

Managing Escalation

Upgrading CBMs



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Introduction

Recent shifts in international geopolitics—marked by South Asia's rising strategic importance to both China and the United States, the integration of emerging military technologies, and the enduring rivalry between India and Pakistan—have accelerated missile advancements and reshaped the nuclear postures of Islamabad and New Delhi. These developments have further diminished the prospects of Pakistan's long-standing (over two and a half decades) Strategic Restraint Regime proposal and exposed the limitations of current Nuclear Confidence Building Measures (CBMs) between the two countries.¹ Meanwhile, Indian strategic analysts remain overly focused on the challenges of a two-front war, the military stalemate with China along the Line of Actual Control (LAC), and the imperative to strengthen the India-United States threshold alliance.² At the same time, the ruling elite in India, with its rejectionist stance toward resuming dialogue with Pakistan, has fostered a climate of mutual indifference between the two states.³

A critical review of India—Pakistan relations suggests that the ruling elites of both states have in the past implicitly recognized the vital role of nuclear CBMs in addressing the risks associated with nuclear weapons. In February 1999, they endorsed the Lahore Memorandum of Understanding (MoU) to further emphasize the importance of CBMs and arms control agreements.⁴ The MoU supplemented existing measures and created a conducive environment for negotiating new nuclear CBMs. However, the 1999 Kargil conflict derailed trust and halted the process until the composite dialogue process commenced in 2004, leading to the negotiation of two nuclear CBMs. This dialogue process was, however, shelved after the Mumbai attacks in November 2008. Since then, there have been no serious initiatives to negotiate new nuclear CBMs or to update the existing ones which have historically served as a vital mechanism for strategic communication and crisis de-escalation.⁵

Today, India and Pakistan appear reluctant to jointly address the mounting shifts in their nuclear postures. This is cause for strategic alarm. Despite the growing risk of technical errors, human mistakes, and procedural lapses amid the rapid modernization of their military hardware and the growing role of nuclear energy in their energy mix policies, there is a worrying freeze in any such initiatives. The examples of incidents are legion. On March 9, 2022, the firing and subsequent crash of an Indian supersonic missile in Pakistani territory sent shockwaves throughout South Asia.⁶ New Delhi's delay in announcing the cause of the missile misfire (attributed to a technical

¹ Nuclear CBMs refer to actions and policies promoting trust, transparency, and stability among states that possess nuclear weapons.

² The Indo-US strategic partnership has evolved from episodic cooperation to a 'threshold alliance,' inching towards a formal mutual defense alliance. The India-United States threshold alliance involves developing military technical interoperability. The interoperability of Indian and United States militaries' equipment, organizations, and geographic access is a precursor to joint war plans on the modern battlefield.

³ "Era of uninterrupted dialogue' with Pakistan is over: India's Jaishankar, "Dawn, August 31, 2024.

⁴ Haleema Saadia, "Nuclear Risk Reduction Between India and Pakistan: Improving the Implementation of Nuclear Confidence-Building Measures," Policy Memo Stimson, May 22, 2024, <https://www.stimson.org/2024/nuclear-risk-reduction-between-india-and-pakistan/>, accessed, October 15, 2024.

⁵ Dr Chiara Cervasio, Dr Nicholas J. Wheeler, and Mhairi McClafferty, *Crisis Prevention and Management in South Asia: Mutual Confidence, Risk, and Responsibility*- Report (London, The British American Security Information Council (BASIS), April 2024), p. 17.

⁶ "India accidentally fires missile into Pakistan," *BBC*, March 11, 2022, <https://www.bbc.com/news/world-asia-india-60711653>, accessed on October 17, 2024.

malfunction during routine maintenance), the suspension of the mutual communication channel, the lack of prearranged diplomatic protocols to handle such grave situations, and the deadlock in relations since the 2019 post-Pulwama military standoff collectively led Pakistan to interpret the incident as not a technological error, but a deliberate act with ulterior strategic objectives. Islamabad warned Delhi to "be mindful of the unpleasant consequences of such negligence" and to avoid a repeat incident.⁷

The problem is that even theoretically, missile misfires inherently contain elements that can escalate conflicts during deadlock between adversaries. The conflicting perspectives of New Delhi and Islamabad about this episode underscore the high level of mistrust that has set in between the two. The obvious dangers inherent in this situation necessitate an objective revisit of existing nuclear CBMs. Given new developments that put the entire region in peril, it is also clear that a set of new CBMs to promote trust, transparency, and stability between India and Pakistan are essential. This paper therefore looks at the possibilities of streamlining existing nuclear CBMs, while also proposing new measures. The discussion is divided into three sections. The first section outlines four determinants that necessitate a revisiting of nuclear CBMs between India and Pakistan. The second section discusses streamlining the four existing nuclear CBMs. The third section presents proposals for new nuclear CBMs designed to prevent nuclear material smuggling as well as the prevention of nuclear and radiological terrorism.

