pakistani nuclear aspirations have also been prompted by reasons of prestige and the urge to become the leader of the Islamic world. Smruti Patnaik, an Indian scholar feels that the drivers for Pakistani nuclear motivation are *deterrence against India, self reliance, dealing with US sanctions, leadership of the Islamic World, protection against international conspiracy, and national pride*.<sup>6</sup> Peter Lavoy of the US Naval Post Graduate School

(NPS), Monterey has constructed a similar list. According to him the key elements of Pakistan's strategic culture are *opposition to Indian hegemony, primacy of defence requirements, nuclear deterrence, acceptance but not reliance on outside assistance, and identification with conservative Islamic causes.*<sup>7</sup> While these lists cover the essential ingredients, some elements have been deliberately added to give it a twist. In Lavoy opinion Pakistan's strategic policy is not only based on the requirements of neo-realism, but is also flavoured by *strategic myths, strategic myth makers* and the process of *strategic mythmaking*. According to Lavoy Pakistan's national security policy is influenced by the composition, scope, and logical consistency of the strategic myths themselves. He feels that identity, background and skills of the strategic myth maker, or carrier of these beliefs; and the process of strategic myth making legitimises, popularises and institutionalises strategic arguments.<sup>8</sup>

Pakistan's defence policy to deter Indian aggression is based on the hard fact that all Indian missile groups and strike corps are strategically deployed to target Pakistan.<sup>9</sup> No mythmaking is required to conjecture this threat. Western sources, such as Jane's Intelligence Review and US Department of Defense (DoD) agree that Pakistan's motive for pursuing a nuclear weapons program is to counter the threat posed by its principal rival, India, which has superior conventional forces and nuclear weapons.<sup>10</sup>

### **Linkage with Conventional Deterrence**

Nuclear deterrence is intrinsically linked with conventional deterrence in the overall defence strategy of Pakistan. The armed forces of Pakistan form a very thick and visible layer of its multilayered defence policy. Years of war and near wars with India have resulted in the creation of a very large and credible military force equipped with conventional weapons. These conventional forces are meant to provide sufficient space before a nuclear option is contemplated.

Pakistani conventional thought perceives a defensive battle along the Line of Control (LoC) and the international border. The most likely threat scenario suggests the development of multiple

offensive thrusts from across the eastern border to capture core areas in Pakistani territory. These attacks are to be absorbed by holding formations, before local reserves and strike formations execute ripostes and counter offensives, with the aim of regaining lost area and taking the war into the enemy territory and thus ending the war on a favourable note.

How exactly or when the war would transit from conventional to nuclear mode has not been publicly articulated.

### **Minimum Credible Deterrence (MCD)**

Publicly, Pakistani leaders have emphasised that minimum deterrence is the cornerstone of Pakistan's security policy. In May 1999, Prime Minister Nawaz Sharif, announced the principle of 'minimum credible deterrence,' stating that Pakistan's nuclear policy was 'to deter all forms of external aggression that can endanger our national security' by maintaining a minimum credible deterrence. He promised that 'Pakistan will not use or threaten to use nuclear weapons against non-nuclear weapon states' and vowed that it was against an open-ended arms race in South Asia. It would be of interest to note, that in this statement Pakistan did not seek an arsenal equivalent to that of India.<sup>11</sup>

The Minimum Credible Deterrence (MCD) posture means maintaining an adequate stock of nuclear warheads and dependable means of delivery, which can survive the first strike before being launched.<sup>12</sup> According to a US Congressional Research Service (CRS) Report, Pakistani officials have already determined the arsenal size needed for a minimum nuclear deterrent. The same report states that as of January 2008 Pakistan has 60 nuclear warheads using an implosion design with a solid core of HEU, approximately 15 to 20 kg per warhead. These can be delivered either by Pakistan Air Force's nuclear capable aircraft or Army's surface to surface missiles.<sup>13</sup>

### **No No-First-Use (NFU) Policy**

Pakistan does not subscribe to the policy of No-First-Use (NFU).<sup>14</sup> It reserves the right to use nuclear weapons, if its very

existence is threatened. This unequivocal rejection of a self imposed restraint in face of an existential threat has been evidenced in a number of leadership level statements. During the 2002 military standoff with India, President Musharraf went on record to state that Pakistan did not want a conflict with India but if it came to war between the nuclear-armed rivals, his country would “respond with full might.” This statement was interpreted to mean that if pressed by an overwhelming conventional attack from India, with its superior conventional forces, Pakistan might use its nuclear weapons.<sup>15</sup>

Pakistan’s rejection of India’s NFU pledge suggests that nuclear weapons are integral to its defence and deterrence doctrine. Pakistani leaders consider India’s NFU offer as declaratory posturing, rather than actual policy. A Pakistani NFU would undermine the credibility of its deterrence against an Indian attack or coercion. Pakistan has no choice but to indulge in nuclear signalling to prevent an Indian aggression at an early stage. Under these circumstances, an NFU policy does not fit into the present scheme of things.

### **Nuclear Command & Control**

Pakistan’s nuclear weapons are controlled by the Nuclear Command Authority (NCA). Created in February 2000, the NCA comprises the President, the Prime Minister, several cabinet ministers, the Chairman of the Joint Chiefs of Staff Committee and the services chiefs. It oversees nuclear research and development, command and control during wartime and advice to the president about the use of nuclear weapons.<sup>16</sup>

The Pakistani nuclear command and control system has three layers:

- The NCA, is the top decision making agency consisting of country’s ten highest decision makers;
- The Strategic Plans Division (SPD) acts as the secretariat to the NCA and is tasked with developing and managing Pakistan’s nuclear capability in all dimensions; and

- The Strategic Forces Commands (SFC) for each service of the armed forces are responsible for planning and control as well as operational directives for nuclear weapons deployment and use.<sup>17</sup>

### **Policy of Nuclear Restraint**

#### **Position on International Non Proliferation Regimes.**

Pakistan has followed a consistent policy on global norms on restraints with regards WMDs. It acceded to the Geneva Protocol on April 15, 1960, the Biological Weapons Convention (BWC) in 1974 and the Chemical Weapons Convention (CWC) on October 28, 1997.<sup>18</sup>

The Partial Test Ban Treaty (PTBT) was signed in August 1963 and ratified in 1988.<sup>19</sup> In 1999 Pakistan signed the *Lahore Accords*, with India, agreeing to a bilateral moratorium on nuclear testing.<sup>20</sup>

Pakistan supports the Non-Proliferation Treaty (NPT) and the Comprehensive Test ban Treaty (CTBT), while strongly indicating that its policy is contingent upon Indian position and behaviour. When the CTBT was introduced directly into the UN General Assembly on 9 September 1996, only India, Bhutan and Libya voted against it, while Pakistan abstained. As one of the 44 nations possessing nuclear reactors, the CTBT cannot go into effect without India's and Pakistan's signatures.<sup>21</sup>

**Domestic Non Proliferation Measures.** A number of internal measures have been introduced to prevent proliferation of nuclear technology. These include the formation of bodies like the Pakistan Nuclear Regulatory Authority (PNRA), the Strategic Export Control Division (SECDV) at the Foreign office and an associated Oversight Board.<sup>22</sup>

In September 2004 Pakistan passed a legislation entitled "Export Control on Goods, Technologies, Material and Equipment Related to Nuclear and Biological Weapons and Their Delivery Systems Act, 2004." The regulations, which carry up to 14 years of imprisonment and Rs5 million in fines, apply to Pakistani citizens at

home or abroad, foreign nationals in Pakistan's territory, as well as ground, air, or ship transport registered in Pakistan.<sup>23</sup>

