

# Assessing the Efficacy of the India-Pakistan Agreement on Prohibition of Attack against Nuclear Installations/Facilities

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## Introduction

Fighting around nuclear power plants during the ongoing Russia-Ukraine war and debates about military strikes on Iran's controversial nuclear program have highlighted resurging temptations to treat nuclear facilities as regular military targets. Attacks on nuclear sites would pose strategic risks as well as grave humanitarian and environmental consequences. These threats also highlight the limitations of relying on International Humanitarian Law (IHL), norms, and opponents' self-restraint to spare nuclear facilities during international conflicts.

India and Pakistan, known for their enduring rivalry, signed an innovative 1988 agreement prohibiting attacks against each other's nuclear installations and facilities.<sup>1</sup> For the last three and a half decades on the 1<sup>st</sup> of January each year, the two rivals have exchanged the coordinates of sites covered by the Non-Attack Agreement without discriminating between those used for peaceful and military purposes.<sup>2</sup> The Non-Attack Agreement is the oldest and longest-surviving nuclear arms control agreement in India and Pakistan's diplomatic history. Some commentators have cited the Indo-Pakistan agreement as a model for putting nuclear energy facilities and other nuclear sites off-limits for attacks during peacetime and war.

Critics have questioned the Non-Attack Agreement's efficacy along four lines.<sup>3</sup> The first asserts that the arms control instrument has mere symbolic/performative value and does not yield genuine security and stability benefits.<sup>4</sup> The second, which is relatively less hostile than the first, holds that the Non-Attack Agreement has some value but requires substantial upgrading, particularly expanding its coverage to urban centres and economic complexes.<sup>5</sup> The third critique maintains that uneven compliance has diluted the Agreement's contribution to regional peace and security, based on reports that India and Pakistan have occasionally doubted each other's commitment to the instrument.<sup>6</sup> The fourth denounces the Non-Attack Agreement as detrimental to mutual deterrence stability on the grounds that the information it provides could enable an aggressor to exploit mutual vulnerability and conduct a surprise attack during a fast-closing window of opportunity.<sup>7</sup>

Neither those who propose the Non-Attack Agreement as a role model nor those who doubt its efficacy have published an in-depth assessment of the origins, content, design, functions, and implications of the accord. A more nuanced picture emerges from deep digging based on declassified documents and other primary sources, contemporary news reports, interviews, and

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<sup>1</sup> The official title is the Agreement on the Prohibition of Attack against Nuclear Installations and Facilities between the Republic of India and the Islamic Republic of Pakistan. See Associated Press (AP), "Pakistan, India Agree Not to Attack Nuclear Plants," December 31, 1988.

<sup>2</sup> Ministry of External Affairs, India, "India and Pakistan Exchanged List of Nuclear Installations," January 01, 2024.

<sup>3</sup> Bennett Ramberg, "The Danger of Nuclear Reactors in War," *Project Syndicate*, August 05, 2022.

<sup>4</sup> Toby Dalton, "Modernize the South Asia Nuclear Facility 'Non-Attack' Agreement," *South Asian Voices*, Stimson Center, August 12, 2019.

<sup>5</sup> J. N. Dixit, *India-Pakistan in War & Peace* (London: Routledge, 2002), 290, 334.

<sup>6</sup> "Indo-Pak Relations: Foreign Ministers Yakub Khan and I.K. Gujral Talk Tough," *India Today*, February 15, 1990; United Nations, "Pakistan Warns in Disarmament Conference of Massive Retaliation if Nuclear Installations Attacked," *Press Release DCF/335*, May 29, 1998.

<sup>7</sup> Julian Spencer-Churchill (associate professor, Concordia University) in discussion with the author, June 06, 2024.

the few available secondary analyses. This research shows that the Non-Attack Agreement preserves a delicate balance between reassurance and deterrent threat, which makes it attractive to both parties. Therefore, enlarging the scope of the Agreement at the expense of the deterrent sensitivities would be impractical and risky, which might potentially jeopardize the Agreement altogether. The analysis also demonstrates that the participants have regularly complied with the Agreement during peaceful times and conflicts, as it continues to align with their self-interests. Furthermore, a thorough examination of the Non-Attack Agreement's design and function shows that it does not create a dangerous level of mutual vulnerability that could compromise the stability of mutual deterrence.

While modest, the Non-Attack Agreement has yielded numerous political and military benefits for India and Pakistan. It has laid to rest fears of attacks against nuclear installations and thus relaxed the political and military environment. It has provided an impetus for the two rivals to improve bilateral relations and facilitated further arms control agreements. It let India and Pakistan claim diplomatic rewards from the international community. It has enhanced regional security by institutionalizing mechanisms and procedures to prevent accidental, inadvertent, and deliberate attacks against nuclear sites. Importantly, it assisted the two rival military organizations secure their nuclear installations and facilities with minimum defences and expenditures.

This paper proposes two supplementary measures to augment the Agreement's efficacy without disrupting the balance between reassurance and deterrence. First, establishing a Bilateral Consultative Commission could allow the parties to address the issues of the Agreement's interpretation, implementation, and application. Second, a bilateral instrument banning cyber-attacks on nuclear installations and facilities could explicitly expand the application to encompass non-kinetic attacks in the fast-emerging cyber domain.

The analysis is organized into six main sections. The first explores what motivated India and Pakistan to negotiate the nuclear accord, and how they achieved it. The second assesses whether and how the Non-Attack Agreement has contributed to mutual security and stability. The third asks whether it would be feasible to substantially enlarge its scope. The fourth examines allegations of non-compliance. The fifth considers whether the arms control measure undermines mutual deterrence in South Asia. The sixth suggests ways the Non-Attack Agreement could be augmented without renegotiating it.

The research advances the cumulative understanding of the efficacy of the India-Pakistan prohibition on attacking nuclear installations and facilities. It provides fresh insights and perspectives on the Non-Attack Agreement's design, functions, and implications, which informs India and Pakistan's future arms control endeavours amidst the modernization and expansion of their nuclear technology programs. It offers lessons for the international community on how to effectively secure other nuclear sites from military attacks. The research validates a core tenant of arms control theory -- the existence of complementary and opposing relationships between arms control arrangements and nuclear deterrence operations. Overall, the study contributes to the extant literature on the effects of past arms control agreements.

## The False Allure of Attacking Nuclear Sites

Strategists have contemplated potential counterproliferation, coercive diplomacy, or military benefits of attacking nuclear facilities since the 1940s, and militaries have sometimes conducted strikes. During the World War-II, the Allies bombed Norwegian heavy water facilities to slow down the German nuclear program. Americans debated the merits of preventive strikes against the evolving nuclear weapon programs of the Soviet Union, China, and North Korea in the late 1940s, mid-1960s, and mid-1990s, respectively.<sup>8</sup> The Soviets also contemplated a preventive strike against Chinese nuclear installations in the late 1960s.<sup>9</sup> In these cases, though, US and Soviet leaders did not approve preventive attack plans because they reckoned the limited counter-proliferation effects of military strikes and the greater risks of a wider conflict with the targeted country.

The Middle East is the only region where military strikes on nuclear facilities have been conducted repeatedly. In 1980, Iran attacked a research reactor under construction in Iraq, and those two adversaries attacked each other's nascent nuclear facilities during their prolonged war in the mid-1980s. During the first Gulf War in the early 1990s, the US intermittently targeted Iraqi nuclear facilities as part of its strategy of destroying critical infrastructure. Israel carried out surprise military strikes against non-operational nuclear sites in Iraq (1981) and Syria (2007). In addition to kinetic military attacks, Israel and United States reportedly carried out shadow cyber/sabotage attacks to damage or hinder Iran's nuclear program. In 2010, Iran's main nuclear facilities at Natanz were attacked with an innovative virus, Stuxnet.<sup>10</sup> In 2021, the Natanz nuclear facility was hit with an explosion followed by a suspected cyber-attack that damaged the building and caused a power blackout at the facility.<sup>11</sup> Iran has also blamed Israel for assassinating five nuclear scientists between 2010 and 2020. More recently, Iran's acceleration and intensification of uranium enrichment following U.S. withdrawal from the 2015 agreement to provide sanctions relief in return for stricter limits and oversight of its nuclear program has provoked ominous threats of military action from Israeli and American leaders.