Determinants for Streamlining Nuclear CBMs

Missile Inventories Modernization

Technological innovations, such as the advent of new types of cruise and ballistic missile technologies, pose additional challenges for policymakers seeking to manage nuclear CBMs between India and Pakistan. Currently, both sides are investing in the proliferation of nuclear and missile technologies to empower their militaries, under the assumption that advanced weaponry serves as a powerful tool for deterrence and defense. However, advancing military capabilities may prove counterproductive, as it increases security dilemmas and fuels an arms race between these strategic competitors. In the South Asian strategic environment, China's growing nuclear arsenal and its hypersonic nuclear-weapons delivery system capability have spurred India to accelerate the development of its Ballistic Missile Defense (BMD) shield, hypersonic cruise missiles, and hypervelocity-gliding projectile systems.

India's pursuit of these technologies indicates that New Delhi is increasingly willing to invest in quality, supplementing its traditional focus on quantity. As India sharpens its missile arsenal, Pakistan is compelled to take similar measures on upgrading its ballistic and cruise missile inventories. In addition to cruise and ballistic missiles, both states are striving to develop and integrate emerging technologies, such as artificial intelligence, big data analytics, quantum computing, and quantum sensing, to advance their military potential. Both have conducted flight tests of their indigenously developed long-range ballistic missiles equipped with Multiple Independently Targetable Reentry Vehicle (MIRV) technology.⁸ For instance, India successfully

⁷ Pakistan's air force said the missile traveled at Mach 3 - three times the speed of sound - at an altitude of 12,000m (40,000ft) and flew 124km (77 miles) in Pakistani airspace before crashing. Ibid.

⁸ Zafar Nawaz Jaspal, "Missile Systems Modernization Drivers and Strategic Stability Riddles in South Asia," *Strategic Thought*, December 2023.

tested an Agni-V missile with a 5,000-kilometer range and MIRV capability on March 11, 2024. India can also deploy MIRV technology in its medium and intermediate-range ballistic missiles. Previously, the Defense Research and Development Organization (DRDO) had claimed that MIRV capability existed for the Agni-III intermediate-range missile (3,200+ km), which is currently being fielded with the Indian army. It was also reported that the Agni-Prime medium-range missile (1,000-2,000 km) tested in June 2021 carried two reentry vehicles to simulate MIRV capability. In contrast, Pakistan test-launched an Ababeel medium-range (2,200 km) ballistic missile with MIRVs in January 2017, capable of carrying between three and eight nuclear warheads of various payloads that could strike multiple targets.

The introduction of MIRV technology by both countries is intended to reinforce their strike capabilities while simultaneously enhancing the vulnerabilities of their adversary. Integrating MIRV technology into a ballistic missile multiplies the number of nuclear warheads deployed—a dangerous development in the nuclear era. If a single-warhead missile is targeted against one location, for instance, an MIRVed missile can hit multiple targets simultaneously. Consequently, both India and Pakistan now have the potential to load hundreds of additional warheads onto their existing ballistic missile systems. The use of MIRVs is a strategy that aims to deliver strikes to multiple targets quickly, but it also carries the risk of triggering a warhead race between the two countries.

Nuclear Postures Transformation

India and Pakistan appear to be increasing the size of their nuclear arsenals. During the post-Pulwama military standoff, India deployed its nuclear assets at sea.⁹ On March 18, 2019, Captain DK Sharma of the Indian Navy announced, "The major combat units of the Indian Navy, including the Carrier Battle Group with INS Vikramaditya, nuclear submarines and scores of other ships, submarines, and aircraft swiftly transited from exercise to operational deployment mode as tensions between India and Pakistan escalated."¹⁰ However, the issue of nuclear weapons deployment remains contentious. According to a SIPRI report, New Delhi may have already mated some warheads with launchers in peacetime, although there is no real clarity on India's deployment strategy.¹¹ India's practice of placing missiles in canisters and mating warheads with launchers suggests that New Delhi has shifted toward a counterforce nuclear posture aimed at targeting an adversary's nuclear weapons early in a crisis—potentially even before they (e.g., China and Pakistan) can be deployed.