**Bilateral Non-Proliferation Proposals.** At the bilateral level Pakistan has proposed a number of measures to India to stop the inexorable proliferation of WMDs in the region. These have included among others, proposals of a No War Pact, a Nuclear Weapon Free Zone (NWFZ) and Missile Free Zone (MFZ). Unfortunately, there has been an utter lack of reciprocity from the other side. Some of these proposals are listed below:

- **Nuclear Weapon Free Zone (NWFZ).** The idea of a South Asian nuclear free zone was first mooted by Pakistan in 1974.<sup>24</sup> It evoked international interest. The Chinese supported the idea.<sup>25</sup> The Carter administration offered security guarantees along with the USSR, and China.<sup>26</sup> The idea failed to resonate with India, which along with its feudatory Bhutan chose to vote against, it when it was passed with overwhelming majority in the UN General Assembly, in December 1979.<sup>27</sup>
- **Simultaneous Signing of NPT.** During the era of nuclear ambiguity, Pakistan had suggested the simultaneous signing of the NPT, the joint agreement for inspection of all nuclear sites by the IAEA and a pact to allow for mutual inspection of sites.<sup>28</sup>
- **Proposal for Bilateral or Regional Nuclear Test Ban Treaty, Non Proliferation Conference & Missile Free Zone.** Other proposals, which went unheeded, included the 1987 proposal for an agreement on a bilateral or regional nuclear test ban treaty, the 1991 proposal for commencement of a multilateral conference on the nuclear proliferation in South Asia and the 1993 proposal for the creation of a missile-free zone in South Asia.<sup>29</sup>
- **Strategic Restraint Regime Proposal (SRR).** After the May 1998 tests, Pakistan and India announced a moratorium on further nuclear weapons tests. Pakistan also proposed a "strategic restraint regime" or SRR. Principally this meant that the two nuclear armed

neighbours not conduct any further nuclear tests.<sup>30</sup> This proposal has yet to find a matching response from India.

**Nuclear CBMs.** Some nuclear CBMs, which have been agreed upon so far are:

- **Non Attack on Nuclear Facilities Agreement.** The first significant confidence building measure was a non-formalized 1985 agreement not to attack each others nuclear facilities.<sup>31</sup> This agreement entered into force in 1991. As a part of this agreement Pakistan and India agreed to exchange lists of nuclear installations in 1988. The first exchange took place in 1992.<sup>32</sup>
- **Pre Notification of Ballistic Missile Tests.** The February 1999, Lahore Agreements between Prime Ministers Vajpayee and Sharif included confidence building measures (CBMs), such as the pre-notification of ballistic missile testing and a continuation of the unilateral moratoria on nuclear testing.<sup>33</sup>
- **Agreement on Reducing the Risk from Accidents Relating to Nuclear Weapons.** In an expert level meeting held in 2007 it was agreed upon to take all possible measures to reduce the risk of nuclear accidents and to keep each other informed, should such an accident takes place.<sup>34</sup>
- **Hotlines.** A dedicated communication link, or “hotline” was established between the Pakistani and Indian Director Generals of Military Operations (DGMOs) in the aftermath of the 1971 war. In December 1990, India and Pakistan agreed to revive the DGMO hotline and to use it on a weekly basis. At the February 1999 Lahore Summit, it was agreed to review all existing communication links and to upgrade the existing hotlines.<sup>35</sup> In June 2004 the decision was taken to establish dedicated hotlines between the foreign secretaries and to upgrade the existing military hotlines. These improvements were meant to prevent misunderstandings and help avoid an accidental nuclear war.<sup>36</sup>

## **Nuclear Thresholds**

Pakistani nuclear thresholds have been a subject of intense debate. Analysts have drawn their conclusions from the statements of high officials. In 1987, Gen Zia is reported to have told Prime Minister Rajiv Gandhi: 'if your forces cross our borders by an inch, we are going to annihilate your cities.' In the same year Dr AQ Khan stated that Pakistan would retaliate with nuclear weapons 'if our existence is threatened.' Announcing the 1998 tests, Nawaz Sharif stated that 'these weapons are to deter aggression, whether nuclear or conventional.' Government of Pakistan told India in 1998 that an attack against its nuclear installations would elicit 'swift and massive retaliation with unforeseen consequences'. In 1999 Nawaz Sharif promised the use of all kind of weapons to 'defend the territorial integrity' of Pakistan. In 2000 Pervez Musharraf vowed to use nuclear weapons if Pakistan's 'national integrity was threatened.' In 2001 Lieutenant General Khalid Kidwai stated that the nuclear weapons would be used 'only if the very existence of Pakistan as a state is threatened.'<sup>37</sup> The most quoted statement about the so-called nuclear thresholds is also attributed to Gen Kidwai. He reportedly gave four possible scenarios: spatial, military, economic, political, wherein Pakistan might be compelled to use nuclear weapons, to a team of Italian physicists in late 2001.<sup>38</sup> Commenting on these thresholds an IISS report stated:

- **The Spatial Threshold.** The penetration of Indian forces into Pakistani territory on a large scale may elicit a nuclear response. The critical distance would vary according to the location: the threshold could be low in Kashmir because of the symbolic value of the region, and also in the 'core' areas located in Punjab. This would be particularly true if the major city of Lahore, located only 30 km from the border, were threatened. Many analysts, including some Indians, believe that the Indus Valley, the 'lifeline' of Pakistan, is another 'red line' that Indian forces should not cross. The capture of key objectives in this crucial northeast-southwest axis (such as Multan, Rahimyar Khan, Sukkur or Hyderabad) might well provoke nuclear retaliation.

- **The Military Threshold.** The destruction of a large part of Pakistani land or air forces could drastically reduce their combat potential and lead to a nuclear response. Here Pakistani thinking is identical to the guidelines given to the NATO commanders during the Cold War. This criterion is even more important for the Pakistani army because of the critical role it plays in maintaining the country's stability. As noted above, an attack on a nuclear installation has also been posited as a threshold.
- **The Economic Threshold.** Economic strangulation is also a potential nuclear red line. This primarily refers to a possible Indian Navy blockade of the main port of Karachi, or the stopping of the 'lifeline' of Pakistan, the Indus water flow. It could also refer to the capture of vital tributaries of the Indus.
- **The Political Threshold.** Finally, Pakistani planners suggest that a destabilisation of the country by India could also be a nuclear threshold if Islamabad believed that the integrity of the country were at stake. Stated scenarios are political destabilisation or large-scale internal destabilisation. One example would be encouraging the breakaway of one or more Pakistani provinces.<sup>39</sup>

Pakistani planners insist that these thresholds are indicative scenarios and that they should not be viewed in isolation from one another. These also do not cover instances of the pre-emptive use of nuclear weapons including firing of nuclear shots on Pakistani territory or the Arabian Sea.

