



NUCLEAR AGE PEACE FOUNDATION

Committed to a World Free of Nuclear Weapons

India's Nuclear Program

By Volha Charnysh, NAPF Intern

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Background

India became an independent country on August 15, 1947 and almost immediately stepped to the front lines of the movement for universal nuclear disarmament. Writing in the *Harijan* in September 1948, India's prominent political and spiritual leader Mohandas Karamchand Gandhi said, "I regard the employment of the atom bomb for the wholesale destruction of men, women and children as the most diabolical use of science."¹ In the same year, India introduced a resolution in the United Nations (UN) General Assembly that stressed the need for effective international control of atomic energy.² In 1949, the Indian permanent representative to the UN, Sir Benegal Rau, was appointed to chair the subcommittee tasked with designing a proposal to restrict the spread of nuclear weapons.³ In 1954, India was the first country to stress the need for an end to all nuclear weapons testing,⁴ and in 1965 it proposed a nondiscriminatory nonproliferation treaty. In 1978, India proposed an international convention that would prohibit the use or threat of use of nuclear weapons. In 1982, India called for a "nuclear freeze," that is, a prohibition on the production of fissile material for weapons, on production of nuclear weapons, and on related delivery systems. At the UN General Assembly Special Session on Disarmament in 1988, India put forward a Comprehensive Plan for total elimination of weapons of mass destruction.⁵

Initially, India's behavior corresponded to its nonproliferation and disarmament posture. New Delhi's interest in nuclear technology was restricted solely to its peaceful uses, such as the production of inexpensive electricity. India's nuclear program, started at the Bhabha Atomic Research Center in Trombay, was based on the country's abundant natural thorium reserves.⁶ Its foundation was laid by the US Atoms for Peace program, which aimed to encourage the civil use of nuclear technologies in exchange for assurances that they would not be used for military purposes.⁷ India's first reactor, the 1 Megawatt (MWt) Aspara Research Reactor, was built with British assistance in 1955. The following year, India acquired a CIRUS 40 MWt heavy-water-moderated research reactor from Canada.⁸ The United States agreed to supply heavy water for the project.⁹ More than 1,000 Indian scientists participated in US nuclear energy research projects from 1955-1974.¹⁰ The United States also assisted India in building and fueling the Tarapur reactors.¹¹

While India pursued a solely "peaceful nuclear program" in the 1950s, by the mid-1960s it reconsidered its aversion to nuclear weapons in the face of escalating regional instability. India's two main rivals in the region have been Pakistan and China. The roots of the India-Pakistan conflict go back to 1947, when British India was separated into the Muslim state of Pakistan and the largely Hindu India. In 1947-48 and again in 1965 India and Pakistan fought wars over the disputed Kashmir territory.¹² In 1971, a third war resulted in East Pakistan becoming the separate nation of Bangladesh.¹³ The amicable relationship between the United States and Pakistan also frequently marred US-Indian relations.

India's geographic proximity to communist Beijing has also been problematic. India's defeat in the 1962 border conflict with China proved its military unpreparedness and exacerbated tensions between the two countries.¹⁴ Two years after the conflict, China tested a nuclear weapon, making Indian politicians question the wisdom of their nuclear policies.¹⁵ In April 1970, China launched a long-range rocket carrying a satellite into orbit, proving its capability to launch nuclear warheads at distant target. This intensified the debate in New Dehli and strengthened the position of Indian nationalists, who argued for acquiring an independent nuclear weapons system.

India's earlier decision to develop the complete nuclear fuel cycle allowed it to easily acquire technical capability to build nuclear weapons when the geopolitical situation changed.¹⁶ In November 1964, Prime Minister Lal Bahadur Shastri authorized theoretical work on the Subterranean Nuclear Explosion for Peaceful Purposes (SNEPP). India commissioned a reprocessing facility at Trombay, which was used to separate out the plutonium produced by the CIRUS research reactor. This plutonium was used in India's first nuclear test on May 18, 1974, described by the Indian government as a "peaceful nuclear explosion."¹⁷ An expert analysis of the explosion demonstrated India's capability to produce nuclear weapons.

International reaction to the Indian blast was mixed. The Non-Aligned Movement member states applauded India's technological breakthrough. France sent congratulatory messages to the Indian Atomic Energy Commission. The United States was far from enthused, however, and imposed restrictions to limit India's access to nuclear material and technology. Upset over the involvement of the Canadian reactor to produce plutonium for the explosion, Canada immediately cut off aid to the Indian nuclear program. Perhaps reacting to international ambivalence about the test, India hurriedly cancelled all other scheduled tests. During the brief tenure of the Janata Party government (1977-79), the nuclear weapons program was put on hold.