These attacks on nuclear facilities and scientists in the Middle East may have had some temporary non-proliferation benefits, but they have also had military and diplomatic costs. For example, the net effect of Israel's strike on the Osirak reactor may have been to accelerate Iraq's efforts to acquire nuclear weapons.<sup>12</sup> It also heightened security tensions in the region and strained Israel's relations with the Arab countries, who felt more vulnerable and insecure from Tel Aviv's power and aggressive action. It provided a fresh context for anti-Israel sentiments and

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<sup>8</sup> Russell Buhite and WM Christopher Hamel, "War for Peace: The Question of an American Preventive War against the Soviet Union, 1945-1955," *Diplomatic History*, 14, no. 3 (1990): 367-84; "Examining the Lessons of the 1994 U.S.-North Korea Deal," *Frontline (PBS)*, <https://www.pbs.org/wgbh/pages/frontline/shows/kim/themes/lessons.html>.

<sup>9</sup> Office of the Historian, Memorandum from the President's Assistant for National Security Affairs (Kissinger) to President Nixon, September 29, 1969, secret, declassified, <https://history.state.gov/historicaldocuments/frus1969-76v12/d88>.

<sup>10</sup> "Stuxnet was Work of US and Israeli Experts, Officials Says," *The Washington Post*, June 02, 2012.

<sup>11</sup> "Blackout Hits Iran Nuclear Sites in What Appears to be Israeli Sabotage," *The New York Times*, April 13, 2021.

<sup>12</sup> Målfrid Braut-Hegghammer, "Revisiting Osirak: Preventive Attacks and Nonproliferation," *International Security* 36:1 (summer 2011): 101-132.

stimulus for arms buildup across the Arab countries.<sup>13</sup> Israel's strike on the Iraqi nuclear facility also undermined the United States' efforts as a neutral arbiter to build confidence and trust between Arabs and Israelis and to promote regional cooperation against Soviet influence.

More broadly, using military force to constrain proliferation activities has historically limited success and has often proved counterproductive.<sup>14</sup> Attacking states face the challenge of getting complete, valid intelligence about the proliferator's secretive nuclear infrastructures. Despite technological advancements, air power has limitations in neutralizing air defences and hardened sites. It is important to underline that bombing sites does not stop the proliferator from re-committing human, technological, and economic resources to resume nuclear activities. Equally important, military attacks have harmful repercussions for peace and stability. These have the potential to invite retaliatory strikes, wider diplomatic and military tensions, and rapid escalations.

Aside from the allure of targeting nuclear facilities for counterproliferation purposes, the ongoing Russia-Ukraine conflict has brought to the fore a new trend - the targeting of larger nuclear power plants as part of regular military operational and tactical strategy.<sup>15</sup> The Russian military's attacks and occupation of these plants were not merely to disrupt power supply, but also to escalate the risk of radiological release. This was a calculated move to gain coercive bargaining leverage, compelling Ukraine's neighbouring countries to consider ending the war before a potentially large area gets contaminated by an accidental nuclear incident.

Some analysts have pushed back against developments in the Middle East and Eastern Europe that seem to normalize the use of force against nuclear sites by noting that such attacks could violate numerous international laws.<sup>16</sup> Regrettably, International Humanitarian Law (IHL) does not offer comprehensive coverage and a mechanism against military attacks on nuclear sites. It only protects nuclear power reactors that have little or no military value. In a war situation, belligerents can feel tempted to misuse IHL by exaggerating the military value of nuclear power plants to make them their legitimate military targets. Additionally, the IHL does not institute any practical mechanism against accidental/inadvertent attacks on nuclear facilities. In the absence of a robust international legal framework, deteriorating norms, and unreliable self-restraints, the nuclear sites are increasingly becoming vulnerable to kinetic and non-kinetic military operations, inviting wider political conflicts and humanitarian and environmental disasters.

## **Context, Negotiations, and Provisions of the India-Pakistan Agreement**

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<sup>13</sup> The White House, Memorandum for the National Security Advisor Richard V Allen from the Situation Room, June 8, 1981, secret, declassified.

<sup>14</sup> Martin B. Malin, "The Effectiveness and Legitimacy of the Use of Force to Prevent Nuclear Proliferation," in Oliver Meier and Christian Daase, eds., *Arms Control in the Twenty-first Century* (Routledge, 2012).

<sup>15</sup> Sofia Ferreira, "Ukraine and Russia Trade Blame over Fire at Zaporizhzhia Nuclear Plant," *BBC*, August 11, 2024; "Video Analysis Reveals Russian Attack on Ukrainian Nuclear Power Plant Veered Near Disaster," *NPR*, March 11, 2022.

<sup>16</sup> John Carson, "Prohibition of Military Attacks on Nuclear Facilities," Vienna Centre for Disarmament and Nonproliferation, (September 2022), <https://vcdnp.org/wp-content/uploads/2022/09/Attacks-on-nuclear-facilities.pdf>.

India and Pakistan possess large civil and military nuclear programs and remain outside the 1968 Nuclear Non-proliferation Treaty (NPT). India currently has 22 operating power reactors with an installed capacity of 6780-megawatt electric (MWe).<sup>17</sup> It plans to build 7 additional power reactors by 2029, increasing its installed capacity by more than 70%. India is also a de facto nuclear weapon state with an estimated arsenal of 172 warheads.<sup>18</sup> It continues to operate plutonium processing and uranium enrichment facilities to produce fissile material for weapons. Pakistan has six civil nuclear power plants with an electric net capacity of 3530 MWe (17.2% of the national energy mix).<sup>19</sup> It plans to build its biggest commercial power plant by 2029, with a capacity of 1200 megawatt electric. Pakistan is also a de facto nuclear weapon state with an estimated arsenal of 170 warheads.<sup>20</sup> It also continues to operate uranium enrichment and plutonium processing facilities. Both opponents are likely to keep on modernizing and expanding their nuclear technology programs in future.

The India-Pakistan relationship, deeply rooted in historical events, is largely characterized by mistrust, suspicion, animosity, and hostility. They view each other as a source of insecurity and, thus, carefully guard their borders and territoriality from each other. They suspect each other's intentions and capabilities. Arguably, relatively stronger India considers Pakistan more of a political/ideological threat, whereas Pakistan views India as a serious physical and political threat to its existence. They contest each other's position and role in bilateral security relations. India seeks hegemony, while Pakistan fears that as a negation of its sovereign existence. They are fundamentally locked in power political antagonism, percolated across the fabrics of their societies and state institutions. The territorial dispute over Jammu and Kashmir is the physical manifestation of their enduring rivalry, which has persisted since their independence in 1947. Over time, they have fought several wars, serious military crises, and countless military skirmishes along the Line of Control (LOC), a ceasefire line in the disputed Jammu & Kashmir.

During the 1970s, nuclear developments added a new dimension to the India-Pakistan tenuous security relations. The Indian nuclear research program had begun before independence, primarily for peaceful purposes but also eventually for a military option. In the 1960s, India championed global nuclear disarmament as an alternative to the NPT, which it deemed unacceptably discriminatory because it allowed the five countries that had tested nuclear weapons before 1968 to keep them indefinitely, while all other members must foreswear them. Pakistan, on the one hand, supported and welcomed the NPT as an important instrument to curb nuclear weapons proliferation. On the other hand, it reckoned the NPT as discriminatory and inadequate in providing security guarantees to non-nuclear states. To safeguard its security from a stronger India having a threshold nuclear capability, Pakistan promoted a bilateral/regional nonproliferation policy. Pakistan believed the bilateral/regional approach was a quicker and more concrete step towards global nuclear disarmament, a slower and more challenging goal.

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<sup>17</sup>Atomic Energy Regulatory Board, India, "Nuclear Power Plants," <https://www.aerb.gov.in/english/regulatory-facilities/nuclear-power-plants>.

<sup>18</sup> Hans M Kristensen, Matt Korda, Friederike Frieb, Moritz Kütt, Zia Mian, and Pavel Podvig, "7: World Nuclear Forces," in *SIPRI Yearbook 2024*.

<sup>19</sup> Pakistan Atomic Energy Commission, "Nuclear Power," <https://paec.gov.pk/NuclearPower/>.

<sup>20</sup> Hans M Kristensen, Matt Korda, Friederike Frieb, Moritz Kütt, Zia Mian, and Pavel Podvig, "7: World Nuclear Forces," in *SIPRI Yearbook 2024*.

India's active diplomatic and military role in the bifurcation of Pakistan in 1971 and its so-called peaceful nuclear test (Smiling Buddha) in 1974, hardly 50 kilometres away from the Pakistani border, created a sense of urgency in Pakistan to pursue its own nuclear weapons option without running afoul of U.S. nonproliferation efforts. By 1983, Pakistan had matured its dual-use nuclear program to compete with the already well-established Indian nuclear program. However, the subcontinent's drift towards proliferation was not without friction, causing significant instability and uncertainty in the India-Pakistan security relations, especially during the first half of the 1980s.