### **Nuclear Planning and Targeting Policy**

**Massive Retaliation or Flexible Response?.** Some analysts view President Musharraf's 2002 statement that 'any incursion by the Indian forces across the Line of Control will unleash a storm that will sweep the enemy' and that Pakistan has the ability to inflict 'unbearable damage to the enemy,' indicating a nuclear policy of 'massive retaliation.'<sup>40</sup>

Others feel that being in a situation of perceived conventional inferiority *vis-à-vis* a mortal enemy, Pakistan's concept of nuclear planning is close to NATO Cold War thinking and its employment policy may very well look like flexible response.<sup>41</sup>

**Escalation Ladder and Escalation Dominance.** Given the small size of its force, the lack of territorial depth, limited early warning time and short flight times, one suspects that there would be no recourse to the 44 rung escalation ladder proposed by Herman Kahn for a Cold War scenario. Under the circumstances, a more appropriate reference might be the French two-rung escalation ladder of a final warning, followed if needed by unacceptable damage. Peter Lavoy emphasises that escalation dominance will operate at all rungs of the military ladder – from low-intensity conflict through to nuclear war.<sup>42</sup>

**Nuclear Targets.** According to Henry Sokolski, Pakistani nuclear targeting policy may follow the following trajectory: “Its (Pakistan's) doctrine may involve stages of escalation from a purely demonstrative use of nuclear weapons to battlefield use, to counter force use to, as a last resort, counter value target.”<sup>43</sup>

Others are of the opinion that a nuclear war in South Asia may not be so gradual. President Musharraf is reported as saying that Pakistan's aim is to have ‘enough missile capacity to reach anywhere in India and destroy a few cities, if required’. Pakistani analysts regularly mention numbers in the region of a dozen cities. According to an IISS report, Delhi is probably the first and foremost amongst them. The reason given is that since Pakistan has a small number of low-yield warheads, it is likely to have a strategy akin to that of the UK during the Cold War, which primarily targeted Moscow. The same report quotes Brigadier Naeem Salik, formerly of the ACDA Directorate, SPD identifying ‘major population centres, industrial complexes, major military bases, and communication hubs’ as possible targets.<sup>44</sup>

Pakistani counter force targets could include hostile strike formations, reserves and missile sites. There is a possibility that such strikes may be carried out on own territory. Invading forces

might be targeted by low-yield weapons. Technically, a strike on an Indian formation would be feasible without excessive collateral damage, since many areas along the border are sparsely populated, and prevailing winds blow eastward.<sup>45</sup>

### **Safety and Security of Nuclear Weapons**

Western media has from time to time created a scare about the safety and security of the Pakistani nuclear weapons. The current frenzy is about the possibility of Pakistani nuclear weapons falling into the hands of religious extremists. Last year's political instability has added to these concerns. There has been a stream of news coming from official quarters that the US administration had planned contingencies to secure Pakistani nuclear weapons in case of an 'Islamic coup.' During her confirmation hearing in the senate for the post of the Secretary of State, Condoleezza Rice stated that her government had noted the possibility of such an eventuality and was 'prepared to deal with it.'<sup>46</sup> The concept of contingency plans to take over Pakistan's nuclear assets was sensationalised much earlier in 2001 by investigative reporter Seymour Hersh.<sup>47</sup> Such statements had an intense demoralising effect on the common Pakistani citizen, who is at times left to wonder whether to dread the so called Islamists or their very own American allies. Such fears, notwithstanding all possible measures have been taken to ensure that these weapons are secure from both internal and external threats i.e.

**Warheads in Unassembled State .** The danger of accidental firing during peacetime has been removed by neither deploying any nuclear weapons nor placing these on hair trigger alerts. The warheads are reportedly stored in an unassembled condition i.e., the fissile cores are separate from non-nuclear explosives, and these are not mated with the delivery vehicles.<sup>48</sup>

**Dispersed Storage.** Pakistan nuclear weapons are also dispersed for safety and security purpose. A report appearing in the November 11 edition of the Washington Post claimed that after the 9/11 attacks the Pakistani nuclear weapons were moved to at least six different locations.<sup>49</sup>

**The Two Man Rule.** The two-man rule is a control mechanism designed to prevent accidental or malicious launch of nuclear weapons by a single individual.<sup>50</sup> The Pakistani authorities claim that they follow the three man rule for accessing and arming their nuclear weapons.<sup>51</sup>

**Permissive Action Links (PAL's)** <sup>52</sup>. Pakistan nuclear community asserts that they have indigenously developed PAL's for their nuclear warheads.<sup>53</sup> According to an IISS report Pakistan is seeking 'enhanced nuclear detonation safety' by developing indigenous PAL's and environmental sensing devices (ESD's).<sup>54</sup> Pakistan is unlikely to seek assistance from outside in these two technologies. Keeping the weapons in a disassembled form, along with the use of authorisation codes, reduces the risk of capture or unauthorised use. Although Pakistani equivalent may not be as sophisticated as US PALs, it is deemed reliable enough to preclude unauthorised arming or launching of its nuclear weapons.<sup>55</sup>

**Physical Security.** Elaborate physical security is provided to the nuclear assets by a 10, 000 men strong Security Division headed by a two star general.<sup>56</sup> A Personal Reliability Program has also been introduced to forestall any insider threat.<sup>57</sup>

### **Future Doctrine & Policy**

The future nuclear policy and doctrine should be based on five fundamental principles i.e.:

- Reorientation.
- Reorganisation.
- Legitimisation.
- Formalisation.
- Perception making.

### **Reorientation of Defence Policy Planning**

For the past six decades Pakistan's foreign and defence policies have been predominantly influenced by its adversarial relations with India. Three wars and a number of periods of high tension have created a basic threat model, which hypothesises

multiple conventional offensives emanating from across the eastern borders. Ever since, the cataclysmic events of 9/11, the nature and shape of threat has dramatically changed in the global context and Pakistan is no exception. While, the introduction of the nuclear dimension has lent stability to the South Asian relations, terrorism has become the major destabilising factor internally. There is therefore, the need to overhaul the existing security policy and redefine threat with reference to the ground realities and the evolving situation.

**The Eastern Threat.** Truth be told, the eastern threat hasn't vanished. The India – Pakistan bilateral relations are presently in a flux and are still not completely stable. Nonetheless, many things have changed and at the moment, there is more engagement and lesser scepticism. More communication channels are now open to meet, discuss and debate contentious issues than ever before. Since the Low Intensity Conflict in Kargil in 1999 and the military 'stand-off' of 2002, tensions have eased and the nuclear deterrence has introduced a measure of strategic stability in the bilateral relationship of the two countries. There has been no major violation across the LoC since November 2003. Peace talks begun optimistically in 2004, under the rubric of the 'composite dialogue', to address a number of outstanding issues, including the core issue of Kashmir were suspended following the spasmodic instability, which rocked Pakistan last year and the transition to a new civil government. The dialogue resumed in the third week of May in a mood note of cautious optimism.<sup>58</sup> There has been little progress on substantial issues, but these meetings have restored domestic confidence, reduced suspicions and developed comfort levels hitherto unknown. The situation cannot be called ideal but the possibility of another war or period of high tension appears remote at the moment.

**The War on Terror.** On the other hand as a spill over of American war on terror in Afghanistan, a vicious brand of a regenerating hydra-headed threat has emerged. There are two dimensions to it: First is the presence of US, NATO and the multinational forces grouped together as *International Security Assistance Force* or ISAF in Afghanistan.<sup>59</sup> These forces backed by naval

vessels patrolling the Persian Gulf Area are on a long term deployment with no exit strategy.<sup>60</sup> The frequent declarations that the American or NATO troops may be sent into the Pakistani tribal areas to eliminate the so-called 'safe havens' are disquieting.<sup>61</sup> The cross border Predator raids into the border village of Damadola in Bajaur Agency are grim reminders that these are far from idle threats.<sup>62</sup> There are genuine fears, that any foreign incursion into the insurgency affected tribal belt will be part of the bridgehead operations to gain a toehold to seize or neutralise Pakistani nuclear weapons.

