

# The Challenge of Minimal Nuclear Deterrence

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Nuclear weapons are widely viewed within India as “absolute weapons” that would inflict horrendous damage on an antagonist.<sup>2</sup> In view of their mass destruction effects, Indian officials have repeatedly asserted that nuclear weapons are political instruments rather than war-fighting tools. They are, as President K. R. Narayanan has said, useful “only when they are not used.”<sup>3</sup> The essential minimal requirements of Indian nuclear deterrence are, therefore, a functioning command and control system and an ability to survive a first strike and provide for an assured retaliatory strike.

The draft Indian nuclear doctrine emerged from varied pressures, including the insistent US stance calling for India to clarify its nuclear intentions. The text of the doctrine is advisory in nature. It was prepared as a confidential recommendation to the Government of India for further deliberation and evolution. However, Indian national security adviser Brajesh Mishra released the document without delay, thus giving the world the impression of its quasi-official status. Implementation of several of the draft doctrine’s recommendations would be dependent on indigenous technical developments, prioritization of defense objectives, and resource allocations. The pace and scope of implementation could also be affected by changes in global technology control regimes.<sup>4</sup> Thus, even in the most propitious of circumstances, a significant gap would exist between the draft nuclear doctrine and evolving Indian capabilities.

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<sup>2</sup> This term is borrowed from Bernard Brodie, ed., *The Absolute Weapon: Atomic Power and World Order* (New York: Harcourt & Brace, 1946). For an Indian perspective on this subject, see Raja Ramanna, “Security, Deterrence and the Future,” *Journal of the United Services Institution of India* Vol. 122, no. 509 (July–September 1992): 283.

<sup>3</sup> Address to the nation at the closing function of the Golden Jubilee celebrations of India’s independence in New Delhi on 15 August 1998, reprinted in *India News*, 16 July–15 August 1998, 3.

<sup>4</sup> The implications of technological sanctions and the concerns of nuclear proliferation are well detailed in Jeanne J. Grimmer, “Nuclear Sanctions: Sec 102 (b) of the Arms Export Control Act and its Application to India and Pakistan” *CRS Report for the Congress* (Washington D.C.: Library of Congress, updated 30 October 1998). In the post-Pokhran II period, the US stand with regard to India on technology transfers given India’s non-complicity to the NPT has been reinforced. See “U.S. High Tech To Remain ‘Out of Bounds for India,’” *Hindustan Times* (New Delhi), 15 January 1999. However in the post September 11 period, US–Indian defense ties have experienced an upswing making agreements on defense technology transfers in the conventional realm now more feasible. See “India seals major arms deal with U.S.” *The Hindu* (Chennai), 18 April 2002.

While the rhetoric of the nuclear doctrine sounds ambitious, subsequent statements and ground realities demonstrate a “defensive orientation for India’s nuclear forces and a commitment to avoid a nuclear arms race.”<sup>5</sup> The combination of minimum deterrence and a commitment to no-first-use provides a hedge against nuclear adventurism while averting the exorbitant and costly mistakes of a maximalist nuclear posture, which would undercut India’s conventional capabilities and its campaign for nuclear disarmament. Furthermore, the draft nuclear doctrine does not calculate India’s nuclear force posture by mere arithmetic alone, but by the quality and quantum of its forces and the spectrum of threats it must contend with in the present and future.

The draft nuclear doctrine was intended to reinforce the prevalent Indian stand on nuclear disarmament and the avowed goal to eliminate nuclear weapons. India’s strategic approach has always

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been one of defensive-defense and the draft doctrine emphasizes India’s pacific intent.<sup>6</sup> One imperative for the doctrine was to make Indian nuclear motives transparent; another was to initiate an open policy debate. A third consideration was to assert India’s nuclear dominance over Pakistan and highlight India’s need for a limited and graduated deterrent

capability vis-à-vis China. While balancing these imperatives, India seeks a doctrine of nuclear minimalism.

## FOUNDATIONS OF NUCLEAR MINIMALISM

While there are differences of view within India on virtually every issue, there is a working consensus on the need for a minimal nuclear capability to deter adventurism by potential adversaries. India’s most immediate threat comes from Pakistan, a state which sees itself as a competitor, and which engages in daily violence against India in Kashmir. The potential for escalation resides in these violent interactions. Another danger for India is a weak and paranoid Pakistan that might brandish its nuclear weaponry and engage in unanticipated and uncontrolled escalation. Pakistan’s doctrine, which maintains an option of first use of nuclear weapons, adds to these concerns. While these concerns mandate India’s attention, they do not mandate significant nuclear requirements, since it would not require many weapons to destroy Pakistan as a functioning state. Indian officials are convinced that Pakistan, despite making

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<sup>5</sup> Brajesh Mishra quoted in “India Committed to Minimum N-Deterrence,” *The Hindu* (Chennai), 7 December 1998.