The 1981 Osirak attack stoked fear and tension in the adjacent region of South Asia. It contributed to constant speculation about preventive proliferation strikes on nuclear facilities in South Asia. Between 1982 and 1985, fears and threats of reciprocal aerial strikes and even a wider conflict raised significant temperature in the India-Pakistan security relations.<sup>21</sup> To be more specific, Pakistan received intelligence reports from multiple sources that India, either alone or in collusion with the Israeli agency or the Soviet forces in Afghanistan, might conduct aerial strikes against Pakistani nuclear sites, especially uranium enrichment facilities located in Islamabad.<sup>22</sup> Given the proximate location of these nuclear sites to the Indian border, Pakistan bolstered its military capabilities and informed India of its determination to retaliate with reciprocal military strikes on Indian nuclear sites and its willingness for a wider conflict. For instance, the Pakistani chief nuclear scientist, Munir Ahmad Khan, "warned" his Indian counterpart, Raja Ramanna, during the International Atomic Energy Agency's (IAEA) meeting in Vienna in 1983 that Pakistan would respond with military strikes on nuclear facilities in Mumbai if India were to target its nuclear installations in Islamabad.<sup>23</sup> Similarly, Pakistani President General Zia-ul-Haq avowed that a larger conflict would ensue if India attacked Pakistan's nuclear installations.<sup>24</sup> The IAEA General Conference and the U.N.-affiliated Conference on Disarmament discussed the need for a global agreement prohibiting attacks on nuclear facilities, without success.<sup>25</sup>

Concerns about preventive proliferation military strikes in South Asia began to subside when Indian Prime Minister Rajiv Gandhi and Pakistani President Zia-ul-Haq made a public commitment not to target each other's nuclear installations/facilities in a joint press conference on December 17, 1985. India and Pakistan held three major rounds of talks between 1986 and 1988 to transform the verbal commitment into a legally binding document. Their delegates developed a common draft of the agreement except for a few minor differences over the preamble and technical details during the first two rounds of the talks.<sup>26</sup> The main sticking point was Pakistan's insistence on including a subclause to maintain regular contacts for the effective implementation of the agreement. India saw that as redundant because both sides would

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<sup>21</sup> Naeem Salik (Executive Director, Strategic Vision Institute), in discussion with the author on April 04, 2024.

<sup>22</sup> Abdul Sattar, *Pakistan's Foreign Policy 1947-2009* (Oxford; Oxford University Press, 2010), 214-215.

<sup>23</sup> Srinivas Laxman, "How the Father of Indian Nuclear Bomb Stalled Strike on Pak Nuclear Sites," *Times of India*, September 02, 2015.

<sup>24</sup> "President Zia-ul-Haq Press Conference in Islamabad," September 17, 1984.

<sup>25</sup> International Atomic Energy Agency, "Resolutions and Other Decisions of the General Conference," Thirty-First Regular Sessions, September 21-25, 1987, [https://inis.iaea.org/collection/NCLCollectionStore/\\_Public/40/082/40082631.pdf](https://inis.iaea.org/collection/NCLCollectionStore/_Public/40/082/40082631.pdf)

<sup>26</sup> "Press Conference of Indian Foreign Secretary A Venkateswaran," December 28, 1986.

exchange lists of coordinates annually. During the third round of talks in June 1988, the Indian side further explained its apprehension about the misuse of the proposed provision for introducing mutual inspection of the nuclear facilities, an idea long proposed by Pakistan. Although the Pakistani negotiators had disclaimed such intentions, they eventually conceded on the contact subclause in order to finalise a draft document.

This draft had three main elements: 1) a declaration on non-attack on nuclear installations/facilities; 2) a definition of nuclear installations/facilities; and 3) a list of nuclear installations/facilities to be exchanged by the two contracting parties. Negotiators for both sides believed that these three ingredients accurately reflected the verbal commitment made by Rajiv and Zia on December 17, 1985. Adding any other dimension would widen the scope of the agreement and, thus, go beyond the mandate given by their leadership.<sup>27</sup> Finally, Rajiv Gandhi and Benazir Bhutto signed the Agreement during their first summit meeting on December 31, 1988.<sup>28</sup>

The Agreement is a brief document with a preamble and three articles. Article I (1) prohibits each party from “undertaking, encouraging or participating in, directly or indirectly, any action aimed at causing the destruction of, or damage to,” nuclear installations/facilities of each other.<sup>29</sup> Article I (2) comprehensively defines nuclear installations/facilities. The term includes “nuclear power and research reactors, fuel fabrication, uranium enrichment, iso-topes separation and reprocessing facilities... installations with fresh or irradiated nuclear fuel and materials in any form and establishments storing significant quantities of radio-active materials.”<sup>30</sup> Article II obligates each party to provide on “1st January of each calendar year of the latitude and longitude of its nuclear installations and facilities.”<sup>31</sup> The Article III subjects the agreement to ratification. Both countries exchanged instruments of ratification in January 1991 and exchanged the first lists of coordinates of nuclear sites on 1st January 1992.

It is unclear why the Agreement uses the phrase “installations/facilities.” One perspective holds that these terms are synonymous, making the phrase redundant. Another maintains that the word “installations” typically refers to military use, whereas “facilities” relates to peaceful applications, so the phrase covers all nuclear sites without explicitly mentioning weapons programs that neither India nor Pakistan acknowledged they had at this time. A third interpretation suggests that “installations” may also encompass a broader geographical area, potentially housing multiple facilities, which could give protection to sensitive sites without revealing their exact coordinates.

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<sup>27</sup> “Record of the discussion of the officials meeting separately as mandated by the Foreign Secretaries of India and Pakistan, June 01, 1988, reproduced in *India-Pakistan Relations 1947-2007: A Documentary Study*, ed., Avtar Singh Bhasin in cooperation with Public Diplomacy Division, Ministry of External Affairs, Government of India, 10 vols., (New Delhi: Geetika Publishers, 2012), 3137-3138.

<sup>28</sup> “Pakistan, India Agree not to Attack Nuclear Plants,” *The Associated Press*, December 31, 1988.

<sup>29</sup> Agreement on the Prohibition of Attack against Nuclear Installations and Facilities, Pak.-Ind., December 31, 1988.

<sup>30</sup> Ibid.

<sup>31</sup> Ibid.



One account holds that India conceived of the Agreement as a way to legitimize its own nuclear weapons program by accepting Pakistan's.<sup>32</sup> The argument holds that, unlike Israel, India was not confident enough to take out the complete operational nuclear infrastructure of Pakistan without risking reciprocal strikes from Pakistan and widespread radioactive contamination in the adjacent urban areas of Islamabad and Bombay. Such military strikes would also attract immediate condemnation from the international community regarding regional proliferation issues. If, instead, India tolerated the Pakistani nuclear weapons program, India would have more justification for its own nuclear weapons program, as the international community was not fully convinced about its China threat theory. Therefore, India decided to acquiesce to Pakistan's nuclear weapon programs for realpolitik reasons.

Research for this project found broader motivations. Although the Agreement did not affect the nature and direction of India's and Pakistan's nuclear programs, it was conceived to build trust to initiate a broader process to address more complicated issues, including the normalization of broader security relations and non-proliferation issue between New Delhi and Islamabad. In a policy statement at the Rajya Sabha (the upper house of the bicameral Parliament of India) on the Rajiv-Zia verbal commitment to non-attack, the Indian Minister for External Affairs, B R Bhagat, depicted the objective as improved bilateral relations. He stated that "two leaders reaffirmed their determination to move rapidly towards complete normalization of relations between the two countries and, to this end... have agreed to work out an agreement whereby each will undertake not to attack the nuclear installations of the other...The agreement...is to reassure Pakistan...and this greatly welcomed and appreciated by them... this does not represent any departure, as is alleged, departure from our former nuclear policy [against Pakistan's nuclear program]."<sup>33</sup>

During the 1988 summit meeting between Rajiv Gandhi and Benazir Bhutto in Islamabad where the Non-Attack Agreement was signed, the two leaders exchanged detailed perspectives on their approaches to nonproliferation issues. They expressed a willingness to study common ground between India's global approach to nuclear disarmament and Pakistan's bilateral/regional approach to nonproliferation. Following the summit, the Indian External Affairs Minister, Narasimha Rao, briefed the Rajya Sabha on the context and implications of the Agreement. He stated:

A new dialogue is starting; a dialogue of this nature has never taken place before with the spirit which we have today... this agreement...is seen by both sides as a confidence building measure. At the same time, I do not agree that it closes our options or make them any less open. The options are as open as before, but in this process, at some point of time, certain confidence building measures have to be started. Now, this we take as a

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<sup>32</sup> Navinta Chadha, *Confidence Building Measures in South Asia*, PhD Thesis, University of Kent, 1993, 256; W Pal Sidhu (Clinical Professor at Center for Global Affairs, New York University), in discussion with the author on May 20, 2024.