Secondly, the war in Afghanistan has manifested itself in form of tribal insurgencies sponsored and supported by hostile agencies in Pakistani tribal areas, Frontier Regions and even settled areas like Swat. This nebulous conflict has transcended administrative boundaries and has spared neither rich nor poor.

Internal stability is the flip side of external stability. If a country is internally in turmoil, its external relations would be far from normal. Those who intend having any sort of dealings would adopt a wait and see posture before making any decision. Therefore it is of utmost importance that an environment is created in which there is peace and harmony and that the common man has freedom from fear and equal opportunities to access sources of human happiness.

**Comprehensive National Security Policy.** This confusing threat spectrum needs to be put into perspective. A comprehensive and imaginative new defence policy has to be prepared to counter all kinds of internal and external threats emerging from all directions. This policy should not be a study in isolation. It should suggest a combined response to all aspects of *National Security* i.e. energy security, food security, water security, education security, economic security, trade security, monetary security, industrial security, agrarian security, external and internal security. A poor, hungry and illiterate nation doesn't need a foreign enemy to attack and sack it. It is more likely to suffer a painful and slow death from internal causes rather than external ones. Nuclear deterrence would fail to prevent an internal collapse.

Nuclear technology is not limited to military applications alone; it forms an important facet of energy security. The civil nuclear technology has the potential to partially address our galloping energy needs. The US has recognised the energy needs of India and is all out to share civil nuclear technology, sell nuclear reactors and use its influence on Nuclear Suppliers Group (NSG) to release nuclear fuel for the Indian reactors.<sup>63</sup> We need to have a well thought out strategy to convince the world at large that we need similar treatment to cover our energy deficit.

### **Reorganisation of Conventional and Nuclear Forces**

**Civil Armed Forces.** While the structures and equipment of our armed forces have been constantly upgraded, to bring them in line with the requirements of modern warfare, our law enforcement agencies remain woefully under equipped, under trained and under staffed. They are in no condition to adequately perform the task of maintaining law and order in the age of terrorism. Poor law and order condition has brought life to a standstill. To restore investor confidence and resume development projects in the tribal areas, the law enforcement agencies should be provided more teeth. Presently, the century old Frontier Corps (FC), a paramilitary force traditionally employed on anti smuggling and border patrolling duties, is embroiled in an open ended counter insurgency battle.<sup>64</sup> The Frontier Constabulary and the local police force is too antiquated, ill equipped and poorly led to handle the challenges thrown up by the scourge of terrorism.

The only solution to this otherwise grim situation is to raise efficient local paramilitary forces. Fortunately, the US is already providing help in this regard.<sup>65</sup> A rejuvenated and motivated civil armed forces, led by well trained regular officers of the Pakistan Army should not only be capable of undertaking internal security duties but should also be adept at performing the tasks of national defence. Pakistan has a large defence budget, in terms of percentage of GDP,<sup>66</sup> therefore instead of raising new forces, intelligent reorganisation and restructuring needs to be done.

**Conventional Forces.** This reorganisation should extend to regular forces. These are presently designed to fight a prolonged battle of manoeuvre in the fashion of the Second World War. With the nuclear weapons in place, there is little likelihood that international players with interests in the region would allow Pakistan or for that matter India to indulge in a full blown conventional war that might lead to exchange of nuclear weapons. If the possibility of a conventional or sub-conventional recedes and a quick end to fighting an asymmetric war in the insurgency riddled areas of North and South Waziristan, Darra Adam Khel, Swat and Balochistan is not in sight, than a new concept of internal and external defence needs to be conceptualised. Instead of maintaining large infantry formations and heavy armoured reserves, these should be transformed into a light, nimble, highly mobile, rapid response, modular forces capable of not only fighting an internal threat but also resilient and robust enough to deter a conventional attack, providing the decision makers sufficient time to mull over strategic decisions.

**Strategic Forces.** There is also a requirement to critically analyse the structure of our existing nuclear forces. The Strategic Forces are organised into Army Strategic Forces Command (ASFC), Air Force Strategic Forces Command (AFSC) and the Naval Forces Strategic Command (NFSC). The ASFC with its missiles forms the main effort of Pakistan's nuclear forces.<sup>67</sup> If the existing structures of small nuclear forces are any guide, it would be worthwhile to note that both the French and British primarily bank on their submarine borne nuclear forces.

The British nuclear stockpile of less than 200 warheads is carried by Vanguard-class nuclear-powered ballistic missile submarines (SSBN). As of 1998, air-delivered weapons have been removed from service. Only one submarine is on patrol at a time, with its missiles de-targeted and with a reduced number of warheads (maximum of 48). Britain is currently in the process of replacing its four nuclear missile submarines with three newer versions and further reducing its nuclear warheads, to less than 160 warheads. The Trident is now Britain's only nuclear weapon system and is expected to remain in service for approximately 30 years.

Additionally there are American nukes on British soil. Additionally 110 tactical US nuclear bombs are stored at a base in the UK. These weapons remain in American custody.<sup>68</sup>

The French have fewer than 300 warheads. More than half of these are believed to be on board submarines, with the rest on warplanes. *Le Terrible* is the fourth vessel in France's new generation of nuclear-powered submarines that carry underwater-launched missiles with multiple atomic warheads.<sup>69</sup>

Submarines are the most dependable strategic platform for small nuclear forces and is the only assured second strike option.

### **Legitimation through the Involvement of the People**

Pakistan has a legitimate nuclear program to deter foreign aggression. Nonetheless, detractors both internal and external often question its credentials. They profess discomfort with the lack of civilian controls and an impenetrable veil of secrecy surrounding the program. Secrecy was an essential part of developing the Bomb. Now that Pakistan is a *de facto* nuclear power and a fledgling democracy, it is time to involve the people, whose safety is the *raison de être* of this program. This could be achieved by creating a feeling of *ownership* through *awareness* and *education*.

**Political Ownership.** Fortunately, there is a clear understanding within the strategic community of Pakistan that the command and control of the nuclear assets rests with the top political leadership of the country. The military as the custodians of nuclear weapons set a good precedence by inviting the Prime Minister of Pakistan Syed Yusuf Raza Gilani to the JS Headquarters and the SPD within the first month of assuming his new office. The PM was given a thorough briefing on the nuclear assets.<sup>70</sup> He later saw the live firing of Shaheen II (Hatf VI) missiles.<sup>71</sup> According to reports the Premier felt reassured that these weapons were in safe hands. He expressed his satisfaction over the effectiveness of command and control structures and reiterated his government's commitment to the strategic program and the need to maintain *minimum credible deterrence*. He also added that as a responsible,

declared and acknowledged nuclear power, Pakistan would continue to play a positive role in international efforts aimed at non-proliferation.<sup>72</sup>

Such comments should be a source of confidence to those who lament the lack of involvement of the political leadership in the nuclear program of the country.

**Awareness.** Not only the topmost leadership needs to draw confidence from the national nuclear program but also those representing the people should understand the place that nuclear deterrence occupies in the defence and foreign policies of Pakistan. The security workshops conducted in the National Defence University (NDU) have played an important role in increasing the awareness about security issues among the elected members of the parliament and officials of the local bodies. The stated aim of these workshops is to enable senior leadership of various segments of the society to understand national security issues and the process of policy formulation.<sup>73</sup> This could also become a forum for awareness about nuclear matters.

Realising the importance of the press in shaping public opinion, DG SPD has on a number of occasions spoken directly to the domestic press corps, as well as members of the international media about Pakistan's nuclear policy and the efforts undertaken to permanently stem any chances of nuclear proliferation. There is a need to have regular press briefings by a designated spokesperson of the SPD.