<sup>6</sup> Indian National Security Advisory Board, *Draft Report of National Security Advisory Board on Indian Nuclear Doctrine*, 17 August 1999, Internet: [http://www.indianembassy.org/policy/CTBT/nuclear\\_doctrine\\_aug\\_17\\_1999.html](http://www.indianembassy.org/policy/CTBT/nuclear_doctrine_aug_17_1999.html).

nuclear threats in crisis situations, would understand the suicidal consequences of crossing the nuclear threshold.

China presents a different set of challenges. China lays claim to 90,000 square kilometers of Indian territory in Arunachal Pradesh and occupies parts of the old princely state of Jammu and Kashmir. The Sino-Indian boundary issue has yet to be officially settled, but the interim agreements of Zones of Peace and Tranquility along the border have provided for a more-or-less stable bilateral relationship since 1988.<sup>7</sup> China's territorial claims vis-à-vis India are entirely different than its claims on Taiwan, over which Beijing could go to war. Although Beijing refuses to abdicate claims on Indian territory, it does not consider these disputes to be worthy of another war. In addition, India has deployed substantial conventional forces to deter Beijing from incursions into Indian-held territory. Moreover, the prospects of future military confrontations between Beijing and New Delhi are diminished by offsetting nuclear capabilities. Both capitals have other, more important, concerns to pursue. China has adopted a no-first-use nuclear doctrine, and Indian officials are not concerned about a nuclear first strike by China against India. Thus, India can pursue a minimalist nuclear posture vis-à-vis China as well as Pakistan. Substantial improvements in Indian conventional forces would reinforce Indian nuclear minimalism. India, in other words, emphasizes the adjective, "nuclear," over the noun, "weaponry."<sup>8</sup> In governing circles within India, it is widely believed that the existence of India's nuclear capability is the primary deterrent, while issues of size, readiness, and deployment are secondary issues. India's nuclear capability is a national political asset and an insurance policy against nuclear blackmail, coercion, and potential use by an adversary. These national assets are not viewed as war-fighting instruments.

Another contributing factor for India's nuclear minimalism is New Delhi's continued commitment to global nuclear disarmament. The Government of India argued before the International Court of Justice in 1994 that "any use of nuclear weapons to promote national policy objectives would be unlawful."<sup>9</sup> India continues to call for universal and non-discriminatory nuclear disarmament, rejecting the partiality of the Nonproliferation Treaty (NPT) and the Comprehensive Test Ban Treaty (CTBT), which, in New Delhi's view, perpetuate inequality. The weaponization process has, however, created obvious dilemmas for India's nuclear disarmament diplomacy. New Delhi manages these contradictions

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<sup>7</sup> See K. Subrahmanyam, "Nuclear India in Global Politics," *World Affairs* Vol. 2, no. 3 (July-September 1998): 22-23 and Sumit Ganguly, "The Sino-Indian Border Talks 1981-1989: A View from New Delhi" *Asian Survey* Vol. 29, no.12 (December 1989): 1123-1135.

<sup>8</sup> Jasjit Singh, "Why Nuclear Weapons," in Jasjit Singh, ed., *Nuclear India* (New Delhi: Knowledge World, 1998), 9-25.

<sup>9</sup> The Indian position has been stated in "International Court of Justice Annexure II: Status of Nuclear Weapons in International Law: Request for Advisory Opinion of the International Court of Justice," *Indian Journal of International Law* Vol. 37, no. 2 (April-June 1997): 224.

by asserting that the acquisition of nuclear weapons has been a reluctant, but necessary, choice to preserve national security and autonomy of action in an increasingly anarchic world.

At the same time, India's rejection of nuclear war-fighting concepts reflects a continued commitment to minimizing the role of nuclear weapons until nuclear disarmament can be achieved. India's embrace of a no-first-use posture can be viewed in a similar context. This posture affirms India's stance on de-legitimizing nuclear weapons as weapons of war. It helps underscore India's pacific

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intentions toward Pakistan and China, while reinforcing India's preference for a de-alerted and de-mated force posture—a force-in-being rather than a ready arsenal for rapid response.<sup>10</sup> This constitutes a minimum nuclear posture that poses the least incompatibility with New Delhi's declared goal of global, verifiable, nuclear disarmament.