<sup>33</sup> Parliament of India, Rajya Sabha, (Dec 17, 1985) (statement by Minister of External Affairs B R Bhagat on Summit meeting between the President of Pakistan and the Prime Minister of India held in New Delhi on 17<sup>th</sup> December, 1985).

starting point. Much will depend upon what happens later and how this dialogue proceeds and to what effect and to what extent.<sup>34</sup>

Seen in this light, the Agreement was certainly not to legitimize each other's nuclear weapons programs. Rather, it was meant to create a conducive environment to tackle more challenging issues, including normalization of relations and nuclear proliferation.

The Reagan Administration, which was instrumental in encouraging the India-Pakistan leadership to finalize the agreement, equally valued the trust-building and nonproliferation potential of the endeavour. The Administration aimed to encourage cooperation between India and Pakistan in response to the Soviet Union's presence in Afghanistan. Simultaneously, it wanted to address proliferation issues and foster rapprochement between the two rival countries. However, the lingering fear of counter proliferation military strikes created significant tension, causing both opponents to halt discussions on these critical matters. To alleviate this situation, the US administration proposed addressing the immediate threat of military strikes on nuclear facilities, thereby instilling confidence in both parties to engage in discussions about proliferation and the transformation of their bilateral security relations. The September 30, 1986 Memorandum of the US National Security Council in preparation for Secretary of Defense Casper Weinberger's visit to India and Pakistan, explicitly underlines these dual objectives. It recorded:

peace cannot really be meaningful unless it includes some limits on the nuclear weapons programs of both countries. Thus, we hope to facilitate progress on bilateral arrangements which institutionalize the Gandhi-Zia December 17, 1985 agreement not to attack each other's nuclear facilities and add to it a deal on non-manufacture, non-testing and non-transfer of nuclear weapons.<sup>35</sup>

Here, a Non-Attack Agreement was clearly not intended to endorse nuclear weapons programs in South Asia, but rather to foster a conducive atmosphere for rapprochement between India and Pakistan, including promoting a shared approach to nonproliferation issues. The Agreement did create a brief window of opportunity and optimism for addressing the complex bilateral issues. After mid-1989, though, the willingness to find common ground in their differing nonproliferation approaches waned due to volatile domestic politics and tensions over the spontaneous uprising in Jammu & Kashmir. This sentiment of a lost opportunity was later voiced by Pakistan National Security Advisor, Iqbal Akhund, who succinctly stated: "It was not much...in the end, it came to nothing, but at the time it appeared that an interesting new phase in India-Pakistan relations might be opening."<sup>36</sup>

Pakistan made a unilateral attempt in 1991 to combine global and bilateral/regional approaches by inviting India, China, Russia and the United States to a five-nation nuclear conference to

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<sup>34</sup> Parliament of India, Rajya Sabha, (February 22, 1989) (oral answer of the Minister of External Affairs Narasimha Rao on Indo-Pak talks).

<sup>35</sup> National Security Council, US, "A Legacy of Peace in South Asia: A Strategy NSC Meeting," October 30, 1986, Secret, Declassified/Released, 1.

<sup>36</sup> Iqbal Akhund, *Trial and Error: The Advent and Eclipse of Benazir Bhutto* (Oxford: Oxford University Press, 2000); reproduced by Sani H Panhwar, 67.

discuss and address nuclear proliferation issues in South Asia.<sup>37</sup> According to this idea, Pakistan and India would not have nuclear weapons, supported by requisite verification measures. It also required the US, Russia, and China not to use nuclear weapons against the South Asian countries and to come to the aid of victim in the event of an attack. However, India outrightly rejected this proposal.

Hopes of expanding the Non-Attack Agreement to include no nuclear weapons development and testing by either signatory were dashed in May 1998 when India, then Pakistan, tested multiple nuclear weapons. Although the nonproliferation objective became moot then, the Non-Attack Agreement has continued to play a crucial role in regional peace and stability by maintaining a measured and well-calculated mutual vulnerability. This underscores that an arms control accord can serve multiple purposes. It can discard its original objectives and adopt new ones, as the Non-Attack Agreement has done. The proceeding section will take the discussion further into the territory of the political and military effects of the Agreement on the India-Pakistan security relations.

### **Assessing Political and Military Value**

The first facet of the debate concerning the Agreement's efficacy maintains that it has no practical value for the India-Pakistan security relationship. The proponents of this view believe that the Agreement has purely symbolic and performative value. They also hold that the Agreement might have been meaningful in the security context of the late 1980s and early 1990s when India and Pakistan's nuclear weapons programs were more secretive and not fully developed. Since then, though, the two countries have openly acknowledged, expanded, and modernized their nuclear programs, so deterrence, not arms control, keeps them from attacking the other's nuclear sites. The supporters of this view claim that the final blow to the Agreement's practical value came with the introduction of satellite imagery. This technological advancement has revolutionized the monitoring of nuclear activities, rendering the Agreement's performative act of exchanging lists of nuclear sites obsolete. Toby Dalton spearheads this facet of the critique on the Agreement's efficacy.<sup>38</sup>

This sweeping critique does not hold true against a systematic retrospective and prospective examination of the Agreement's practical utility for regional peace and stability. A comprehensive analysis reveals that the Agreement has had significant positive impacts on both the political and military environments. The political/diplomatic benefits have been concrete, not purely symbolic. The Agreement has facilitated progress in India-Pakistan relationship and catalysed the signing of further behavioural arms control agreements. It has enabled Islamabad and New Delhi to garner diplomatic credit from the international community and helped avert sanctions. The Agreement has reinforced political control over operational military strategy. It has also provided an annual opportunity for the national leadership of both countries to reassure

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<sup>37</sup> "Pakistan Prime Minister for Superpower Role in South Asia Nuclear Talks," *United News of India*, June 06, 1991; "India Dismisses Pakistan Plan for Nuclear Free Zone," *Frontier Post*, June 08, 1991.

<sup>38</sup> Toby Dalton, "Modernize the South Asia Nuclear Facility 'Non-Attack' Agreement," *South Asian Voices*, Stimson Center, August 12, 2019.

each other and a way for them to calm down their aggressive domestic audiences during periods of peace and tension.

The signing of the Agreement facilitated the commencement of the comprehensive, structured security dialogue (known as Foreign Secretary-level talks) between India and Pakistan in December 1988, which remained in motion with intermittent brief interruptions until 2008. Rajiv Gandhi and Benazir Bhutto shared a vision for addressing all-outstanding bilateral issues with greater precision under a step-by-step approach. During the 1980s, India and Pakistan's nuclear technology programs and fear of reciprocal attacks on nuclear sites constituted one of the critical security issues between them. The two governments quickly agreed that signing the Agreement to refrain from attacking each other's nuclear installations would provide the concrete foundation to mark the beginning of a new era of cooperative security and reconciliation.<sup>39</sup>

As expected, signing the Agreement provided a positive context for progress in bilateral relations.<sup>40</sup> There was a flurry of bilateral meetings on all outstanding issues ranging from territorial to terrorism to trade and cultural exchanges during the first half of 1989.<sup>41</sup> This rapid tempo was slowed by the unexpected elections in India and the spontaneous uprising in Jammu and Kashmir in the latter half of 1989, but some progress on behavioural arms control continued. India and Pakistan agreed in 1990 to re-establish the Director Generals Military Operations Hotline. The next year, the India-Pakistan foreign secretaries, with the input of military experts working group, signed two accords on advance information regarding peacetime military exercises closer to the common borders and prohibition of airspace violation on April 6, 1991.<sup>42</sup> These two agreements were designed to prevent a crisis arising from misunderstanding routine military exercises, drills, and troop movements. Both countries signed a bilateral declaration on the Prohibition of Chemical Weapons in 1992. They reached a Memorandum of Understanding (MoU) as part of Lahore Declaration in 1999; established a Foreign Secretaries Hotline in 2004; agreed on Prenotification of Flight Testing of Ballistic Missiles in 2005; and on Reducing the Risk from Accidents related to Nuclear Weapons in 2007.

Work on these measures engaged the attention of the higher political and military authorities and contributed to reversing the negative trends in the bilateral security relations, which were on the brink of collapse in 1990 amidst unrest and violence in Jammu and Kashmir. India and Pakistan arms controllers carried forward the interlinkage between nuclear and conventional behavioural arms control measures in the subsequent rounds of the security dialogue (1997-1999 and 2004-2008).<sup>43</sup> Aside from this, the Agreement of non-attack against nuclear sites kept on getting traction in the subsequent proposals coming from both sides as a reference of bilateral achievement and impetus for further arms control process.