**Education.** Nuclear policies can be drafted by a well-educated corps of young men and women educated in nuclear matters at the university level. There is a plan to introduce 'nuclear studies' in the syllabus of the Faculty of Contemporary Studies at the NDU. Similar disciplines could also be introduced in other public and private sector universities.

There is also a need to create general awareness among the citizens about their duties and tasks, if comes to a nuclear war. The Civil Defence Department needs to prepare a comprehensive plan to

train the people in cities and villages to protect themselves from nuclear, biological and chemical attacks. These individual and collective safety procedures should be demonstrated and practiced and should also include rescue and decontamination drills.

### **Formalisation of Nuclear Doctrine**

So far Pakistan has avoided releasing a written document outlining its nuclear doctrine and policy. The logic behind this oft stated policy of ambiguity is that it allows Pakistan greater freedom and liberty of action.<sup>74</sup> It is clear, however, that overtime so many statements have been issued on the subject by state functionaries, that an entire corpus can be prepared on Pakistan's strategic thought. It is about time we formalise our nuclear thought and prepare a 'National Nuclear Doctrine.'

**War Gaming.** In the first phase, a nuclear war should be played out and analysed under all possible threat scenarios, including the possibility of internal instability and aggression from across the western borders. This exercise should be carried out at the NDU, under the auspices of the SPD involving all important cabinet level policy makers, the commanders of conventional and strategic forces. In the second phase, the non-classified aspects of the doctrine could then be debated in the Parliament. Finally, a committee comprising people from all walks of life, particularly intellectuals, scientists and military men could finalise the doctrine before it is released for public consumption.

**Institutionalising.** Nuclear debate should be institutionalised at the level of the Cabinet Committee of the Defence. This would end a long game of conjecturing and speculation and would forthrightly inform the world and the citizens of the country, what Pakistan wants to achieve with its nuclear weapons. Necessary corrections could be provided to the official doctrine from time to time and revised editions be published as and when required. During times of war, the doctrine could be suitably amended to suit the obtaining environment.

## Perception-Making

If anything has hurt the Pakistani nuclear program, it is the international perceptions created by a hostile media.<sup>75</sup> In a 2004 paper Maj Gen Mahmud Ali Durrani (retired) spelled out the following western apprehensions regarding Pakistan's nuclear program:

- It's a source of nuclear proliferation.
- It's in the imminent danger of falling into wrong hands.
- It's not under democratic civilian control.
- It can be a cause of war by miscalculation causing immense damage to people and destroying the political and economic infrastructure of South Asia. This can be avoided by
  - Creating greater transparency.
  - Establishing risk reduction centres.
  - Introduce additional CBMS and arms control measures.
- The *Islamic bomb* concept arouses fears. International confidence can be increased if
  - Nuclear weapons are disassembled and not mated.
  - Nuclear weapons are not hair trigger alerts.
  - There are verifiable nuclear risk reduction regimes.
- The associates of AQ Khan are disagreeable to the Americans and they should be removed.<sup>76</sup>

A January 2008 CRS report states that many of these issues have been addressed e.g.

- There is ongoing cooperation by the Pakistani authorities with the US to ensure the security of their nuclear weapons.
- After the nuclear tests in 1998 increased attention has been given to reduce the risk of war in South Asia and a number of risk reduction measures have been introduced.

- Nuclear command and control systems have been developed and the security of the civil and military nuclear facilities has been improved.
- Additional efforts have been made to improve the export controls and monitor nuclear personnel to prevent a repeat of the AQ Khan saga.<sup>77</sup>

As mentioned earlier, a number of practical measures have been undertaken to improve the safety and security of Pakistan's nuclear assets. Presently a National Security Action Plan is being implemented with the assistance of the IAEA. Pakistan is also an active member of the global effort to prevent nuclear terrorism and has joined both the Container Security Initiative<sup>78</sup> and the joint US-Russia led Global Initiative to Combat Nuclear Terrorism.<sup>79</sup>

Despite such concrete steps Pakistan cannot get rid of the stigma of being an irresponsible nuclear state. The negative propaganda about our nuclear program refuses to die down and critics keep belittling Pakistan on account of its non-proliferation track record. There is a dire need to prepare a well thought out plan to counter this rabid and hurtful campaign. This can be done, if all the resources at the disposal of the government are harnessed to give a candid and correct picture of our nuclear program.

It is recommended that as a first step a national policy on the positive projection of our nuclear policies and security and safety of our strategic be prepared at the cabinet level. As a second step, this policy should be executed through a *Perception Building Committee* (PBC) composed of media managers representing the government (Ministry of Information, Spokesperson of the Ministry of Foreign Affairs, ISPR, Press Information Department, APP, PTV, and Radio Pakistan etc) and private sector in consort with the SPD.

The policy should target both the foreign as well as domestic audiences. The policy document should provide our missions abroad with a clear cut guidance of how to articulate the official stance at various forums. The domestic media should be taken on board by providing them regular press briefings about all issues related to our nuclear program. It has often been the case that our national media

has published reports, which have been happily lapped up by the critics e.g. the alleged fallout from nuclear waste in Baghalchur<sup>80</sup> and gas leaks in Chashma have received a lot of adverse comment in the press.<sup>81</sup> The domestic media needs to be taken into confidence on important nuclear developments before they start making their own analyses and publishing their own conclusions. Effective damage control is a part of good media management.

## Conclusion

A detailed analysis of the Cold War – the only available model of nuclear rivalry, shows that the nuclear policies of the superpowers were constantly evolving. To begin with the Americans enjoyed sole propriety rights over nuclear weapons and they adopted the policy of *Massive Retaliation*. Then the Soviets caught up and produced their own weapons. So the operative concept within the framework of nuclear deterrence became the notion of *Mutually Assured Destruction* or MAD. The American policy changed to that of *Flexible Response*. As the nuclear arsenals reached the levels of 60 to 70, 000 warheads, the two superpowers saw the futility of indulging in an arms race and initiated a process of arms control negotiations. When the Soviets invaded Afghanistan, the American started investing in the space borne Strategic Defence Initiative or SDI. Another round of open ended arms race, an imperial overstretch, the escalating costs of war, and alienation of the common man from the communist system led to the demise of the Soviet Union. There was no longer a need to have nuclear weapons in Europe. The Americans changed tack. They still wanted to retain their position of nuclear pre-eminence. To achieve this objective, they have arrogated the right to pre-empt a nuclear war, have reinvigorated their campaign to stop the so-called *rogue states* from becoming nuclear powers and have undertaken to revive the SDI, in form of a global Ballistic Missile Defence Shield (BMDS).

Similarly from time to time, Pakistan has also witnessed changes in its geo-strategic landscape. Its defence policy evolved within the context of its dispute with India over Kashmir. After the disastrous 1971 war, those on the helm of affairs realised, that the only option to stand up to an all powerful India, was by developing

its own nuclear deterrence. The political leadership over the next three decades refused to buckle under international sanctions and isolations and provided all kinds of support to its scientists to develop nuclear weapons and delivery means. Meanwhile, they also developed the fine art of nuclear signalling to prevent the Indians from carrying out any further aggression. After the nuclear tests of 1998, there were two more occasions, when India and Pakistan could have indulged in a no holds barred war. International pressures and the stark realisation of *mutually assured destruction* kept things under control. Both India and Pakistan are currently engaging in peace talks, which continue on a low key but provide people hope that a new war is not imminent in the near future.