The economics of nuclearization also contribute to minimalism. New Delhi's top defense priority is investment in conventional forces. India must have the capability to defend against Kargil-type contingencies and to incorporate some features of the revolution in military affairs in carrying out future conventional missions.<sup>11</sup> Excessive investment in nuclear weapons would create distortions between conventional and nuclear expenditures. Indian armed forces zealously pursue conventional force modernization programs. They would not be keen to siphon off resources into tri-service nuclear weaponry. The organizational elements of India's nuclear posture, in which civilian control over the Indian military is secure, reinforce nuclear minimalism. India's political leaders are keen to configure nuclear weapons as political instruments of statecraft rather than as war-fighting instruments. A reorientation of India's nuclear capabilities toward war fighting would undermine their political value. Moreover, the integration of nuclear weapons to the Indian armed forces would mean the detailed delegation of command, control, and operations to the armed forces. It could also pave the way for the development of tactical nuclear weapons, the deployment of which would erode civilian control.

India's bureaucratic command and control setup further contributes to nuclear minimalism. The command structure of India's nuclear forces emanates from the President, the Prime Minister, and the Cabinet, with the home, external affairs, defense, and finance ministers in principal positions on the

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<sup>10</sup> Jasjit Singh, "Why Nuclear Weapons."

<sup>11</sup> The impetus for conventional force modernization has increased in recent years. See Thomas Mahnken and Timothy Hoyt, "Indian Views of the Emerging Revolution in Military Affairs," *NSSQ* (Summer 2000), 55–80.

Cabinet Committee on Security.<sup>12</sup> The Cabinet Committee on Security is assisted by the National Security Advisor, the Cabinet Secretary, the Strategic Policy Group, the three chiefs of staff, the heads of Atomic Energy (DAE), the Defense Research Development Organization (DRDO), and the chiefs of the intelligence agencies. The service chiefs, through a Chiefs of Staff Committee, report to the Defense Secretary and Defense Minister and ultimately the Prime Minister and, hence, are removed from the Defense Ministry. The Defense Ministry is primarily run by the Indian Administrative Service, which has responsibility for budgetary, strategic, acquisition, and personnel decisions. All of the recommendations, opinions, and requests of the service chiefs are channeled through the civilian bureaucracy. This structure poses significant operational problems for the military command structure and for military roles in decision-making on strategic matters. India's civilian bureaucracy has maintained a position of dominance rooted in the democratic foundations of the Indian political system.

The position of Chief of Defense Staff (CDS) was created in May 2001 so that nuclear matters would be handled through the single focal point to the government.<sup>13</sup> It is unrealistic to expect, however, that the CDS would acquire significant authority over India's nuclear forces. Instead, the role of the CDS is likely to be confined to the innovation of the tri-service doctrine to conduct operations in the nuclear environment, and to the planning, organization, training, and equipment of the armed forces.<sup>14</sup> The control of the nuclear warheads and their ultimate release would remain with civilian authorities, thus reinforcing political control of India's nuclear weapons.

## MINIMALISM VS. GROUND REALITIES

India's nuclear minimalism and its emphasis on viewing nuclear weapons as political, rather than military, instruments is challenged by ground realities, especially in Pakistan. Pakistan's military leaders regard nuclear weapons as essential to national defense as well as deterrence. In this view, nuclear weapons equalize Pakistan's conventional military disparities with India. Nuclear weapons also provide a backdrop for Pakistan's support for militancy in Kashmir. In effect, Pakistan has pursued a conventionalization of its nuclear strategy, with dangerous portents for regional and strategic stability. The possibility of a breakdown in deterrence cannot be dismissed. Unconventional warfare could escalate

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<sup>12</sup> The Cabinet Committee on Security has emerged as the nodal institution of strategic decision making. See Kotera Bhimaya, "Nuclear Deterrence in South Asia," *Asian Survey* Vol. 34, no. 7 (July 1994).

<sup>13</sup> Government of India, *Group of Ministers Report on Reforming the National Security System* (New Delhi: Press Information Bureau Releases, 23 May 2001); See also Atul Aneja, "Towards a New Security Architecture," *The Hindu* (Chennai), 28 February 2001; and Atul Aneja, "GoM Revamp of Defense Management," *The Hindu* (Chennai), 27 February 2001.

<sup>14</sup> *Ibid.*

to conventional conflict, which in turn, approaches the nuclear threshold. New Delhi's response to the asymmetries in Pakistan's conventional military capability and nuclear posture has been to focus on maintaining survivable delivery systems for the nuclear option, and not to pursue a war-fighting posture.

This response is non-inflammatory, but it leaves many open questions, such as what New Delhi would actually do in the event of a breakdown in nuclear deterrence. Planning is required for optimal responses to a variety of contingencies, including worst-case scenarios. India has been reluctant to address these issues, instead taking comfort in rhetorical statements. Having acquired the nuclear option, the Government of India has to confront the harsh realities of configuring command and control arrangements, rules for the delegation of authority, civil-military coordination, strategies of survivability, and calibrated responses.