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<sup>39</sup> Iqbal Akhund, *Trial and Error: The Advent and Eclipse of Benazir Bhutto* (Oxford: Oxford University Press, 2000); reproduced by Sani H Panhwar, 65.

<sup>40</sup> "Winds of Change in Pakistan Ties," *Hindustan Times*, March 11, 1989; "New Impetus to Ties with India: Benazir," *Times of India*, March 24, 1989.

<sup>41</sup> "Indo-Pak Officials' Talks in May," *The Hindu*, April 07, 1989.

<sup>42</sup> K K Katyal, "India, Pak Sign accords," *The Hindu*, April 07, 1991.

<sup>43</sup> Ministry of Foreign Affairs, Pakistan, "Joint Press Statement," October 18, 1998; Ministry of External Affairs, India, "India-Pakistan Joint Statement," September 08, 2004.

More broadly, the Agreement provided a regular opportunity for India and Pakistan to reassure each other regarding their commitment to cooperative security and the dissemination of their approach to their societies at large. The Agreement enshrines mutual vulnerability by sharing coordinates of nuclear sites under a legal commitment not to attack them. The annual communication of coordinates of nuclear installations becomes particularly valuable during tensions and hostilities.<sup>44</sup> Under serious crises, when all communication channels cease to function, the act of exchanging lists assumes the role of subtle communication and instrument of stability. The two countries do not share the list of coordinates with the public, but they advertise the act of sharing lists in their leading national newspapers and, at times, through electronic and social media. Publicizing this cooperative security arrangement in the nuclear domain helps the governments on both sides to send a clear message to the aggressive domestic constituencies about the non-zero-sum nature of bilateral security relations and the limitation of violence.

Similarly, the Agreement institutionalized the reach and control of the political authority across the levels of military strategy. After exchanging ratification documents, both countries officially banned attacks on nuclear installations/facilities. Owing to this, the military command (strategic, operational, and tactical) cannot unilaterally decide to launch attacks on nuclear installations/facilities as if there were normal military targets. In extreme national security threats, the military command must obtain formal permission from the country's executive. This procedural step essentially slows down the tempo of military decision-making and provides additional time for diplomatic efforts to take effect.

The Agreement has also helped both countries claim diplomatic credit from the international community. The global print and electronic media gave significant coverage to the signing of the India-Pakistan accord. Many newspapers front-paged pictures of Rajiv Gandhi and Benazir Bhutto at the signing ceremony.<sup>45</sup> The nuclear accord facilitated New Delhi and Islamabad to avoid impending non-proliferation sanctions from the United States and continue receiving economic and security assistance from Washington throughout 1989. President Ronald Reagan promptly wrote letters to the Indian and Pakistani prime ministers, appreciating their constructive and cooperative approach to regional peace and stability.<sup>46</sup> Among others, Australian Prime Minister Bob Hawke also welcomed the India-Pakistan accord and saw it as the first concrete step towards joining the Non-proliferation Treaty (NPT) and accepting comprehensive safeguards of the IAEA.<sup>47</sup> Decades later, there is renewed appreciation within the international community for the India-Pakistan accord amidst the escalating military threats to nuclear installations during the ongoing Russia-Ukraine war and Israel-Iran tensions.

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<sup>44</sup> "India, Pakistan Easing Standoff: Exchange of Nuclear Data Proceeds," *Washington Post Foreign Service*, January 02, 2002.

<sup>45</sup> "India-Pakistan Ties Enter a New Era," *The New York Times*, January 01, 1989; "US Media Highlights Pak-India Accords," *Frontier Post*, January 2, 1989.

<sup>46</sup> "A [response] Letter from Prime Minister Rajiv Gandhi to the United States President Ronald Reagan," January 08, 1989; reproduced in *India-Pakistan Relations, 1947-2007: A Documentary Study*, ed., Avtar Singh Bhasin in cooperation with Public Diplomacy Division, Ministry of External Affairs, Government of India, 10 vols., (New Delhi: Geetika Publishers, 2012), 3184-3185.

<sup>47</sup> "Hawke Welcomes Indo-Pak Pact," *Times of India*, February 11, 1989.

In addition to these tangible political/diplomatic benefits, the Agreement has enhanced security and stability in the military environment in a number of concrete ways. It has significantly reduced the risk of accidental, inadvertent, or deliberate attacks on nuclear sites. Moreover, the Agreement has established a layer to prevent intra-war escalation, a key factor in maintaining peace and stability. It has also assisted the two rival militaries to secure their nuclear sites with minimum defences and lower cost. The political and military effects will be further detailed in the following paragraphs.

As Indian and Pakistani nuclear capabilities have grown over the years, fears of a deliberate disarming first strike may have diminished, while possibilities for miscalculation, misperception, loss of control, and crisis escalation have increased. A central premise of arms control is that modern weapons systems and postures can cause accidental/inadvertent escalations, so adversaries can both benefit from cooperative agreements that reduce risky and destabilizing military activities; promote responsible behaviour; and change, offset, or limit weapons capabilities that could incentivize using nuclear weapons first in a crisis or escalating rapidly to full-scale war. Such measures are most effective when rival military organizations consciously incorporate the concerned provisions of an arms control agreement in their operational military doctrines/strategies. In other words, for compliance purposes, the military organizations properly introduced arms control provisions into their war concepts, operational plans, training institutions, and the character of weaponry.

The annual conscious sharing of coordinates of each other's nuclear installations directs the two rival militaries to ensure that nuclear locations are off-limits for their weapon systems and military planning. Presumably, both militaries' missiles, artillery guns, and aircraft are regularly fed with the shared coordinates as null/zero operational locations. Given this, the weapons systems would invariably match the initializing coordinates with the pre-existing null coordinates to prevent any accidental/inadvertent launch against nuclear installations. Similarly, it is seemingly true with the case of ground forces, as operational strategy is usually conceived and implemented on the notion of the axis of operations on the ground. To this effect, the operational areas would either exclude nuclear sites or the operational and tactical commander would be presumably briefed about the nuclear installations as off-limit from military attacks, reducing the prospects of accidental and inadvertent ground attacks on nuclear facilities.

Since both countries have legally banned military attacks against nuclear installations, neither has explicitly or implicitly threatened to conduct deliberate strikes on nuclear sites. From 1988 to date, India and Pakistan contested each other through intermittent force mobilizations, nuclear tests, the Kargil War, the Balakot aerial encounters and follow-up threats of missile attacks, and countless military skirmishes along the Line of Control (LOC). However, there is no single publicly confirmed instance of discussions and plans of deliberate attacks against each other's nuclear installations. By considering nuclear installations off-limit, the nuclear accord has also served as intra-crisis and/or intra-war deterrence. It supports the idea of gradual escalation in a war scenario.

It is important to underline that military plans are highly secretive. Nuclear war plans are even more secret. Claims about the existence or absence of certain war plans, including or excluding

nuclear installations and facilities cannot be verified in the open literature. What can be verified with high confidence is that neither India nor Pakistan has ever conducted a kinetic attack on a nuclear site although both have the capability to do so. The legal instrument has reinforced normative constraints, and both sides know that non-compliance would likely lead to retaliation or reciprocal attack and even wider conflict between the two countries.

The Agreement has helped the two rival militaries to maintain the security of their nuclear installations in a relaxed manner with relatively less cost. From the late 1970s to the late-1980s, India and Pakistan undertook urgent special investments in raising aerial defences around their nuclear installations and facilities to deter any possible aerial attacks. These defensive measures included building airbases and installing modern anti-aircraft guns and short-range range-missile defence systems.<sup>48</sup> Most importantly, these aerial defence systems were maintained at higher alert levels before 1988. Ostensibly, the Agreement's implementation has encouraged both countries to reduce investment in aerial defences and maintain normal alert levels. This indicates that over the years, the two rival militaries have developed a degree of trust and confidence about the Agreement's compliance.

The increasing availability of satellite imagery has not made the security benefits of the Agreement obsolete. Undoubtedly, satellite imagery assists in monitoring the secret and suspicious nuclear activities of the monitored state(s). Nevertheless, satellite imagery has some inherent limitations. The first is that satellites may produce low-quality images or miss the target due to their distant location or higher speed. The second is the concealment efforts of the monitored states. As part of the concealment tactics, states can either build underground infrastructure and/or camouflage the structures. Thirdly, there are always risks of errors and misinterpretations of the imagery for various reasons.<sup>49</sup>

Besides, reliance on unilateral satellite imagery would be without a legal commitment not to attack each other's nuclear installations and facilities. The security and stability benefits of properly negotiated arms control instruments cannot be fully realized through sole dependence on unilateral satellite imagery. It is worth mentioning that India and especially Pakistan do not have robust and reliable satellite capabilities to monitor each other's territories completely. Satellite imagery best serves as a supplementary tool, providing a cross-check of the information and transparency committed under the arms control arrangements.<sup>50</sup>

Finally, to the extent that the South Asian and global security contexts have changed since 1988, they have not made the Non-Attack Agreement less relevant. Regrettably, India and Pakistan continue to be divided, hostile, and nuclear-armed. They attach great security value to their nuclear technology programs for defence and economic development. A military attack on nuclear installations would trigger a wider conflict with greater strategic, humanitarian, and environmental consequences. The on-going war around nuclear power plants in Ukraine and the

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<sup>48</sup> Shaikh Aziz, "A Leaf from History: Defending Kahuta, *Dawn*, July 26, 2015.