So much for the present! What does the future portend for us and what should be our strategic choice in the second decade of twenty first century? This would depend to a large extent on whether these weapons would continue to provide us security and stability in the next ten to twenty years. If we have an answer to this core question, we have the following choices to choose from:

- Keep investing in these weapons for our national survival.
- Seek a balance in nuclear arms and nation building.
- Give them up and divert the monies on developmental projects.

These are stark choices. We have to make the right move to shape are destiny in the best interest of the nation.

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## End Notes

- <sup>1</sup> ZA Bhutto, *If I am Assassinated*, (New Delhi: Vikas, 1979) p 137.
- <sup>2</sup> Shahid ur Rahman, *The Long Road to Chagai* (Islamabad: Print Wise Publication, 1999) p 18.
- <sup>3</sup> Lt Gen Khalid Kidwai, *Pakistan's Evolution as a Nuclear Weapons State*, (Monterey, Ca: Naval Post Graduate School (NPS), November 1, 2006). [www.ccc.nps.navy.mil/news/kidwaiNov06.asp](http://www.ccc.nps.navy.mil/news/kidwaiNov06.asp) (5 April 2008)
- <sup>4</sup> Dr Zafar Iqbal Cheema, "The Role of Nuclear Weapons in Pakistan's Defence Strategy," *IPRI*. Islamabad, 2004. [ipripak.org/journal/summer2004/therole.shtml](http://ipripak.org/journal/summer2004/therole.shtml) (5 April 2008)
- <sup>5</sup> Survey carried out in the PhD class, QAU, November 2007.
- <sup>6</sup> Smruti Patnaik, Pakistan's Nuclear Strategy, *Strategic Analysis*, Vol. 27, No. 1, Jan-Mar 2003, Institute of Defence Studies and Analyses, New Delhi.
- <sup>7</sup> Peter Lavoy, "Pakistan's Strategic Culture: A Theoretical Excursion," *Strategic Insights*, Volume IV, Issue 10 (October 2005), [Center for Contemporary Conflict](http://Center for Contemporary Conflict) (CCC), NPS, Monterey, California.
- <sup>8</sup> Ibid.
- <sup>9</sup> Locations of Indian strike corps and missile groups from *Know your Enemy pamphlet*, MI Directorate, GHQ, Pakistan Army, 2006.
- <sup>10</sup> Pakistan Nuclear Weapons, [www.fas.org/nuke/guide/pakistan/nuke/](http://www.fas.org/nuke/guide/pakistan/nuke/) (5 April 2008).
- <sup>11</sup> Nuclear Black Market Dossier: A Net Assessment, Chapter 1: Pakistan's nuclear programme and imports, *IISS Report*, May 2007. [www.iiss.org/.../nbm/nuclear-black-market-dossier-a-net-assesmen/pakistans-nuclear-programme-and-imports](http://www.iiss.org/.../nbm/nuclear-black-market-dossier-a-net-assesmen/pakistans-nuclear-programme-and-imports) (1 May 2008).
- <sup>12</sup> Farah Zhara, Pakistan's Road to a Minimum Nuclear Deterrent, *Arms Control Today*, July/August 1999. [www.armscontrol.org/act/1999\\_07-08/fzja99.asp](http://www.armscontrol.org/act/1999_07-08/fzja99.asp) (17 April 2008).
- <sup>13</sup> Paul Kerr and Mary Beth Niktin, Pakistan's Nuclear Weapons: Proliferation and Security Issues, *CRS Report*, Order Code RL3248, Updated January 14, 2008. [ftp.fas.org/sgp/crs/nuke/RL34248.pdf](http://ftp.fas.org/sgp/crs/nuke/RL34248.pdf) (25 April 2008).
- <sup>14</sup> Henry D Sokolski (Ed), *Getting Mad: Nuclear Mutual Assured Destruction, Its Origins and Practice*, (Carlisle Barracks, PA: Army War College, Strategic Studies Institute, November 2004) p.11. [www.strategicstudiesinstitute.army.mil/pdf/FILES/PUB585.pdf](http://www.strategicstudiesinstitute.army.mil/pdf/FILES/PUB585.pdf) (23 May 2008).
- <sup>15</sup> Howard French, "Pakistan vows its 'Full Might', if a war comes," *New York Times*, 28 May 2002, [query.nytimes.com/gst/fullpage.html?res=9A07EFD8133BF93BA15756C0A9649C8B63](http://query.nytimes.com/gst/fullpage.html?res=9A07EFD8133BF93BA15756C0A9649C8B63) (5 April 2008)
- <sup>16</sup> Sharon Otterman and Jayshree Bajoria, Controls on Pakistan's Nuclear Technology, *Council for Foreign Relation* (CFR), Updated: February 20, 2008. [www.cfr.org/publication/7742/pakistan.html](http://www.cfr.org/publication/7742/pakistan.html) (23 May 2008).
- <sup>17</sup> National Command Authority of Nuclear Pakistan, [www.apnaavenue.com/2008/national-command-authority-of-nuclear-pakistan/](http://www.apnaavenue.com/2008/national-command-authority-of-nuclear-pakistan/) (5 April 2008)

- 18 NTI: Country Overviews, Pakistan: Introduction,  
[www.nti.org/e\\_research/profiles/Pakistan/index.html](http://www.nti.org/e_research/profiles/Pakistan/index.html) (5 April 2008)
- 19 Partial Test Ban Treaty (Pakistan).  
[disarmament.un.org/.../1a39cb7381fb58ac8525688f006a5c5d/0eefba5ad6916f648525688f006d25e5?OpenDocument](http://disarmament.un.org/.../1a39cb7381fb58ac8525688f006a5c5d/0eefba5ad6916f648525688f006d25e5?OpenDocument) (26 May 2008)
- 20 Andrew N Guthrie, "The Lahore Summit: A Welcome First Step to Peace,"  
February 25, 1999,  
[www.globalsecurity.org/wmd/library/news/india/1999/990225-indopak.htm](http://www.globalsecurity.org/wmd/library/news/india/1999/990225-indopak.htm)  
(5 April 2008)
- 21 Comprehensive Test Ban Treaty: FAS Report,  
[www.fas.org/nuke/control/ctbt/index.html](http://www.fas.org/nuke/control/ctbt/index.html) (21 May 2008). For a Pakistani  
perspective on CTBT, read Ali Ashraf Khan, "CTBT: To Sign or not to  
Sign," *Defence Journal*, [www.defencejournal.com/2000/mar/ctbt-to-sign.htm](http://www.defencejournal.com/2000/mar/ctbt-to-sign.htm)  
(21 May 2008). For an Indian perspective read Gaurav Kampani, "CTBT  
Endgame in South Asia?" CNS Report, January 2000, James Martin Center  
for Non-Proliferation Studies. [cns.miis.edu/research/testban/sasia.htm](http://cns.miis.edu/research/testban/sasia.htm) (21  
May 2008).
- 22 Nazir Hussain, "Pakistan's Export Control Regime: Legislative Framework,"  
Power Point Presentation, Brussels Export Control Conference, November  
2006.  
[www.sassu.org.uk/powerpoints/Pakistan%20Export%20Controls%20Regime-%](http://www.sassu.org.uk/powerpoints/Pakistan%20Export%20Controls%20Regime-%)  
[-](http://www.sassu.org.uk/powerpoints/Pakistan%20Export%20Controls%20Regime-%) (23 May 2008).
- 23 Pakistan National Legislation,  
[www.iaea.org/Publications/Documents/Infcircs/2004/infcirc636.pdf](http://www.iaea.org/Publications/Documents/Infcircs/2004/infcirc636.pdf) (25 April  
2008)
- 24 Savita Pande, Nuclear Weapon-Free Zone in South Asia, *Strategic Analysis*,  
IDSA,  
[Vol. XXII No. 11](http://www.ciaonet.org/olj/sa/sa_99pns01.html), February 1999. [www.ciaonet.org/olj/sa/sa\\_99pns01.html](http://www.ciaonet.org/olj/sa/sa_99pns01.html)  
(23 May 2008).
- 25 "Pakistani Head of Government Describes Friendly Pakistan-China Relations  
as Model for Third World Countries," Xinhua General Overseas News  
Service, 17 June 1978; in Lexis-Nexis Academic Universe, 17 June 1978;  
"China Resolutely Supports Just Struggles of South Asian Countries, Says  
Chinese Vice-Premier Keng Piao," Xinhua General Overseas News Service,  
17 June 1978; in Lexis-Nexis Academic Universe, 17 June 1978,  
<http://web.lexis-nexis.com/>. (22 April 2008).
- 26 Information Bank Abstracts, *New York Times*, 27 May 1979, Pg. 8, Column  
1; in Lexis-Nexis Academic Universe, 27 May 1979, [http://web.lexis-](http://web.lexis-nexis.com/)  
[nexis.com/](http://web.lexis-nexis.com/). (22 April 2008).
- 27 Yearbook of the United Nations - 1991, (New York: Martinus Nijhoff  
Publishers, 1992) p 48.
- 28 Shahid-ur-Rehman Khan, "Pakistan's President General Zia-ul-Haq has  
Reiterated his Offer to India," *Nucleonics Week*, 8 November 1984, Vol. 25,  
No. 45, p. 9.