Another significant development is that Indian military planners are restructuring their armed forces to enhance cohesion among the Army, Airforce, and Navy. They are pursuing an integrated (or "unified") theater command (ITC) model instead of maintaining separate command structures and procedures for each service branch. The enactment of the 2023 Inter-Services Organization

⁹ Vishnu Som, "India Deployed Nuclear Missile-Armed Submarine During Standoff with Pak" *NDTV*, March 18, 2019, <https://www.ndtv.com/india-news/india-deployed-nuclear-missile-armed-submarine-during-standoff-withpakistan-2009178>, accessed on October 29, 2019. See also Kamran Yousaf, "India planning another military attack against Pakistan, says FM Qureshi," *The Express Tribune*, April 7, 2019.

¹⁰ Manu Pubby, "Aircraft carrier & nuclear submarines deployed post-Pulwama," *Economic Times*, March 18, 2019, <https://m.economictimes.com/news/defence/navy-deployed-strategic-assets-on-operational-deployment-afterpulwama-attack/articleshow/68452772.cms>, accessed on October 29, 2019.

¹¹ Hans M. Kristensen and Matt Korda, "World nuclear forces," *SIPRI Yearbook 2024: Armaments, Disarmament, and International Security*, www.sipriyearbook.org

Bill reveals India's plan to establish three ITCs by 2025. The first ITC will be headquartered in Jaipur, Rajasthan, along the Pakistan frontier; the second in Lucknow, Uttar Pradesh; and the third—a maritime ITC—in Thiruvananthapuram. On August 16, 2019, India's Defense Minister Rajnath Singh confirmed the replacement of India's no-first-use (NFU) nuclear policy with the first use (FU) policy. The timing and location of the announcement, at Pokhran, the nuclear weapon testing site of India, were significant. "Till today, our nuclear policy has been 'No First Use.... what happens in the future depends on the circumstances,'" the Minister stated¹². India's cold start doctrine, its proactive military operation strategy, and its surgical strike approach, as outlined in the 2017 Joint Armed Forces Doctrine, leave no doubt about its willingness to adopt a first-use posture. The alarming factor is that India has been preparing preemptive counterforce options.

Pakistan, too, has advanced its nuclear capability and transformed its nuclear posture, striving to develop a triad of nuclear forces. Its National Command Authority (NCA) has declared that Pakistan will adhere to a "Full Spectrum Deterrence" posture without entering an arms race with any other country.¹³ Pakistan's full spectrum deterrence posture denotes the possession of strategic, operational, and tactical nuclear weapons with a wide range of yields that can be employed against an array of targets in India, including countervalue, counterforce, and battlefield targets. Pakistan has developed both air- and land-based nuclear delivery systems and completed the final component of its nuclear triad by testing a submarine-launched cruise missile (SLCM)—the Babur-III cruise missile—which has a range of 450 kilometers and can deliver various payloads, including nuclear warheads. Although the Pakistan Navy does not currently operate a nuclear-powered submarine, it does have French-built Agosta 90B-class submarines powered by diesel-electric engines.¹⁴ The Pakistan Navy may also at some stage install nuclear-tipped cruise missiles on either its Agosta 90B-class submarines or on new Chinese-built submarines. The development of the Babur-III SLCM thus provides the Pakistan Navy with capabilities comparable to a nuclear-armed submarine.

The transformation of nuclear postures in India and Pakistan raises more than one set of concerns about an escalating nuclear arms race between the two neighbors.¹⁵ In many debates,

¹² Indian Express. (2019, August 16). *Future of nuclear policy depends on circumstances: Rajnath Singh in Pokhran*. The Indian Express. <https://indianexpress.com/article/india/future-of-nuclear-policy-depends-on-circumstances-rajnath-singh-in-pokhran-5910105/>

¹³ Pakistan's National Command Authority announced that the country acquired 'Credible Minimum Full Spectrum Nuclear Deterrence' ability and capability in September 2015. "Press Release," *Inter-Services Public Relations (ISPR)*, No. PR133/2013-ISPR, Rawalpindi, September 5, 2013. http://www.ispr.gov.pk/front/main.asp?o=tpress_release&id=2361 accessed on October 13, 2013.