<sup>49</sup> Shahid Mehmood (Program Head of Robotics and AI, Ibadat International University, Pakistan), in discussion with the author, July 20, 2024.

<sup>50</sup> Ghulam Mujaddid, (former Chair of Aerospace and Strategic Studies, Air University, Pakistan), in discussion with the author, June 04, 2024.

resurgence of calls for military strikes on Iran's nuclear program are reviving old temptations regarding alleged strategic advantages and nonproliferation benefits that might be gained from attacking nuclear sites. Undoubtedly, the Agreement has an enduring value as long as nuclear programs exist between India and Pakistan.

### **Enlargement of Scope Complicated By Divergent Military Doctrines**

The second critique, which is less dismissive than the first, argues that the Agreement requires substantive upgradation to achieve its full potential. This perspective, usually voiced by Indian policymakers and strategists, maintains that the Agreement could be made more effective by expanding its coverage to urban centres and large economic complexes. Agreeing not to target nuclear weapons against population and economic centres would advance the humanitarian purpose of the original Non-Attack Agreement.<sup>51</sup> At the same time, doing so would have profound military doctrinal bearing, particularly on Pakistan. India and Pakistan's significantly different military doctrines make it impractical and unfeasible to expand the Non-Attack Agreement this one way, without broader changes to the two rivals' military postures. Moreover, the two sides' doctrinal thinking is not largely interactive and related to each other, which informs their respective force development, the connection between conventional and nuclear capabilities, and their military planning.

Pakistan's doctrinal thinking is exclusively based on its threat perception from India. With its elongated geographical shape mostly consisting of arid deserts and plain fertile areas without much depth, Pakistan's major urban centres, industrial zones, and vital communication networks are situated along its borders with India. Notably, Pakistan's economy and conventional forces are significantly weaker than India's. Pakistan's Gross Domestic Product (GDP) and defence budget are 10 and 11 times lesser than India's, respectively. Consequently, Islamabad has strategically integrated its nuclear capability with its weaker conventional forces to deter India as part of its larger doctrinal thinking.<sup>52</sup>

Contrary to Pakistan's Indian-centric threat-based doctrine, India's doctrinal thinking is largely independent and capability-based. It is influenced by its distinctive geographical location and power position. India holds a unique and advantageous power position over smaller South Asian states. On the one hand, it shares a border with most South Asian states. On the other hand, the combined area of the South Asian states is hardly half of India's. Being situated deep down in the Indian Ocean, it is naturally open to radiate its power from Asia to Africa. Therefore, it feels tempted to have a military power that corresponds to a regional hegemon and major Afro-Asian power.<sup>53</sup>

Notably, India has not faced any significant threat of foreign invasion for the last two centuries. While it regards China and Pakistan as serious rivals, New Delhi does not feel an immediate alarming threat due to Pakistan's smaller power size and the natural barriers of the world's

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<sup>51</sup> J. N. Dixit, *India-Pakistan in War & Peace* (London: Routledge, 2002), 290, 344.

<sup>52</sup> Zulfqar Khan (a former Dean, National Defence University, Pakistan), in conversation with the author, June 04, 2024.

<sup>53</sup> Nasir Mehmood, *Political Conflict and Arms Control: Pakistan-India Policy Analysis, 1988-2008* (Lanham; Rowman & Littlefield, 2023), 80-83.



highest mountains separating it from China. However, India aims to remain prepared for a potential worst-case scenario, including Pakistan and/or China and/or some extra-regional foreign power. Given the strong conflict management mechanisms between New Delhi and Beijing, the majority of Indian armed forces are historically postured towards the Pakistani borders, which heightens manifold Islamabad's vulnerabilities and anxieties.<sup>54</sup>

India has proposed twice the idea that the Non-Attack Agreement could be extended to include population centres and economic targets. The first time was in January 1994, when India formally shared the idea with Pakistan as part of its six non-papers.<sup>55</sup> Islamabad studied the idea with care in view of the seriousness of the issues between India and Pakistan. It found that the proposal had serious implications for Pakistan's nonproliferation and military doctrinal thinking. At that time, both India and Pakistan were not overtly declared nuclear weapon states. Additionally, Islamabad was vigorously pursuing its bilateral/regional nonproliferation agenda with India.

Against this backdrop, the Pakistani decision-makers pointed out that the Indian proposal could potentially legalize the presence of nuclear weapons in South Asia, a stance contradictory to Islamabad's nonproliferation policy. They also underlined that by accepting it, Pakistan could invite a sharp reaction from the international nonproliferation community. Parallel to this, the Indian proposal's uneven effects on the Pakistani military doctrinal precepts were also highlighted. Islamabad emphasized that such an idea should be more than a paper declaration to ensure the security of its geographically vulnerable population and economic centres. To this effect, it counter-proposed that the idea should include "practical manifestations of good intentions, including removal of troop concentrations opposite major population centres, withdrawal of deep penetration aircraft, missiles, long-range artillery, etc."<sup>56</sup> These specific measures would made the idea more substantial. Nevertheless, New Delhi did not respond favourably to Islamabad's counterproposal.

Following the nuclear tests in South Asia, India once again proposed the idea to Pakistan in October 1998. Although the Pakistani negotiators recognized the humanitarian value of the proposal, they could not approve it without having adequate security arrangements against the Indian conventional threat. They believed the proposed measure inherently favoured Indian doctrinal precepts that sought to exploit conventional disparity with Pakistan. At the same time, this measure was disadvantageous to Pakistan's ambiguous minimum deterrence doctrinal thinking, which is open to counter-value targets to reinforce the political and psychological effects of its strategic deterrence to prevent the opponent from initiating and winning the war.<sup>57</sup>

To conclude, India and Pakistan have distinct military doctrines. Pakistan's military doctrine is primarily focused on India, establishing a direct link between its nuclear and conventional

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<sup>54</sup> Central Intelligence Agency, "The Indo-Pakistani Military Balance," April 19, 1985, Secret, Sanitized Copy Approved for Release; Usman Haider, "India's Military Turns Toward Integrated Commands: A Rising Challenge for Pakistan," *The Diplomat*, August 08, 2023.

<sup>55</sup> "India Sends 6 Proposals to Pakistan," *The Times of India News Service*, January 25, 1994.

<sup>56</sup> Sunil Narula, "Pakistan Offers Talks after Ramadan," *Times of India*, February 20, 1994.

<sup>57</sup> Akram Zaki (Pakistan Foreign Secretary-General and Foreign State Minister 1991-1993), in discussion with the author, February 04, 2017.

capabilities. In contrast, India's military doctrine is largely independent and capability-based, aiming to mitigate the effects of the Pakistani nuclear threat and exploit the conventional disparity. The divergent doctrinal thinking has added a thick layer of complexity to the possibility of the expanding scope of the Agreement. While these doctrinal divergences persist, it is unlikely that the two rival countries would be able to develop consensus on the enlargement of the scope of the Agreement. This would involve expanding the Agreement to declaring population and economic centres off-limits from their target doctrines.

### **Non-compliance and Dilution of Effects**

The third critique is based on compliance concerns. This perspective uses reported instances of doubts/controversies about India and Pakistan's consistency in complying with all commitments; thus, the nuclear accord has diluted its role in regional peace and stability. The allegations can be divided into two categories: 1) resorting to attack and 2) providing incomplete lists of sites. The thorough analysis finds no verified accounts of either party planning or implementing military attacks on each other's nuclear sites since the signing of the Agreement in 1988.