- <sup>29</sup> Pakistan Nuclear Weapons - A Chronology, [www.globalsecurity.org/wmd/world/pakistan/nuke-chron.htm](http://www.globalsecurity.org/wmd/world/pakistan/nuke-chron.htm), (22 April 2008).
- <sup>30</sup> *Shamshad Ahmad*, *The Nuclear Subcontinent: Bringing Stability to South Asia*, Foreign Affairs, *July/August 1999*, [www.foreignaffairs.org/.../shamshad-ahmad/the-nuclear-subcontinent-bringing-stability-to-south-asia.html](http://www.foreignaffairs.org/.../shamshad-ahmad/the-nuclear-subcontinent-bringing-stability-to-south-asia.html) (24 April 2008).
- <sup>31</sup> Pakistan Nuclear Weapons, [www.globalsecurity.org/wmd/world/pakistan/nuke.htm](http://www.globalsecurity.org/wmd/world/pakistan/nuke.htm) (5 April 2008)
- <sup>32</sup> Stimson: Timeline of South Asia Nuclear CBMs, [www.stimson.org/southasia/?SN=SA20060207948](http://www.stimson.org/southasia/?SN=SA20060207948) ( 22 April 2008).
- <sup>33</sup> Peace Agreements Digital Collection: India-Pakistan, The Lahore Declaration (Joint statement/MoU), [www.usip.org/library/pa/ip/ip\\_lahore19990221.html](http://www.usip.org/library/pa/ip/ip_lahore19990221.html) (25 April 2008).
- <sup>34</sup> The text of the Agreement on Reducing the Risk from Accidents Relating to Nuclear Weapons available at South Asia Confidence Building Measures (CBM) Timeline, The Henry L Stimson Center, South Asia Program, [www.stimson.org/southasia/?SN=SA20060207948](http://www.stimson.org/southasia/?SN=SA20060207948) (23 May 2008).
- <sup>35</sup> Confidence-Building Measures in South Asia, The Henry L Stimson Center, South Asia Program. [www.stimson.org/southasia/?SN=SA2001112047](http://www.stimson.org/southasia/?SN=SA2001112047) (25 April 2008).
- <sup>36</sup> Pakistan Nuclear Milestones: 1955-2005, [www.wisconsinproject.org/countries/pakistan/nuclearmiles2005.htm](http://www.wisconsinproject.org/countries/pakistan/nuclearmiles2005.htm) (25 April 2008)
- <sup>37</sup> Op cit. IISS Report, 2007.
- <sup>38</sup> Paolo Cotta-Ramusino and Maurizio Matellini, Concise Report of a Visit by Landau Network – Centro Volta, January 2002, p 5, <http://lxmi.mi.infn.it/~landnet/Doc/pakistan.pdf>. (19 September 2007)
- <sup>39</sup> Op cit, IISS Report, 2007.
- <sup>40</sup> Op cit, IISS Report, 2007.
- <sup>41</sup> Ibid.
- <sup>42</sup> Ibid.
- <sup>43</sup> Op cit. Sokolski, 2004, p11.
- <sup>44</sup> Op cit. IISS Report, 2007.
- <sup>45</sup> Ibid.
- <sup>46</sup> “The Nomination of Dr Condoleezza Rice to be Secretary of State,” Hearing before the Senate Foreign Relations Committee, January 18 and 19, 2005. [www.senate.gov/~foreign/hearings/2005/hr050118a.html](http://www.senate.gov/~foreign/hearings/2005/hr050118a.html) (5 April 2008).
- <sup>47</sup> Seymour Hersh, “Watching the Warheads,” *The New Yorker*, November 5, 2001.
- <sup>48</sup> Op cit CRS Report, 2008.
- <sup>49</sup> Molly Moore and Kamran Khan, “Pakistan Moves Nuclear Weapons – Musharraf says Arsenal is now Secure.” *Washington Post*, November 11, 2001.

- <sup>50</sup> In the US, the two men rule is based on the following sets of procedures: In case of a missile silo command crew, both operators must agree that the launch order is valid, and must each complete a set of tasks independently and in proper order to launch. On a submarine, both the commanding officer and executive officer must agree that the order to launch is valid, and then mutually authorize the launch with their operations personnel. Higher up, in the NCA, the President and Secretary of Defense must jointly issue the order to use nuclear weapons to the Chairman of the Joint Chiefs of Staff. Usually, the two-man rule is also backed up with hardware and software measures including command code verification and command keys.
- <sup>51</sup> Op cit. IISS Report, 2008, Chapter five: Pakistan's Nuclear Oversight Reforms.
- <sup>52</sup> The DoD defines PAL's as: "A device included in or attached to a nuclear weapon system to preclude arming and/or launching until the insertion of a prescribed discrete code or combination. It may include equipment and cabling external to the weapon or weapon system to activate components within the weapon or weapon system."
- <sup>53</sup> K Alan Kronstadt, Pakistan-US Relations, *CRS Report*, RL33498, Updated April 28, 2008, p 58. <ftp.fas.org/sgp/crs/row/RL33498.pdf> (22 May 2008).
- <sup>54</sup> While PAL's block arming systems unless the proper code is entered, ESD's block arming systems unless a prescribed environmental profile is achieved. For instance, a warhead mounted on a ballistic missile would have to experience the severe acceleration of launch before it could detonate.
- <sup>55</sup> Op cit. IISS Report, 2008, Chapter five: Pakistan's Nuclear Oversight Reforms.
- <sup>56</sup> Kenneth L Luongo and Brigadier General Naeem A Salik (ret'd), Building Confidence in Pakistan's Nuclear Security, December 2007, [www.armscontrol.org/act/2007\\_12/Luongo.asp](http://www.armscontrol.org/act/2007_12/Luongo.asp) (22 May 2008).
- <sup>57</sup> Personnel Reliability Program (PRP) is a US DoD psychological evaluation program, designed to permit only the most trustworthy individuals to have access to nuclear weapons. Details are given in DOD Directive 5210.42.
- <sup>58</sup> "India, Pakistan Foreign Minister hold Composite Talks in Islamabad," May 21, 2008, [www.thaindian.com/.../india-pakistan-foreign-ministers-hold-composite-talks-in-islamabad-2\\_10051200.html](http://www.thaindian.com/.../india-pakistan-foreign-ministers-hold-composite-talks-in-islamabad-2_10051200.html) (22 May 2008).
- <sup>59</sup> Kennedy Hickman, Current Conflicts: International Security Assistance Force, [militaryhistory.about.com/od/afghanistan/p/ISAF.htm](http://militaryhistory.about.com/od/afghanistan/p/ISAF.htm) (21 May 2008).
- <sup>60</sup> Stennis, Nimitz and Bonhomme Richard Enter the Persian Gulf, May 23, 2007, [www.news.navy.mil/search/display.asp?story\\_id=29585](http://www.news.navy.mil/search/display.asp?story_id=29585) (21 May 2008)
- <sup>61</sup> Lisa Curtis, Denying Terrorists Safe Havens in Pakistan, The Heritage Foundation, October 26, 2006, [www.heritage.org/research/AsiaandthePacific/bg1981.cfm](http://www.heritage.org/research/AsiaandthePacific/bg1981.cfm) (21 May 2008)
- <sup>62</sup> There have been at least two UAV borne missile attacks on Damadola, one in January 2006 and the other one in May 2008. For a report on the domestic reaction against the latest attack read Baqir Sajjad Syed, "Protest against