¹⁴ "Pakistani submarine fleet consists of three Agosta-90B diesel-electric vessels purchased in 1994, one made in France, the second assembled in Pakistan, and the third made entirely in Pakistan. The third of these Agosta 90B submarines was fitted with the French MESMA air-independent propulsion system. In 2016, Pakistan signed a deal with China to buy eight Yuan class diesel-electric attack submarines. It is reported that China will build four of the submarines at Karachi Shipyard and that it will also transfer submarine construction technology to Pakistan. These submarines will include the air-independent propulsion system. The submarines are expected to be completed between 2023 and 2028 at an estimated cost of up to \$5 billion." Zia Mian, M.V. Ramana & A.H. Nayyar, "Nuclear Submarines in South Asia: New Risks and Dangers," *Journal for Peace and Nuclear Disarmament*, 2019, <https://www.tandfonline.com/doi/full/10.1080/25751654.2019.1621425>, accessed on October 27, 2019.

¹⁵ For a detailed discussion on India and Pakistan's nuclear postures, see Zafar Nawaz Jaspal, *Nuclear Arms Control in South Asia: Politics, Postures, and Practices* (Karachi: Paramount Books, 2024), Chapters 5 and 6.

the focus has shifted away from the modernization of nuclear arsenals and associated risks to issues of deterrence stability and instability

Nuclear Industry Expansion

The United Nations Climate Summit, COP28 in 2023 saw the global nuclear industry's pledge to triple nuclear energy capacity by 2050.¹⁶ On March 21, 2024, the IAEA and Belgium organized the first-ever Nuclear Energy Summit in Brussels, which included 32 countries and several nuclear organizations. This summit was a significant initiative for engaging world leaders in exploring cooperation on nuclear energy, reducing reliance on fossil fuels, and promoting economic development.

Both India and Pakistan have developed significant expertise in managing their nuclear fuel cycles and are determined to increase the share of nuclear power in their energy-mix policies. Accordingly, each country has constructed new nuclear power plants. For instance, Pakistan's energy mix policy reveals an intention to maximize civilian use of nuclear energy, targeting the generation of up to 40,000 megawatts by 2050. Recently, Pakistan began operating two nuclear power plants—Karachi Nuclear Plant-I and II—with a combined capacity of 2,200 megawatts. Additionally, Pakistan is exploring options of small modular reactors, which enable it to produce nuclear energy in remote or hard-to-reach areas. In both countries, the probability of an accident at the nuclear power plant and the vulnerability of such facilities to sabotage are routinely cited concerns.¹⁷

Strategic Riddle: Worst-Case Scenarios

The action-reaction cycle introduces an additional element to the competitive strategic dyad between India and Pakistan. This cycle possesses an inherent potential to destabilize strategic stability, primarily because of the absence of appropriate nuclear CBMs between the two countries. Hypothetically, India's deployment of MIRVed ballistic missiles alongside its BMD systems and expertise in hypersonic cruise missile and hypervelocity-girding projectile technologies could fuel a worst-case scenario in Islamabad—in which India might, in a state of heightened readiness, launch a decapitating first strike against Pakistan. Conversely, Indian strategic analysts argue that Pakistan, caught in a 'use it or lose it' dilemma, might preemptively launch a nuclear strike. Such worst-case scenarios can arise spontaneously in the absence of robust arms control measures and evolving nuclear postures.

The debate surrounding India's missile incident on March 9, 2022, raised alarm bells about the possibility of an inadvertent missile launch. On March 15, 2022, India's Defense Minister Rajnath Singh admitted in Parliament that there had been an “inadvertent release of a missile... during

¹⁶ Dr. Zafar Nawaz Jaspal, “Pakistan needs to reap the dividends of nuclear energy,” *Arab News*, December 13, 2023, <https://arab.news/ghqgd>.

¹⁷ Fukushima is the latest and oft-quoted example of radioactive leakage. However, there was not a single radiation-related causality as a result of a radioactive disaster.

routine maintenance and inspection.”¹⁸ He noted that India had “later learned that the missile had landed inside the territory of Pakistan.”¹⁹ Despite this, India refrained from using the DGMO or Foreign Secretary hotlines to share information about the incident. Fortunately, the so-called inadvertent missile release did not escalate tensions between the nuclear-armed rivals, as Pakistan acted with measure amid uncertainty. Historically, there is no precedent for one nuclear-armed country accidentally firing a missile into another’s territory—a development that represents a new and alarming variant in an increasingly nuclearized strategic environment. This incident underscores the urgent need for both nations to engage in serious dialogue to formulate and implement procedures designed to prevent knee-jerk retaliatory responses to accidental or inadvertent missile launches.