India's draft nuclear doctrine sheds little light on these subjects.<sup>15</sup> This document states requirements without a strategy of employment, as if the advent of nuclear weapons makes an employment strategy unnecessary. This is reflective of Indian strategic culture, which ascribes absolute characteristics to nuclear weapons and which affirms existential deterrence. But targeting, escalation control, and other military considerations must accompany the development and acquisition of a nuclear deterrent. These concerns do not disappear by adhering to a no-first-use policy.

Targeting is constrained by the size of India's arsenal, the yield of its weapons, the nature of satellite-based intelligence of targets, and the accuracy of the means of delivery. Counterforce targeting

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(striking nuclear forces, launch control centers, weapon storage sites, field formations, troops concentrations, air and naval bases, logistics, and repair and supply facilities) would require accurate and timely means of delivery. While manned aircraft are likely to provide greater accuracy than missiles, the penetration of air-defenses could be a challenge in some scenarios.

Furthermore, counterforce targeting of Chinese assets would be especially challenging owing to rugged terrain, long distances, and the dispersal of Chinese strategic assets in caves, hardened silos, or in highly mobile configurations. Countervalue targeting of industrial, economic, and population centers requires less accuracy, nuclear weapons, and timeliness. In all probability, India would pursue a countervalue targeting strategy.

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<sup>15</sup> See G. Balachandran, "India's Nuclear Doctrine" (New Delhi: Institute of Peace and Conflict Studies, 27 August 1999), Internet: <http://www.ipcs.org/issues/articles/254-ndi-bala.htm>.

India's no-first-use commitment is central to its concept of nuclear minimalism. The no-first-use pledge was officially proposed for the first time to Pakistan in 1994 as a formal arms control measure and has been reiterated by Indian political leaders many times since. In the aftermath of the May 1998 nuclear tests, a formal no-first-use declaration was included in the "Paper Laid on the Table of the House on Evolution of India's Nuclear Policy" on 27 May 1998.<sup>16</sup> India's no-first-use policy states that India would not resort to the use or threat of use of nuclear weapons against states that do not possess nuclear weapons or are not aligned with nuclear weapon powers. This posture provides diplomatic utility, while raising potential operational dilemmas. Presumably, nuclear weapons states include the five permanent members of the United Nations Security Council, Pakistan, Israel, and perhaps North Korea. By including the allies of nuclear powers, India's draft nuclear doctrine excludes from the no-first-use pledge the non-nuclear NATO allies of the United States; the UK's Five Power Defense Agreement, which includes Malaysia, Singapore, Australia and New Zealand; and the eleven non-nuclear partners of Russia in the Commonwealth of Independent States.<sup>17</sup>

Several operational aspects of the no-first-use pledge are worthy of analysis. First, despite the remoteness of a military confrontation between India and China, it is not possible to completely rule out a future clash. In this unlikely scenario, India would rely on its conventional forces to sustain strong forward defense positions. Second, India's no-first-use pledge does not, by itself, prevent conventional military strikes against nuclear facilities. Pakistan might well not differentiate between the means used to attack its nuclear deterrent, in which case India's no-first-use pledge would lose its meaning. Third, the applicability of India's no-first-use pledge in a scenario involving an attack by chemical or biological weapons is unclear. A narrowly defined no-first-use pledge could leave India open to threats from other weapons of mass destruction (WMD), although deliberate ambiguity on this issue may also serve as a deterrent against such attacks.<sup>18</sup>

The ground realities of command and control present additional difficulties for India's nuclear minimalism. India's deployment of nuclear weapons shall arise in circumstances of nuclear coercion or the use of nuclear weapons by an adversary, or perhaps the use of chemical and biological weapons

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<sup>16</sup> Government of India, "Paper Laid on the Table of the House on Evolution of India's Nuclear Policy" (27 May 1998), 4–5. See also "India Evolves Nuclear Doctrine," *The Times of India* (New Delhi), 5 August 1998 and "PM Declares No-First Strike" *Indian Express* (New Delhi), 5 August 1998.

<sup>17</sup> Ashley Tellis, *India's Emerging Nuclear Posture: Between Recessed Deterrent and Ready Arsenal* (RAND: Santa Monica, 2000), 304.