There have been two controversial episodes during periods of tension and hostility when Pakistan or India has been accused of threatening or planning to attack its rival's nuclear installations/facilities. In the first instance, Pakistan allegedly threatened to strike an Indian nuclear installation during the height of the 1990 Kashmir crisis. According to this speculative account, Pakistan sent its foreign minister, Yaqub Khan, to convey a message to his Indian counterpart, Inder Kumar Gujral, on January 22, 1990, that if Indian conventional forces invaded Pakistan, Islamabad would consider its nuclear capability against Mumbai (nuclear installations) in retaliation. This controversial claim finds no support from the Pakistani and Indian foreign ministers in question. Yaqub Khan vehemently denied being tasked or communicating any nuclear threat to his Indian counterpart. He described the allegations as "absurd, fictional, and void of strategic logic and reasoning."<sup>58</sup> While he emphasized the disputed nature of Jammu & Kashmir and its effects on India-Pakistan relations to his Indian counterpart, Yaqub Khan underscored that his remarks did not mean any war to this effect.<sup>59</sup> I K Gujral, who documented the details of the meeting in his memoir, did not mention an explicit or implicit threat of attack on the nuclear facilities in Mumbai. The 1990 Kashmir crisis was resolved through US diplomacy between India and Pakistan.

The other alleged instance involves Pakistan's fear of an India-Israel joint attack on the Pakistani nuclear site on the eve of its tit-for-tat nuclear testing in May 1998. Citing some intelligence reports, the Pakistani foreign ministry conveyed an early morning demarche to the Indian High Commissioner in Islamabad on May 28, 1998. It warned about the consequences of any attack on Pakistani nuclear sites. Parallel to this, the Pakistani diplomats also approached the United Nations and the US officials about Israel's involvement. Both India and Israel dismissed Pakistan's suspicions. The official spokesperson of the Indian Ministry of Foreign Affairs

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<sup>58</sup> Akram Zaki (Pakistan Foreign Secretary-General and Foreign State Minister 1991-1993), in discussion with the author, February 04, 2017.

<sup>59</sup> I K Gujral, *Matters of Discretion: An Autobiography* (New Delhi, Hay House Publishers, 2011), 280-281; "Gujral and Vajpayee on Kashmir," *Frontline*, September 30, 2015.

promptly responded: “India stands committed to uphold its treaty obligations and agreements including the India-Pakistan Agreement on the Prohibition of Attack against Nuclear Installations and Facilities.”<sup>60</sup> Similarly, the Israeli officials, through the UN and the US channels, conveyed their messages of reassurance to Pakistan. Finally, the US government concluded that such an attack was unlikely.<sup>61</sup>

The second category of allegations questions peacetime compliance with Article II of the Agreement, which requires each party to annually provide the latitude and longitude of its nuclear installations and facilities to the other party. Complaints have been voiced regarding the comprehensiveness of each other’s lists. For instance, on January 8, 1992, a media report claimed that India had provided an incomplete list of its nuclear sites to Pakistan.<sup>62</sup> The journalist, while citing some anonymous Pakistani government sources, maintained that the Indian list did not include some important nuclear sites. However, there was no official confirmation of the report, either from India or Pakistan, about the accuracy of the media report.

Even if the media report was accurate, providing an incomplete list does not violate the Agreement. Article II allows each party to prepare its own list of nuclear sites that it wants to place under mutual vulnerability.<sup>63</sup> The Agreement also permits the parties to make any change in the list whenever it wishes. By not specifying that the list must include all nuclear sites, the Agreement allows both sides discretion to exclude facilities or installations that it wants to keep secret.

This flexible arrangement seems to suit both sides because over the years, neither government has ever publicly accused the other of Article II violations, nor have any of the recurrent allegations in the media referenced a credible source. India and Pakistan have a common interest in enhancing the security of their nuclear technology programs with less political, diplomatic, military, and economic costs. The Agreement’s compliance shows that the arms control instrument has continual appeal to the self-interest of the participants. Typically, participants do not upset or dismantle a stable and functioning system for trivial reasons, especially when it is clearly beneficial for them.<sup>64</sup>

### **Effects on Mutual Deterrence**

The fourth facet of the debate claims that the Agreement is destabilizing because the lists exchanged provide targeting information that an aggressive party could exploit if there was a fast-closing window when it would be advantageous to launch a first strike.<sup>65</sup> This presumes that the lists exchanged provide complete and detailed targeting information not available from other sources, and that one or both countries have the capabilities needed to destroy all of them before

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<sup>60</sup> Ministry of External Affairs, India, “Calling in of Indian High Commissioner by Pakistan Foreign Secretary,” May 28, 1998.

<sup>61</sup> David Horovitz, “Israelis Dismiss Claims of Plans to Blow up Pakistani Nuclear Sites,” *The Irish Times*, June 03, 1998.

<sup>62</sup> “Pakistani Sources Charge India Failed to Adhere to Nuclear Pact,” *United Press International*, January 08, 1992.

<sup>63</sup> Agreement on the Prohibition of Attack against Nuclear Installations and Facilities, Pak.-Ind., December 31, 1988.

<sup>64</sup> Robert R Bowie, “Basic Requirements of Arms Control,” *Daedalus* 89, no. 4 (Fall, 1960): 721-722.

<sup>65</sup> Julian Spencer-Churchill (associate professor, Concordia University) in discussion with the author, June 06, 2024.

the other could retaliate. If that were true, the Agreement would weaken confidence in mutual vulnerability, destabilize nuclear deterrence, and causes insecurity between India and Pakistan.

A careful analysis of the Agreement's design, functions, and implications reveals that the critique is misplaced. The core function of this arms control instrument is for each party to give assurances of non-attack against nuclear installations if the other party does the same. The reciprocal commitment to non-attack accepts and enhances mutual vulnerability of nuclear installations and facilities at the same time that it reinforces deterrence by not affecting the nature and direction of the parties' nuclear weapons programs. The discretion both parties have to include or exclude nuclear sites from exchanged lists lets each make its own calculations about the relative value of reassurance and deterrence when evaluating the cost of worst-case scenario if one party cheats and its consequences on the other party.

An additional safeguard against the misuse of exchanged information involves the embedded coordinates format used to exchange, which allows the two parties to obscure the location of nuclear installations enough to render the information useless for targeting purposes.<sup>66</sup> Coordinates are normally expressed in the DMS system (where "D" represents Degree, "M" represents Minutes, and "S" represents Seconds). The distance between two degrees is approximately 113 km, between two minutes is approximately 2 km, and between two seconds is 30 meters. If seconds are given with up to four decimal places, the accuracy increases to 3cm. Only the lists exchanged in 1999 are publicly available. If the 1999 lists are representative of typical practice, the two countries share coordinates only in DM format.<sup>67</sup> By excluding seconds from the coordinate, there is a default round-off error of accuracy of 2 km. This provides the area location within a 1 km radius. Furthermore, the exchanged DM coordinates do not necessarily represent the protected site's precise location; rather, they specify that it falls within a circle with a radius ranging from 2 km to 5 km from that midpoint. Taken together, the two sources of uncertainty place the site someplace within a circle whose radius is a minimum of 3 km and a maximum of 6 km. A location with a 6 km radius would have an approximate land area of 113 square kilometres. For reference, Washington, DC, has an approximate land area of 150 square kilometres. For additional obfuscation, the two sides share coordinates of the nearby town/city for some sensitive installations. The preceding analysis shows that the Agreement allows the two parties to enhance a measured and calculated mutual vulnerability by granting greater protection for nuclear sites that fall within non-attack sanctuaries covering larger areas.

Nothing in the Agreement limits the nature and direction of the parties' nuclear weapons programs. The rivals can keep the precise location of all nuclear deterrent forces and related structures top secret by leaving those sites off the list or drawing a protected circle that might include a few elements of them somewhere within a large geographic area. In this manner, the Agreement does not weaken the credibility of deterrent forces. In a nutshell, the arms control

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<sup>66</sup> Ibid.

<sup>67</sup> "Note from Pakistan Ministry of Foreign Affairs listing its nuclear installations," January 01, 1999; "Note from Ministry of External Affairs listing Indian nuclear facilities," January 01, 1999, reproduced in *India-Pakistan Relations 1947-2007: A Documentary Study*, ed., Avtar Singh Bhasin in cooperation with Public Diplomacy Division, Ministry of External Affairs, Government of India, X vols., (New Delhi: Geetika Publishers, 2012), 4628-4629.

agreement introduces measured mutual restraint and vulnerability without affecting the requirements of an effective deterrence. It is carefully tailored to achieve a fine balance between reassurance and deterrent threat.

### **Augmenting Efficacy Without Renegotiating Agreement**

The Non-attack Agreement does a remarkably good job of balancing diplomatic and military means of protecting nuclear sites, especially for a first-of-its-type accord. This research has shown that the most common critiques appear to be groundless, while the most prominent suggestion for improvement – enlargement to include add protections against nuclear attack for urban centres and large economic complexes – would not be acceptable to Pakistan unless conventional arms control was included. Under current circumstances, any attempt to renegotiate the Non-Attack Agreement could easily cause its demise. There are, however, two supplementary measures that, while not doctrinally sensitive, could significantly enhance the Agreement’s efficacy. The first measure involves creating a Bilateral Consultative Commission, either general or agreement-specific, to conduct periodic implementation reviews. The second measure suggests a bilateral formal/informal agreement/understanding prohibiting cyber-attacks against nuclear installations/facilities.