The accidental elimination of a high-profile leader or official could escalate tensions into a nuclear crisis. On December 8, 2021, India’s first Chief of Defense Staff, General Bipin Rawat, along with his wife and 11 others, died in a helicopter accident in Tamil Nadu.²⁰ Supposedly, it was concluded that the helicopter crash was due to the nemesis proxy. The situation unfolded dangerously, as it happened after the terrorist attack on the Indian parliament on December 13, 2001. The mistrust caused a dangerous eyeball-to-eyeball military standoff for ten months between nuclear-armed India and Pakistan.²¹

Streamlining Nuclear CBMs

India-Pakistan Non-attack Agreement (1991)

One of the most effective nuclear CBMs between India and Pakistan is the Agreement on the Prohibition of Attack Against Nuclear Installations and Facilities (commonly referred to as the India-Pakistan Non-Attack Agreement). Under this agreement, both sides agreed, on December 31, 1988, not to attack each other’s nuclear facilities. The Agreement is based on the first and second protocols to the Geneva Convention’s Articles 56 and 15, which state: “*Works or installations containing dangerous forces, namely dams, dykes and nuclear electrical generating stations, shall not be made the object of attack, even where these objects are military objectives, if such attack may cause the release of dangerous forces and consequent severe losses among the civilian population.*”²² The Agreement was ratified and entered into force on January 1, 1991, with the condition that both sides exchange updated lists of their nuclear sites annually on January 1. For the past 33 years, India and Pakistan have diligently

¹⁸ Rajeswari Pillai Rajagopalan, “The Many Unanswered Questions About India’s Missile Accident,” *The Diplomat*, March 18, 2022, <https://thediplomat.com/2022/03/the-many-unanswered-questions-about-indiasmissile-accident/>, accessed on October 17, 2024.

¹⁹ *Ibid.*

²⁰ “Chief of Defense Staff General Bipin Rawat, wife among 13 killed in chopper crash,” *The Economic Times*, December 9, 2021, <https://economictimes.indiatimes.com/news/defence/army-chopper-crashes-in-tamil-nadubipin-rawat-was-reportedly-on-board/articleshow/88161974.cms?from=mdr>, accessed on October 18, 2024.

²¹ Zafar Nawaz Jaspal, “The Political-Military Background of the 2001-2002 Military Standoff: A Pakistani Perspective,” in Zachary S. Davis, ed. *The India-Pakistan Military Standoff: Crisis and Escalation in South Asia* (United States: Palgrave Macmillan, March 2011), pp. 53-66.

²² “India-Pakistan Non-Attack Agreement,” *NTI-CNS*, June 11, 2024, <https://www.nti.org/educationcenter/treaties-and-regimes/india-pakistan-non-attack-agreement/>, accessed on October 24, 2024.

maintained the integrity of this CBM, even during crises or when official communication channels have been absent.

While the India-Pakistan Non-Attack Agreement currently applies only to nuclear installations and facilities—covering, “nuclear power and research reactors, fuel fabrication, uranium enrichment, isotopes separation, and reprocessing facilities and any other installations with fresh or irradiated nuclear fuel and materials in any form and establishments storing significant quantities of radioactive materials” in both countries—²³ the lists exchanged under the agreement need to be updated to incorporate newly established facilities. In addition, the scope of the agreement could be widened to include other critical infrastructure, such as certain sensitive civilian and economic facilities—including National Command and Control headquarters—to minimize the fear of losing leadership. Expanding the scope in this manner would also establish procedures for sharing information regarding terrorist threats to critical infrastructure. However, any efforts to extend or alter the Agreement must be made with prudence to avoid inadvertently undermining its core foundation.²⁴

Upgrade Hotlines

India and Pakistan have established hotlines, such as the 1971 Directors General of Military Operations (DGMOs) and the 2004 foreign ministry hotlines at the civilian level, to prevent misunderstandings that could lead to nuclear escalation. Despite this, both New Delhi and Islamabad need to upgrade these communication channels, as historical evidence shows that both hotlines were ineffective during crises. During the post-Pulwama military standoff, Pakistan’s National Security Advisor Moeed Yusuf claimed that India did not use the hotline.²⁵ India’s reluctance to fully engage these hotlines undermines the effectiveness of existing military and civilian communications channels. This situation underscores that the current DGMO hotline (the highest level of military contact) and foreign ministries hotline (the highest level of civilian contact) play a limited role in crisis management because of deep-seated distrust and a lack of transparency.²⁶ For example, on the evening of February 27, 2019, the Pakistani High Commissioner in Delhi contacted his Indian counterpart to inform him that Prime Minister Imran Khan wished to speak to Prime Minister Narendra Modi. The Indian Prime Minister’s office replied that Modi “was not available at this hour” but advised that if Khan had “any urgent message