<sup>18</sup> See P.R. Chari, "India's Nuclear Doctrine: Confused Ambitions," *The Nonproliferation Review*, Vol. 7, no. 3 (Fall–Winter 2000): 134. For more on India's chemical and biological weapons policies, see Anthony H. Cordesman, "Weapons of Mass Destruction in India and Pakistan, Military Balance Updates" (Washington, D.C.: Center for Strategic and International Studies, February 2002), 4–5.

against India. The need to institute a viable command and control structure is essential regardless of the scenario. But scenarios involving Pakistan require considerable prior consideration given Pakistan's strategic and military culture, which places a premium on taking the offensive. If Pakistan is first to cross the nuclear threshold, and does so in such a way as to signal a desire to cease hostilities and control escalation, India might respond in an assured, sufficient, and credible manner. Punishment could be meted out in minimal ways, requiring modest capabilities.<sup>19</sup> A large-scale Pakistani nuclear attack or misperceptions by India concerning Pakistan's intentions might tempt India to respond to any Pakistani first strike with a massive retaliation.

A minimal nuclear exchange and successful escalation control requires that both parties adhere to the same rules. There can be no assurance of these conditions. Consequently, India might have to consider being prepared for a much larger first strike from Pakistan. In this context, India's nuclear

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posture might need to be configured to buttress its conventional superiority and to establish the prospect of escalation dominance so that India could terminate a conflict on its own conditions.<sup>20</sup> These objectives, however, require planning and nuclear capabilities that run counter to India's concept of nuclear minimalism. For example, India could prepare for uncontrolled escalation by seeking the

capability to destroy as much of Pakistan's nuclear deterrent as possible, or to pursue what is known in the West as a "damage limitation" targeting strategy. But by seeking such capabilities, New Delhi might increase the probability that any first strike by Pakistan would be unlimited.

In scenarios of nuclear weapons' use between India and Pakistan, the choice of proportionate and graduated retaliation or massive retaliation is critical. Minimal deterrence suggests retaliation in a similar quantum. To do less, or to succumb to a first strike is unacceptable. A more ambitious nuclear strategy would seek to seize the initiative and to terminate aggression on India's terms. In the latter case, India must possess the nuclear means and the command and control to execute a massive retaliatory strike which, in turn, requires the capacity to transform India's dispersed, de-alerted force into a coherent strike force on short notice.

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<sup>19</sup> See K.Sundarji, "Changing Military Equations in Asia: The Role of Nuclear Weapons," in Francine Frankel, *Bridging the Nonproliferation Divide: The United States and India* (Philadelphia, PA: University of Pennsylvania, 1995), 119–149.

<sup>20</sup> For a brief discussion on India's escalation dominance vis-à-vis Pakistan, see Tellis, *India's Emerging Nuclear Doctrine*, 696–7.

India must also consider the prospect of—and plan to respond to—the possibility of a joint Pakistani and Chinese attack. This worst-case scenario is not considered likely, but nonetheless demands serious review.<sup>21</sup> Another worst-case scenario, involving large-scale nuclear attacks between India and China, also seems remote given the ability of both countries to disperse and hide their strategic assets. If the fateful choice of confronting a Chinese attack emerges, the Indian response is likely to be graduated and proportionate.<sup>22</sup> India's pursuit of a triad of nuclear delivery means is postulated against worst-case scenarios, keeping in mind the need for secure and assured retaliatory forces.<sup>23</sup> This pursuit will be prolonged, due to India's slow progress in developing and deploying sea-based deterrence. As the triad evolves, India will rely upon a dyad of manned aircraft and land-based, mobile missiles.

The credibility of the Indian nuclear deterrent hinges on the certain means of retaliation more than the speed with which retaliation would be made. Certain retaliation is assured by the survivability and dispersal of India's nuclear assets, and by the sureness with which the retaliation is effected. The extent of retaliation would depend upon the damage to India's nuclear assets and infrastructure.<sup>24</sup> India's draft nuclear doctrine emphasizes the importance of prompt retaliation.

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However, assured retaliation is more essential than speed. Delay need not be construed as weakness or indecision, as long as retaliation follows. Matters of timing, and the extent of retaliation would be in the hands of the civilian political leadership. The extent of delay before retaliation would be determined by how India manages its nuclear “day after,” as well as by the time required to plan and organize the riposte. Would the retaliation be symbolic and limited, or a massive response that would destroy the aggressor's society beyond repair? India might well follow the Chinese approach of certitude of retaliation with uncertain timing.

The need for prompt retaliation is part of a maximalist nuclear agenda. If a nuclear strike occurs after a prolonged crisis, then the Indian “force-in-being” would presumably be converted, at least in part, from a de-alerted and de-mated peacetime capability to one that is ready for use. A surprise war scenario, which is not considered likely in the Subcontinent, would require a matter of days or weeks to ready

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<sup>21</sup> See P.R.Chari, “India's Nuclear Doctrine: Confused Ambitions,” *The Nonproliferation Review* Vol. 7, no. 3 (Fall/Winter 2000): 123–135.