- missile attack on Damadola,” *Dawn*, May 17, 2008. [www.dawn.com/2008/05/17/top1.htm](http://www.dawn.com/2008/05/17/top1.htm) (22 May 2008).
- <sup>63</sup> India-US Nuclear Agreements: The text of statements, articles and editorials, *The Hindu*, [www.hinduonnet.com/thehindu/nic/0049/index.htm](http://www.hinduonnet.com/thehindu/nic/0049/index.htm) (22 May 2008).
- <sup>64</sup> For a brief history of the FC refer to “Khyber Gateway: The Frontier Corps,” [www.khyber.org/pashtohistory/frontiercorps/frontiercorps.shtml](http://www.khyber.org/pashtohistory/frontiercorps/frontiercorps.shtml) (22 May 2008)
- <sup>65</sup> Ron Synovitz and Najib Aamir, “Pentagon Wants More Funding For Pakistan Frontier Corps,” Radio Free Europe, Radio Liberty, November 20, 2007, [www.rferl.org/featuresarticle/2007/11/17ADF4EF-D13A-4991-8FD3-98C6D2DC444C.html](http://www.rferl.org/featuresarticle/2007/11/17ADF4EF-D13A-4991-8FD3-98C6D2DC444C.html) (22 May 2008).
- <sup>66</sup> “Poverty reduction is better than an arms race,” *The Daily Times*, March 02, 2006. [www.dailytimes.com.pk/default.asp?page=2006%5C03%5C02%5Cstory\\_2-3-2006\\_pg3\\_1](http://www.dailytimes.com.pk/default.asp?page=2006%5C03%5C02%5Cstory_2-3-2006_pg3_1), (22 May 2008)
- <sup>67</sup> “Pakistan Sets up Tri-Command Nuclear Force: Officials,” Yahoo News Asia, August 9, 2006, <http://asia.news.yahoo.com/060809/kyodo/d8jcsvcg0.html>.
- <sup>68</sup> UK Nuclear Forces, [www.fas.org/nuke/guide/uk/index.html](http://www.fas.org/nuke/guide/uk/index.html), (25 April 2008).
- <sup>69</sup> “Sarkozy: France to cut Nuclear Arsenal,” AP, 21 March 2008. [www.ihl.com/articles/ap/2008/03/21/europe/EU-GEN-France-Nuclear.php](http://www.ihl.com/articles/ap/2008/03/21/europe/EU-GEN-France-Nuclear.php) (1 April 2008).
- <sup>70</sup> “Will continue nuclear programme: Pakistan PM,” rediff.com, April 17, 2008. [www.rediff.com/news/2008/apr/17pakpoll.htm](http://www.rediff.com/news/2008/apr/17pakpoll.htm) (5 May 2008).
- <sup>71</sup> “Pak Test-Fires N-capable Shaheen-II,” Press Trust of India, April 19, 2008, [www.ndtv.com/convergence/ndtv/story.aspx?id=NEWEN20080047299](http://www.ndtv.com/convergence/ndtv/story.aspx?id=NEWEN20080047299) (5 May 2008).
- <sup>72</sup> Mohit Joshi, “Pak PM Gilani Claims N-assets Placed in Safe Hands,” 18 April 2008, ANI, [www.topnews.in/people/syed-yousuf-raza-gillani](http://www.topnews.in/people/syed-yousuf-raza-gillani) (1 May 2008)
- <sup>73</sup> National Security Workshop, NDU, Islamabad, [www.ndu.edu.pk/courses\\_nsw.htm](http://www.ndu.edu.pk/courses_nsw.htm). (15 May 2008).
- <sup>74</sup> Nuclear Doctrines of India and Pakistan, *WMD 411*, Updated November 2006, [www.nti.org/f\\_WMD411/f2i3.html](http://www.nti.org/f_WMD411/f2i3.html) (22 May 2008)
- <sup>75</sup> Touqir Hussain, “Pakistan’s Image Abroad,” *Dawn*, September 22, 2003. [touqirhussain.com/writings/articles/2003/image\\_abroad.shtml](http://touqirhussain.com/writings/articles/2003/image_abroad.shtml)
- <sup>76</sup> Major General Mahmud Ali Durrani (retired), Pakistan’s Strategic Thinking and Role Nuclear Weapons, Cooperative Monitoring Center Occasional Paper, July 2004. <http://www.cmc.sandia.gov/cmc-papers/sand2004-3375p.pdf> (1 May 2008).
- <sup>77</sup> Op cit. CRS Report, 2008.
- <sup>78</sup> Pakistan to Participate in Container Security Initiative, CBP, March 07, 2006. [www.cbp.gov/xp/cgov/newsroom/news\\_releases/archives/2006\\_news\\_releases/032006/03072006\\_2.xml](http://www.cbp.gov/xp/cgov/newsroom/news_releases/archives/2006_news_releases/032006/03072006_2.xml) (23 May 2008)

- <sup>79</sup> Pakistan Endorses the US-Russia-led Global Initiative to Combat Nuclear Terrorism, June 11, 2007. [www.state.gov/r/pa/prs/ps/2007/may/84503.htm](http://www.state.gov/r/pa/prs/ps/2007/may/84503.htm) (21 May 2008).
- <sup>80</sup> Nadeem Saeed, "Pakistan – Villagers' Fears of Nuclear Waste Baghalchur's Uranium Mines are Now Being Used as a Dump," BBC News, 28 April 2006, [nucnews.net/nucnews/2006nn/0604nn/060428nn.txt](http://nucnews.net/nucnews/2006nn/0604nn/060428nn.txt) (21 May 2008).
- <sup>81</sup> Zeeshan Haider, "Leak at Pakistan's Atomic Energy Site Kills Two," Reuters report, April 8, 2008, [in.reuters.com/article/oilRpt/idINSP32515620080408](http://in.reuters.com/article/oilRpt/idINSP32515620080408) (21 May 2008).