²³ *Agreement between India and Pakistan on the Prohibition of Attack Against Nuclear Installations and Facilities (India-Pakistan Non-Attack Agreement)*, December 31, 1998, Inventory of International Nonproliferation Organizations and Regimes © Center for Nonproliferation Studies, https://www.nti.org/wp-content/uploads/2021/09/india_pakistan_non_attack_agreement.pdf, accessed on October 24, 2024.

²⁴ Rabia Akhtar and Ruhee Neog, “Through the Sands of Time: The Enduring Legacy of the India-Pakistan Non-Attack Agreement,” Stanley Center for Peace and Security, July 2024, <https://stanleycenter.org/wpcontent/uploads/2024/07/Through-the-Sands-of-Time-Non-Attack-Agreement.pdf>, accessed on October 24, 2024.

²⁵ Rajeswari Pillai Rajagopalan, “The Many Unanswered Questions About India’s Missile Accident,” *The Diplomat*, March 18, 2022, <https://thediplomat.com/2022/03/the-many-unanswered-questions-about-indiasmissile-accident/>, accessed on October 17, 2024.

²⁶ Following the 1971 War, the Directors General of Military Operations (DGMOs) of India and Pakistan established a dedicated military communication link, which has become known as the 'DGMO hotline.' ²⁵ Dr

to convey,” he should do so through the Indian High Commissioner.²⁷ On March 9, 2022, the Indian Foreign Secretary did not call his Pakistani counterpart to inform him of the missile misfire. The absence of a direct channel between the top leaders complicates the process of distinguishing important signals from noise, especially amid escalating media rhetoric.²⁸

To address these challenges, both sides must establish a continuously operative Track-1 communication channel, a formal leader-to-leader hotline between Prime Ministers of India and Pakistan. This channel would serve as an urgent, trusted means of communication at the highest level to reduce anxiety, foster confidence in each other’s restraint, and effectively manage crises. Additionally, both countries should encourage their DGMO and foreign secretaries to use existing hotlines more consistently to prevent misperceptions and restore trust during crises.

Advance Notification of Ballistic Missile Tests—2005

The composite dialogue process led both India and Pakistan to converge on views regarding the risks associated with ballistic missile tests and the potential for nuclear accidents. Under this CBM, both sides agreed to notify the other in advance of any planned flight tests of land- or sea-launched surface-to-surface ballistic missiles. Under this protocol the notification must be given at least three days before the commencement of a five-day launch window. The CBM also stipulates that test launch sites should not be within 40 km of the border, and the planned impact area should not fall within 70 km of the International Boundary or the Line of Control on the side conducting the test. In addition, the missile’s trajectory during the test must not cross the International Boundary or the Line of Control, and a minimum horizontal distance must be maintained from these boundaries. Notably, this CBM applies exclusively to ballistic missile tests. However, as both India and Pakistan are introducing advanced cruise missiles and hypersonic kill vehicles—and are integrating new technologies into their weaponry—the scope of this CBM needs to be revised to include battlefield (tactical) missiles, cruise missiles, and hypersonic kill vehicles.

Reducing the Risk from Nuclear Weapons Accidents—2007

As India and Pakistan expand their nuclear industries, the probability of accidents increases due to the growing number of facilities. An accident on either side could result in a transboundary release of radiation, affecting the other side because of their close geographical proximity. Although both states have adopted procedures to prevent accidents, the possibility of a nuclear accident cannot be entirely ruled out. Furthermore, a misinterpretation of a nuclear accident could potentially trigger a war between India and Pakistan. To avoid such a catastrophic scenario, Islamabad and New Delhi agreed in 2007 to “immediately notify the other state in the event of any nuclear weapons accident within their jurisdiction or control that could result in radioactive fallout or the risk of a nuclear war between the two countries”. This CBM was designed to prevent misinterpretations, by ensuring that if an accident is likely to affect the other state, the affected state promptly shares all relevant information. In February 2012, India and Pakistan extended the

²⁷ Chiara Cervasio, Dr Nicholas J. Wheeler, and Mhairi McClafferty, *Crisis Prevention and Management in South Asia: Mutual Confidence, Risk, and Responsibility*- Report (London, The British American Security Information Council (BASIC), April 2024), p. 25.