<sup>22</sup> See Gregory Jones, “From Testing to Deploying Nuclear Forces: The Hard Choices Facing India and Pakistan,” IP-192 (Santa Monica, CA: RAND, 2000).

<sup>23</sup> Waheguri Pal Singh Sidhu, “India Sees Safety in a Nuclear Triad and Second Strike Potential,” *Jane's Intelligence Review* Vol. 10, no. 7 (July 1998): 25.

<sup>24</sup> See Gurmeet Kanwal: “Nuclear Targeting Philosophy of India,” *Strategic Analyses* Vol. 24, no. 3 (June 2000): 459–473.

India's nuclear arsenal. Attempts by the international community to prevent India from retaliating would surely be ignored by India's leaders.

Whatever nuclear capabilities India pursues, its command and control arrangements need to be reinforced to ensure the credibility of the Indian deterrent. And whatever the scenario, India requires a reliable system for the early warning of nuclear attacks. There must be a high degree of mobility for India's nuclear assets—delivery systems, warheads, dummies, and decoys—and proper linkage to the National Command Authority, the apex command and control structure that would direct retaliatory strike operations. In the light of the perceived vulnerability of the National Command Authority to a decapitating first strike, India must create alternate, survivable national command posts that connect national leaders, civilian members of the atomic establishment, and leaders of the armed forces.

## **THE IMPACT OF MISSILE DEFENSES ON INDIA'S NUCLEAR POSTURE**

Prospective US missile defense deployments and the abrogation of the Anti-Ballistic Missile Treaty could have quite varied impacts on India's nuclear posture. Increased US deployments of theater missile defenses around Taiwan would likely result in increases in China's short- and medium-range ballistic missiles. These missiles are becoming increasingly accurate and are capable of hitting strategic counter-force targets on the island.<sup>25</sup> If the range and deployment areas of these missiles do not suggest a threat to India, they are unlikely to lead to a direct increase in Indian nuclear requirements. However, the proliferation or transfer by China of such missile technology to Pakistan could increase India's requirements.

If the United States deploys combined national and theater missile defenses, China is likely to respond by increasing the number of its intercontinental ballistic missiles, sea-launched missiles, and long-range, land-attack cruise missiles.<sup>26</sup> The United States intelligence community estimates that by 2015, China will be able to quadruple the number of its nuclear-armed ICBMs.<sup>27</sup>

Increases in China's medium-, intermediate-, and intercontinental-range missiles and countermeasures are less technologically challenging and more cost-effective—and therefore more

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<sup>25</sup> See Michael J. Green and Toby F. Dalton, "Asian reactions to US Missile Defense," *NBR Publications: NBR Analysis* Vol. 11, no. 3 (November 2000), Internet: <http://www.nbr.org/publications/analysis/vol11no3/index.html>.

<sup>26</sup> Office of the U.S. Secretary of Defense, *Proliferation: Threat and Response* (Washington, DC: US Department of Defense, January 2000), 14, Internet: <http://www.defenselink.mil/pubs/ptr20010110.pdf>.

<sup>27</sup> U.S. National Intelligence Council, *Foreign Missile Developments and the Ballistic Missile Threat Through 2015* (December 2001), 3, Internet: <http://www.odci.gov/nic/pubs/index.htm>.

likely—than opting for a comprehensive missile defense. Mobile intermediate-range missiles would provide China with the capability for rapid re-deployment of missiles that could target India. Intercontinental-range missiles could also be used against India, as could forward-deployed medium-range missiles. The Indian response to such deployments would be to counter the Chinese missile buildup.

If a Chinese missile buildup were accompanied by continued support for Pakistan's missile and/or nuclear programs, this would heighten India's concerns. Pakistan might even become a beneficiary of China's strategic modernization programs, if Beijing conveys to Islamabad older missile systems that are replaced by newer, solid-fueled types.<sup>28</sup> There is also a possibility that US missile defense plans against the North Korean threat could bolster North Korean–Pakistani missile cooperation.<sup>29</sup> In response to heightened missile and nuclear threat perceptions, India would likely accelerate the testing and deployment of Agni II and II-B intermediate-range missiles that could place targets such as Chengdu and Liupanshui within reach, as well as the Agni III, which could target Beijing and Shanghai.