However, the weapons program was resumed after Indira Gandhi returned to power in 1980. In 1983, India started developing an Integrated Guided Missile Program (IGMP), and by 1989 it tested short- and medium-range missiles. In 1989, William H. Webster, director of the CIA, testified before the Senate Governmental Affairs Committee that "indicators that tell us India is interested in thermonuclear weapons capability."¹⁸ Once the decision to produce the bomb was made, India progressed quickly, especially during the periods when Hindu-nationalist Bharatiya Janata Party (BJP) was in power. By May 1994, the country acquired the capability to deliver nuclear weapons using combat aircraft. By 1996, Indian scientists succeeded in developing a nuclear warhead that could be mounted on to the Army's Prithvi-1 ballistic missile.

What happened to the country's commitment to nuclear weapon-free world and global nuclear disarmament? A significant aspect of India's decision to build the bomb was pride. "We don't want to be blackmailed [...]. Nuclear weapons will give us prestige, power, standing. An Indian will talk straight and walk straight when we have the bomb," a BJP spokesman said in 1993.¹⁹ Another motivation for developing nuclear arms was living next door to nuclear-armed China and nuclear-aspiring Pakistan. In 1996, BJP leader Atal Bihari Vajpayee vowed not to compromise India's national sovereignty and security: "We do not wish to see India blown apart by Pakistan or China because we did not possess the deterrent nuclear power."²⁰ It was Vajpayee's party that authorized two rounds of nuclear tests in May 1998.

On May 11, 1998, India tested three devices at the Pokhran underground testing site, followed by two more tests on May 13, 1998. One of the detonations was claimed to be thermonuclear.²¹ The outcry from outside India was almost universal.²² Foreign Minister of Pakistan Gohar Ayub

Khan hinted that Islamabad would consider conducting a nuclear test of its own,²³ and the same month five nuclear tests came from Pakistan.

Robert Norris and Hans Kristensen estimate the Indian arsenal to consist of 70 assembled nuclear warheads, with only about 50 fully operational.²⁴ India has a declared nuclear no-first-use policy and continues to advocate the end to nuclear testing and global disarmament “based on the principles of universality, nondiscrimination and effective compliance.”²⁵ The country is a member of the International Atomic Energy Agency (IAEA), but only four of its 13 nuclear reactors are subject to IAEA safeguards. However, India has not signed the Comprehensive Test Ban Treaty (CTBT) or the Non-Proliferation Treaty (NPT).

Timeline

1946: The Indian government forms the Atomic Energy Research Committee chaired by Dr. H. Bhabha to promote education in nuclear physics in Indian colleges and universities.²⁶

1948: Prime Minister Nehru introduces the Atomic Energy Act before India's Constituent Assembly to create an Atomic Energy Commission (AEC) and the legal framework for its operation.²⁷

1952: Prime Minister Nehru unveils a four-year plan to begin developing India's nuclear infrastructure.²⁸

1954: The Indian government creates the Department of Atomic Energy (DAE), which takes over the execution of Atomic Energy Commission (AEC) policies.²⁹

1955: Britain provides India with six kilograms of enriched uranium fuel rods, detailed engineering drawings, and other technical data for the construction of a "swimming pool" type research reactor.³⁰ Members of the US Joint Committee on Atomic Energy visit India to promote the expansion of peaceful applications of atomic energy.³¹ The Atomic Energy Commission of the United States agrees to sell ten tons of heavy water to India for use in the nuclear research reactor under construction at Trombay.³²

1956: Canada agrees to supply India with half the initial uranium fuel required for the CIRUS research reactor,³³ and the United States agrees to sell 18.9 tons of heavy water for the reactor.³⁴

October 6, 1961: India signs an agreement to cooperate in the peaceful uses of atomic energy with the Soviet Union.³⁵

September 21, 1962: The Indian government enacts the Atomic Energy Act of 1962, which allows for enhanced secrecy and mandates central governmental control over atomic energy.³⁶

August 8, 1963: The Agreement for Cooperation Between the Government of the United States and the Government of India Concerning the Civil Uses of Atomic Energy is signed. The United States will supply two 200MW reactors. In exchange, India agrees to only use enriched uranium fuel provided by the United States and to allow the International Atomic Energy Agency (IAEA) to verify that the fuel at this facility is not diverted from peaceful use.³⁷