²⁸ Dr Chiara Cervasio, Dr Nicholas J. Wheeler, and Mhairi McClafferty, *Crisis Prevention and Management in South Asia: Mutual Confidence, Risk, and Responsibility*- Report (London, The British American Security Information Council (BASIC), April 2024), p.7.

2007 Agreement for an additional five years and reportedly “discussed proposals for additional measures in areas where two countries could make forward movement.”²⁹ It was extended again for a further period of five years in February 2017.³⁰ Although no nuclear weapons accidents have occurred in either country—rendering the Agreement untested—both states have continued to develop national institutions to manage nuclear risks. The initial extension of the Agreement, along with subsequent measures, has been seen as a step toward making the system more robust.

Proposed Nuclear CBMS

CBM on Nuclear and Radiological Terrorism and Cyber Attacks

The longstanding nuclear taboo—a normative inhibition against the first use of nuclear weapons—has deterred nuclear-armed states from using such weapons in war. However, there is growing concern that this taboo will not impede terrorist groups from using nuclear radiological material in their attacks. The probability of nuclear and radiological terrorism has increased in India and Pakistan due to the systematic growth of their nuclear industries. Furthermore, since the United States-led NATO force withdrew from Afghanistan, al-Qaeda has been regaining strength in the region.³¹ In addition, the group has been reported to be seeking nuclear or radiological material. On December 12, 2022, it was reported that the group behind the 9/11 attacks had acquired materials to potentially construct a nuclear bomb.³² Moreover, both India and Pakistan are vulnerable to the increasing integration of new technologies into their military doctrines. Their investments in cyber offensive capabilities further raise the risk of cyberattacks, which could undermine the safety and security of nuclear systems. For instance, in September 2019, India's Kudankulam Nuclear Power Plant in Tamil Nadu experienced a cyberattack.³³

Both countries participated in the Nuclear Security Summits convened by the Obama administration, and in the aftermath, each established institutions to enhance their nuclear security infrastructure. Pakistan established the Centre of Excellence for Nuclear Security, which offers advanced education and training in nuclear security, while India's founded the School of Nuclear Security Studies (SNSS) to provide similar training. A bilateral nuclear CBM should be negotiated to facilitate cooperation between these centers, allowing for the sharing and discussion of best

²⁹ Sitakanta Mishra and Mansoor Ahmed, “Cooperative Measures to Support the Indo-Pak Agreement on Reducing Risk from Accidents Relating to Nuclear Weapons” (Albuquerque: Sandia National Laboratories, April 2014), <https://www.sandia.gov/app/uploads/sites/148/2021/07/sand2014-2607-2.pdf>, accessed on October 29, 2024

³⁰ “India, Pakistan extend pact on reducing risk of nuclear weapon-related mishaps,” *Hindustan Times*, February 20, 2017, <https://www.hindustantimes.com/india-news/india-pakistan-extend-pact-on-reducing-risk-of-nuclearweapon-related-mishaps/story-wDPadxZwnKzCXnKoMbiG5N.html>, accessed on October 29, 2024.

³¹ The United Nations Security Council report published on January 29, 2024 (S/2024/92), states, “Al-Qaeda was reported to have established up to eight new training camps in Afghanistan, including four in Ghazni, Laghman, Parwan, and Uruzgan Provinces, with a new base to stockpile weaponry in the Panjshir Valley.”

³² “Group Behind 9/11 Gets Hands-on Material to Make Nuclear Bomb—Report,” *Newsweek*, December 12, 2022, <https://www.newsweek.com/al-qaeda-911-terror-uranium-nuclear-weapon-1766405>, accessed on October 30, 2024.

³³ Melissa Robbins, “Cyberattack Hits Indian Nuclear Plant,” *Arms Control Association*, December 2019, <https://www.armscontrol.org/act/2019-12/news/cyberattack-hits-indian-nuclear-plant>, accessed on October 30, 2024.

practices to improve security culture and mitigate the risks of nuclear and radiological terrorism and cyberattacks.