In other words, there are a number of scenarios associated with missile defense deployments that feature an increased buildup of nuclear weapons and missiles in Pakistan, India, and China. Depending on the extent of China's build up, India could be pressed to resume nuclear testing to perfect new warhead designs

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for missiles with improved range. Increased threat perceptions from China could also encourage India's drive to acquire a sea-based, nuclear deterrent capability in the form of submarine-launched cruise missiles.<sup>30</sup> India might eventually be provoked to move from a recessed deterrent posture to a deployed nuclear posture. India's defense spending in the sectors of nuclear and missile development would steeply rise to maintain superiority over Pakistan and to achieve a robust conventional and limited nuclear

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<sup>28</sup> Bates Gill and James Mulvenon, "The Chinese Strategic Rocket Forces," *Bulletin of Atomic Scientists* (May–June 1999).

<sup>29</sup> "Executive Summary," *Report of the Commission to Assess the Ballistic Missile Threat to the United States* (15 July 1998), Internet: <http://www.fas.org/irp/threat/missile/rumsfeld/index.html>; Pakistan Institute of Air Defence Studies, "Pakistan's Missile System" (1999), Internet: <http://www.piads.com.pk/users/piads/pmsintro.html>; and Brahma Chellaney, "New Delhi's Dilemma," *The Washington Quarterly* (Summer 2000), 149.

<sup>30</sup> See Waheguru Pal Singh Sidhu, "Asian Nuclear Testing: India Sees Safety in Nuclear Triad and Second Strike Potential," *Janes Intelligence Review*, Issue PSA-2135 (1 July 1998), and also Vladimir Radyuhin, "INS Sindhusastra Commissioned," *The Hindu* (Chennai), 20 July 2000.

deterrent capability vis-à-vis China. India would have to be somewhat in step with China with regard to China's new missile buildup, though it would not be wise to match China system for system.

With the deployment of US missile defenses, China would seek to develop effective countermeasures and deploy new variants of missiles with decoys that frustrate any missile defense.<sup>31</sup> If India decides to deploy missile defenses, Pakistan could pursue similar countermeasures, perhaps in collusion with China. The nature and extent of China's countermeasures to US missile defense deployments would certainly have a bearing on India's calculations of the requirements of deterrence vis-à-vis China.<sup>32</sup> Since neither China nor Pakistan is likely to pursue nationwide missile defenses, India would not need to develop decoys or countermeasures. While technological drivers may encourage India to enhance its missile force with MIRVs, matching China's MIRV buildups would be unnecessary, self-defeating, and contrary to India's commitment to nuclear minimalism.

China, India, and Pakistan are unlikely to adopt national missile defenses given their expense and their limited effectiveness in providing national protection. The cost of even regional missile defense

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systems for China or India would be enormous. In India, such expenditures would cut into its nuclear and missile programs and overstretch its defense budget, already burdened by the need to prepare for conventional, Kargil-type activities. In the long run, however, India may eventually opt for a limited missile defense with the Russian SA-300 and a mix of indigenous

systems like the Akash and the Trishul for medium-level interception, and may seek to collaborate with the United States for the transfer of PAC-3 systems or equivalent technology for indigenous production. For now, all three countries are likely to conclude that increasing missile capabilities makes more sense than spending resources to acquire and deploy national missile defenses.

While the prospect of India deploying an extensive, integrated air and missile defense capability would be very remote in view of its vast territory, India might consider deploying combined air and missile defenses for selected areas. Given Pakistan's first-use posture and its philosophy of taking the

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<sup>31</sup> "China To Counter U.S. Missile Defense, But Not With Arms Race," *Agence France Presse*, 13 July 2000. See also Michael J. Green and Toby F. Dalton, "Asian Reactions to US Missile Defense," *NBR Publications: NBR Analysis* Vol. 11, no. 3 (November 2000), and John Pomfret, "China Threatens Arms Control Collapse," *The Washington Post*, 14 July 2000.

<sup>32</sup> China and India are seeking the procurement and eventual transfer of SA-300 anti-missile technology with their adaptations. See "India Ponders New Russian Air Defense System; Plan May Rile Beijing," *Stratfor.com* (21 June 2001) and "Moscow abandons China for India," *Stratfor.com* (30 June 2000).

military offensive, India could opt for an integrated air and missile defense for New Delhi, which hosts the National Command Authority. Perhaps such defenses could also be employed over other areas of strategic and industrial importance, such as nuclear facilities.