1963: India concludes cooperation agreements on the peaceful uses of nuclear energy with Denmark and Poland.³⁸

October 16, 1964: China conducts a test of a nuclear weapon. Indian Prime Minister Shastri declares that the test threatens world peace.³⁹

September 22, 1965: The day before the UN cease-fire between India and Pakistan takes effect, numerous members of the Indian Parliament from various parties write a letter to the prime minister to change the state's official policy on nuclear weapons.⁴⁰

December 1966: The United States, India, and the International Atomic Energy Agency (IAEA) sign an agreement allowing the United States to supply a small amount of plutonium to India for research purposes.⁴¹

October 6, 1967: India's Defense Minister Swaran Singh announces before the UN General Assembly that India will not sign the Nuclear Non-Proliferation Treaty (NPT) because, "while the Government of India continues to be in favor of the nonproliferation of nuclear weapons, it is equally strongly in favor of the proliferation of nuclear technology for peaceful purposes, as an essential means by which the developing countries can benefit from the best advances of science an technology in this field."⁴²

May 18, 1974: India conducts a nuclear test at Pokhran in the Rajasthan desert. The Indian Government declares it as "a peaceful nuclear explosion experiment" and states that India has "no intention of producing nuclear weapons."⁴³

May 19, 1974: Pakistan's Prime Minister Zulfikar Ali Bhutto declares that the test is a "fateful development" and that Pakistan is "determined not to be intimidated" and would never fall prey to "nuclear blackmail" by India.⁴⁴

1978: US Congress passes the Nuclear Non-Proliferation Act which prohibits nuclear trade with states that have not placed all reactors under full-scope safeguards. The United States stops giving India nuclear assistance.

1983: India starts an Integrated Guided Missile Program (IGMP) to develop five missile systems.

1989: William H. Webster, director of the CIA, testifies before the Senate Governmental Affairs Committee that "indicators that tell us India is interested in thermonuclear weapons capability."⁴⁵

June 3, 1994: India tests its Prithvi medium-range missile.

1994: India acquires delivery capability.

April 8, 1998: Prime Minister Vajpayee authorizes nuclear tests two days after the Ghauri missile test-firing in Pakistan.⁴⁶

May 11, 1998: India tests three devices at the Pokhran underground testing site.

May 13, 1998: Two more nuclear tests follow. The United States imposes sanctions.

September 2001: The United States lifts sanctions on India and Pakistan in a move that is seen as a reward for their support for the US-led anti-terror campaign.

September 2008: The Nuclear Suppliers Group (NSG) removed the ban on India's participation in international nuclear trade.⁴⁷

October 2, 2008: India signs an agreement with the United States, which lifts a three-decade US moratorium on nuclear trade with India by providing assistance to India's civilian nuclear energy program and expanding US-Indian cooperation in energy and satellite technology.

July 27, 2009: India launches its first nuclear-powered submarine.

Current issues

India and Pakistan continue to be regional rivals, with the possibility of conflict always in the background. For example, on December 13, 2001 after a terrorist attack on the Indian Parliament, India deployed forces along the border with Pakistan. In July 2009, Pakistani officials called India's launch of nuclear-powered submarine "detrimental to regional peace and stability,"⁴⁸ raising concerns over reviving the arms race in the region.

After years of isolating India because of its nuclear program, the United States moved toward closer ties in 2005. With US encouragement, in September 2008, the Nuclear Suppliers Group (NSG) removed the ban on India's participation in international nuclear trade.⁴⁹ Subsequent to the September 2008 NSG waiver, India has received regular supplies from French and Russian companies.⁵⁰ In October 2008, after the approval by the US Congress, India and the United States signed a bilateral "123" agreement, which lifted a three-decade U.S. moratorium on nuclear trade with India by providing US assistance to India's civilian nuclear energy program and expanding US-Indian cooperation in energy and satellite technology.⁵¹

Proponents of the agreement have argued that it would bring India closer to the United States and allow the two countries to closely cooperate in "fighting terrorism, spreading democracy, and preventing the domination of Asia by a single power."⁵² However, US assistance may also benefit India's nuclear weapons program, since the country could use the imported safeguarded nuclear fuel to feed its civilian energy program while diverting its own nuclear fuel to weapons production, just had been happening right up to its first nuclear weapons test in 1974. Moreover, the deal may have a detrimental impact on global nonproliferation efforts as it serves as yet another example of double standards and sends mixed messages to nuclear have-nots. Notably, the agreement has already led to Pakistan's seeking a similar agreement for itself. In addition, the US-Indian deal could lead other nuclear suppliers to bend the rules so they can find new markets for their own atomic technology. So far, the agreement has failed to benefit American businesses as their competitors from Russia and France are getting ahead due to less stringent export-licensing requirements.