CBM on countering nuclear smuggling

The South Asian region is vulnerable to an illicit nuclear bazaar. Since the passage of the United Nations Security Council Resolution 1540 in May 2004, the international community has called on states to refrain from supporting non-state actors in their pursuit of radioactive material and to adopt domestic laws and controls.³⁴ India and Pakistan supported UNSC Resolution 1540 (2004) and subsequently enacted legislation consistent with its provisions.³⁵ However, despite these institutional and statutory arrangements, there have been reports of theft and illicit sales of nuclear and radioactive materials in India. For instance, on August 8, 2024, local police at the Balthari check post in Kuchaikote, Gopalganj, Patna arrested three smugglers and recovered 50 grams of radioactive californium estimated to be worth 850 crore Indian rupees (over \$100 million). Gopalganj S.P. Swarn Prabhat stated, “The smugglers had been trying to sell this material for several months.”³⁶ In February 2022, eight people, including two Indian nationals, were arrested in Nepal for illegally possessing and attempting to sell a “uranium-like substance.”³⁷ The illicit trade and smuggling of nuclear and radioactive material anywhere in the world undermines both regional and international security. Consequently, the theft, cross-border smuggling, and illicit sale of such materials pose a serious threat to the national security of both India and Pakistan. A bilateral nuclear CBM should be negotiated to prevent nuclear and radiological smuggling.

CBM for responsible media reporting

Both India and Pakistan are vulnerable to incendiary language and nuclear jingoism in the media. A nuclear CBM should aim to foster a culture of nuclear responsibility among opinion-makers and journalists in both countries. Such a measure would discourage sensationalism and narratives that exacerbate tensions. Reinstating a framework similar to the 1950 Joint Press Code could serve as a foundational step in preventing the dissemination of misinformation—especially during times of crisis. Article 8 of the Nehru-Liaquat Agreement, signed in 1950, states that (it will): “Not permit propaganda in either country directed against the territorial integrity of the other or purporting to incite war between them and shall take prompt and effective action against any individual or

³⁴ On April 28, 2004, in its 4956th meeting, the United Nations Security Council (UNSC) adopted a nonproliferation resolution by which it decided that all states should refrain from supporting by any means nonstate actors that attempt to require, use, or transfer nuclear, chemical or biological weapons and their delivery systems. The UNSC unanimously adopted Resolution 1540 (2004) under Chapter VII of the UN Charter. The Council also decided that all states would establish domestic controls to prevent the proliferation of such weapons and means of delivery, particularly for terrorists, by establishing appropriate rules over the related material and adopting legislative measures.

³⁵ Indian Parliament enacted the Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Act in June 2005.

³⁶ *The Times of India*, August 10, 2024.

³⁷ Dr Zenobia Homan and Amelie Stoetzel, ed. *Exploring nuclear and radiological security in South Asia: A case study handbook*, Center for Science and Security Studies, Kings College London, p. 41. <https://www.kcl.ac.uk/csss/assets/exploring-nuclear-radiological-security-south-asia.pdf>, accessed on October 30, 2024.

organization guilty of such propaganda.”³⁸ Thus, a nuclear CBM that includes media guidelines would encourage outlets in both India and Pakistan to avoid sensationalism and inflammatory language on nuclear issues, particularly during times of crisis.

Conclusion

The contemporary destabilizing strategic challenges in the South Asian environment necessitate the streamlining of the existing four nuclear CBMs between India and Pakistan, as well as the introduction of new measures to minimize the emerging risks associated with inadvertent missile launches or accidents that could lead to the loss of high-profile leadership. Furthermore, new developments require additional nuclear CBMs to address emerging cyber threats and to enhance media guidelines aimed at countering disinformation and inflammatory hyper-nationalist reporting on nuclear issues. Expanding the scope of existing nuclear CBMs and introducing new bilateral measures will promote transparency, build trust, prevent misunderstandings, avoid misinterpretations, and mitigate nuclear risks between India and Pakistan.

To conclude, streamlining nuclear CBMs between India and Pakistan is imperative to prevent the escalation of tensions stemming from accidental or inadvertent missile fire. Revamping the existing CBMs and introducing new bilateral measures that do not compromise either party’s defensive arrangements will be advantageous for countries. These initiatives are inherently non-confrontational and are designed to bolster confidence in their military modernization and defensive arrangements.

³⁸ Agreement between the Governments of India and Pakistan Regarding Security and Rights of Minorities (Nehru—Liaquat Agreement), New Delhi, April 8, 1950, <http://www.commonlii.org/in/other/treaties/INTSer/1950/9.html>, accessed on October 18, 2024.



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