India is likely to encounter problems with the indigenous development of ballistic missile defense systems and would have to rely either on Russian systems or possibly limited technology transfers from the United States. The Akash and Trishul missiles have capabilities against supersonic, manned, fighter aircraft, but the extent of their intercept capabilities against ballistic missiles is likely to be very limited.<sup>33</sup> Another option for India would be to opt for technological collaboration and indigenous co-production agreements for a combined air and missile defense system with Russia. Russia could offer limited missile defenses against short- to medium-range ballistic missiles in the form of the SA-300 system. Russia appears willing to sell the SA-300 to both China as well as India.<sup>34</sup> If purchasing the SA-300 becomes a priority, Beijing and New Delhi would likely prefer initially to import the integrated air defense network and then have Russian specialists help with indigenous programs for further development. Alternatively, India might seek US missile defense technology, which could open new avenues for bilateral cooperation and technology transfers with Washington.

India could argue that an effective, omni-directional air and missile defense capability is consistent with its non-provocative nuclear posture. However, such defenses would be extremely expensive as well as unlikely to negate China's strategic modernization programs. India would prefer at least a limited missile defense for New Delhi and Bombay to protect against a surprise attack from Pakistan. However, limited defenses vis-à-vis Pakistan might also be overwhelmed by missile barrages or countermeasures, particularly if China-Pakistan missile proliferation and technology transfers continue unabated.<sup>35</sup> India might overcome these technical problems with the assistance of the United States if India attaches a high priority to this task and if countering Chinese hegemony in the region becomes a US priority.

On balance, the deployment of combined air and missile defenses by India would be an expensive and difficult decision for New Delhi. India has many urgent conventional military needs. In addition, India must maintain and adapt its strategic force-in-being. Given its limited resources, India is not likely to fund missile defenses at the expense of its missile programs such as the Prithvi, Agni I, Agni II, and

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<sup>33</sup> Group Captain R.G. Burli, "India's Option for Space-based BMD," *Indian Air Force 2000* (New Delhi: Indian Air Force, 2000), 40-42.

<sup>34</sup> See Waheguru Pal Singh Sidhu, "The Implications for Postures and Capabilities in South Asia," *Missile Proliferation and Defences: Problems and Prospects* Occasional Paper no. 7 (Monterey, CA: Center for Nonproliferation Studies, Monterey Institute of International Studies, 2001).

<sup>35</sup> Brahma Chellaney, "New Delhi's Dilemma," *The Washington Quarterly* Vol. 23, no.3 (Summer 2000): 151.

Agni III, which constitute the cornerstone of its deterrence posture. It would be very difficult to justify and sustain expenditures on missile defense research, development, and deployment while simultaneously sustaining expenditures for ongoing missile modernization programs. The consideration of a national missile defense umbrella for India is premature in terms of technology development and exorbitant in terms of resource outlays. Even the consideration of limited missile defense deployments would be difficult. Nonetheless, India will be impelled to consider an integrated air-missile defense capability in the event of quantum increases in the threat from China and Pakistan.

The luxury of avoiding the choice between nuclear and missile programs on the one hand, and missile defenses on the other, depends on the pace of India's economic growth and its defense expenditures. Continued difficulties arising from Pakistan's support for militancy in Kashmir, the priority given to increased outlays for conventional forces, and the maintenance of India's missile programs leave few resources for missile defenses.

## **CONCLUSION**

India's nuclear posture will reflect many factors: self reliance and indigenous technological developments; nuclear and missile developments in China and Pakistan; the state of bilateral relations with both countries, as well as ties with the United States and Russia; domestic economic factors; technology denial efforts by industrialized states; US missile defense plans; and India's strategic culture, which favors nuclear restraint, a minimal definition of the requirements of nuclear deterrence, and a force-in-being alongside continued support for global nuclear disarmament.

India relies on a robust conventional military posture and reserves nuclear weapons for retaliation and as a last resort. New Delhi takes comfort in a declaratory posture that emphasizes a pledge of no-first-use. This posture, however, raises but does not answer a number of difficult operational questions. Moreover, India's commitment to nuclear minimalism could be challenged by developments in China and Pakistan, as well as by prospective US missile defense deployments. If China responds vigorously to missile defenses, India would have to rethink its force-in-being nuclear posture.

While India has embraced the concept of minimal, credible nuclear deterrence, the size and scope of the Indian nuclear deterrent are not limited by any quantitative matrix. Given the asymmetric situation vis-à-vis Pakistan and China, India's targeting requirements cannot be completely divorced from developments elsewhere in the region. This issue is also linked to fissile material stocks in India. The scope of India's minimum deterrent is therefore subject to debate and change. India would find it very difficult to accept limits imposed by other nuclear powers. Pressures to test and deploy new nuclear weapons with better yields, and the deployment of improved delivery vehicles would certainly arise.

Thus, it would be difficult to prescribe a definition for the term “minimum,” as it would vary according to the asymmetric nuclear situations India contends with in its fluid geo-strategic environment. The issuance of a draft nuclear doctrine is an important first step in India’s evolving nuclear posture and operational planning.