Since the end of the Cold War, India and Pakistan have signed more behavioural arms control agreements than any other Asian adversarial dyad. However, it is regrettable that none of these agreements has verification arrangements or compliance mechanisms. Even more concerning is the absence of a dedicated arms control forum between India and Pakistan. The two rivals have historically discussed arms control as part of their broader security dialogue, which has been subject to intermittent interruptions and long delays.<sup>68</sup> They have not held a composite dialogue for the last one and a half decades.

Most existing behavioural arms control agreements are increasingly facing the challenge of interpretation, implementation, and application in the fast-changing politico-military environment. The agreement on the Prohibition of Attack against Nuclear Installations/Facilities is no exception.

The proposed Commission could help the two parties address the concerns and issues related to the Agreement. It could facilitate discussions of ambiguities in the implementation and applicability of the Agreement in the emerging environment. Important questions include, inter alia: What are the guiding principles for including and/or excluding nuclear sites from the lists? Are excluded nuclear sites legitimate targets? What are the remedies if one state violates the Agreement? If a disagreement of the interpretation of the Agreement occurs, how will it be addressed? What is the status of under-construction and/or non-operational nuclear sites? What additional mechanisms can be introduced to secure nuclear sites against accidental/inadvertent attacks? The proposed Commission, through its periodic implementation review of the Agreement, would help address all emerging questions and concerns of the two parties, which will increase the effectiveness of the arms control instrument.

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<sup>68</sup> Nasir Mehmood, “For Arms Control to Thrive in South Asia, A Bilateral Consultative Body is Crucial,” *South Asian Voices*, September 26, 2024.

A 1999 Memorandum of Understanding (MoU) between the two countries recognized the need to establish a Bilateral Consultative Mechanism to conduct periodic implementation reviews of all existing arms control agreements.<sup>69</sup> Although both sides discussed the issue during the Composite Dialogue held between 2004 and 2008, they were unable to fully explore and test the idea. With relatively newly elected governments in New Delhi and Islamabad, the two governments have the political capital and opportunity to revisit the value of establishing a broad or agreement-specific Consultative Commission. The two sides could determine the Commission's composition, authority, and operational procedures through backchannel discussions. Once finalized, the two governments could arrange an international conference to celebrate the Non-Attack Agreement longevity, announce the Commission, and explore lessons for protecting nuclear sites in other regions.

The Non-Attack Agreement's effectiveness can also be enhanced by concluding a separate formal agreement prohibiting disruptive cyber-attack against nuclear installations and facilities or an informal understanding that the 1988 accord's prohibitions apply to digital means of attack, not just kinetic ones. The cyber domain is an emerging sphere of contestation with serious consequences between rival states. The challenge of attribution and overarching cascading effects makes it even more attractive tool of policy. With each passing year, states are increasingly militarizing cyber instruments not only for getting unauthorized access to information but also causing physical damage to critical infrastructure of their rivals. Ostensibly, nuclear sites are hardened against potential cyber-attacks, but the Stuxnet attacks on Iranian centrifuges revealed vulnerabilities. Malware could cause extensive damage to a nuclear facility, exacerbating political tensions between rivals, which could escalate to war.<sup>70</sup>

If India and Pakistan made a legal or declaratory commitment to prohibit disruptive cyber-attacks on each other's nuclear sites, they could establish a high-level dialogue to develop norms, principles, and rules of the road in cyberspace. For example, they could clarify whether cyber espionage would be tolerated as long as it did not include measures laying the groundwork for a disruptive attack. They could also institutionalize a reporting mechanism for different types of cyber events that they wanted to discuss with the other side.<sup>71</sup> As the level of bilateral trust and confidence grows over time, the two sides might be willing to share more sensitive information to improve cyber security at nuclear sites, particularly against attacks by non-state actors. In this context, they might want to specify the organizational processes and critical nodes that each side should prioritize for protection against disruptive third-party attacks that could have serious consequences for both sides. Overall, the Agreement will assist both countries in establishing road rules for what is acceptable and what is not in the uncharted territory of cyberspace.

India and Pakistan can explore and test these two doctrinally non-sensitive ideas to enhance the Non-Attack Agreement's effectiveness. If successful, they could incorporate one or both

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<sup>69</sup> Memorandum of Understanding, Ind.-Pak., February 21, 1999.

<sup>70</sup> "Iran Confirms Stuxnet Worm Halted Centrifuges," *CBS News*, November 29, 2010; "Israeli Test on Worm Called Crucial in Iran Nuclear Delay," *The New York Times*, January 15, 2011.

<sup>71</sup> The United States and Russia use their National and Nuclear Risk Reduction Centers to communicate with each other about nuclear, cyber, and other security-related events in order to reduce misunderstanding and miscommunication, prevent unwarranted escalation, and facilitate confidence in compliance with arms control.

measures in the original Agreement or approve them as separate supplementary measures. The latter option is more likely to appeal to both countries. Renegotiating an important historical Agreement in a political environment that is less accommodating and cooperative than it was when the accord was first signed would be risky and challenging. With intricate policies and processes involved, the renegotiation process could lead to increased mistrust and suspicion, possibly putting the original Agreement at risk.

## **Conclusion**

Admittedly, the Non-Attack Agreement has not transformed political and military relations between India and Pakistan. Both South Asian nuclear powers continued to be rival, divided, armed, and hostile to each other. It never fulfilled hopes expressed by non-proliferation proponents of being the first concrete step that would lead India and Pakistan to join the Non-proliferation Treaty (NPT). However, the Agreement has created a more relaxed environment regarding the security of their nuclear installations and facilities than existed in the mid-1980s. It has enduring value due to lingering animosity and the presence of nuclear technology programs in South Asia.

The Agreement has survived for nearly four decades because it has a simple structure with several dimensions that are mutually reinforcing in terms of functions and implications. On the one hand, it provides assurances and mechanisms to prevent accidental/inadvertent/deliberate attacks on nuclear installations/facilities. On the other hand, it preserves deterrence through measured mutual vulnerability without affecting the nature and direction of the two sides' dissimilar nuclear weapon programmes. The fine-tuned balance embedded in the Agreement design makes it attractive to rival states, who want to maintain deterrence through credible threats but with the assurance of measured mutual vulnerability of their nuclear installations/facilities. By implication, it is also an instrument of intra-war deterrence.

The Non-Attack Agreement would only become redundant if the context changed so dramatically that neither side could imagine the other attacking its nuclear facilities or installations. Since India and Pakistan continue to be hostile along with expanding nuclear technology programs, the Agreement continues to be relevant and important for regional peace and stability. Conversely, scrapping the Non-Attack Agreement would immediately raise questions about motivations. Abandoning their first bilateral nuclear arms control agreement would negatively impact other existing agreements between India and Pakistan, and damage future arms control prospects.

The nuclear accord has also helped foster an epistemic community on both sides of the border, comprising individuals who regularly prepare these lists and oversee the implementation of the Agreement. Learning about their experience and listening to their ideas about how to help the Non-Attack Agreement function more effectively in a changing environment will be a worthwhile effort. Supporting this community in sharing their perspectives with their respective decision-making elite would enhance the future-oriented perspectives of the higher civil and military leadership in both countries.

Instead of duplicating the India-Pakistan agreement, other members of the international community can use it as a reference point for establishing security mechanisms for nuclear sites that fit different contexts. As a reference point, countries and regions can draw a few basic lessons from India and Pakistan's experience. First, the security of nuclear installations requires a proper legal commitment and operational requirement of sharing coordinates with some, but not too much, precision. Second, simple and brief agreements, if designed and implemented properly, can serve the purpose effectively. Third, countries can benefit from the experience of India and Pakistan's arms control epistemic community to design and implement such non-attack agreements according to their peculiar security context.

The Non-Attack Agreement is a noteworthy instance of cooperative innovation when two South Asia rivals with no previous nuclear arms control experience designed and implemented a long-lasting prohibition that has been discussed, but never agreed on, in other multilateral fora. This modest measure has brought far more tangible political and military benefits than are commonly known and deserves more thoughtful international attention than it has received to date. At a time of active combat around major nuclear power plants in Ukraine and loose talk about military strikes on Iran's nuclear sites, drawing attention to the success of the India-Pakistan Non-Attack Agreement provides a positive way to educate policymakers and publics about what can be done to prevent the strategic, humanitarian, and environmental consequences of such attacks.