Recommendations

Engage India in the global effort toward reduction of nuclear weapons.

India's prior record as a disarmament advocate and its geographical position next to Pakistan, China, and Myanmar (which is suspected of importing sensitive nuclear technology from North

Korea) speaks to India's significant potential to contribute to curbing nuclear proliferation. As the country to have introduced the proposals leading to the NPT and CTBT,⁵³ India should be actively engaged in the global effort toward reduction of nuclear weapons alongside the United States and Russia. New Delhi is particularly well qualified to address the concerns of the member states of the Non-Aligned Movement, which is currently left out of the global disarmament effort and strongly opposes many US policy initiatives.

Avoid favoritism and double standards.

US partiality toward India could easily spark the dangerous nuclear rivalry between India and Pakistan as well as between India and China. Deals like the "123" agreement encourage Pakistan to go elsewhere – for example, to China or Russia – for similar terms. The United States should apply equal standards to all states and avoid bilateral agreements of the kind that it would not conclude with other states on security grounds.

Normalize India's relationship with Pakistan.

Improving the relationship between Islamabad and New Delhi will stabilize the volatile region and help avoid the growth of India's nuclear arsenal. The international community should continue to support the ongoing Indian-Pakistani effort to resolve the Kashmir issue⁵⁴ and avoid creating an impression that one or the other country gets preferential treatment.

Address proliferation concerns in Myanmar (Burma).

In August 2009, the Indian military intercepted a North Korean ship traveling to Myanmar (Burma).⁵⁵ India efficiently applied Resolution 1874, which calls on states to inspect North Korean vessels.⁵⁶ In the face of increasing concerns that North Korea may be transferring nuclear technology to Myanmar,⁵⁷ India should become even more involved in monitoring developments along its borders and deciphering the Myanmar's nuclear intentions due to India's responsibility as a nuclear weapons state.

Take into consideration India's arguments about the CTBT.

Despite promoting a test ban treaty for decades, in September 1996 India voted against the UN General Assembly resolution endorsing the CTBT, objecting to the lack of provision for universal nuclear disarmament "within a time-bound framework."⁵⁸ India also demanded that the treaty ban laboratory simulations and opposed the provision in Article XIV of the treaty that requires India's ratification for the treaty to enter into force.⁵⁹ While ratification of a state possessing nuclear weapons is a reasonable requirement and cannot be waived, India's other suggestions – establishing a time-bound framework for nuclear disarmament in particular – should be taken into consideration. Having a timeframe for global nuclear disarmament would make it easier to monitor progress and ensure that nuclear weapons states members of the NPT act on their commitments to disarm.

Encourage India to limit its fissile material production and reduce its nuclear arsenal

The recent US-Indian nuclear deal does not require India to cap or limit its fissile material production or restrict the number of nuclear weapons it plans to produce. At a time when nearly all the major nuclear powers are moving to limit their production, the international community should urge India to follow suit. Further assistance to New Delhi's civilian nuclear program

should be made contingent upon its willingness to cease nuclear weapons production. Moreover, additional measures must be implemented to ensure that a real barrier exists between India's military and civilian nuclear programs.

¹ Muchkund Dubey, "President Obama's Initiative for Achieving a Nuclear Weapons-Free World," *Mainstream*, Vol XLVII, No 22, May 16, 2009.

² Resolutions Presented by India on 7 October 1948 at the Third Session of U.N. General Assembly, Document A/C, 1/315. Cited in Arundhati Ghose, "Negotiating the CTBT: India's security concerns and nuclear disarmament," *Journal of International Affairs*, 0022197X, Summer97, Vol. 51, Issue 1.

³ Shyam Bhatia, *India's Nuclear Bomb* (Ghaziabad: Vikas, 1979), p. 45. Cited in India: Nuclear Chronology, NTI, http://www.nti.org/e_research/profiles/India/Nuclear/chronology_1932_1949.html. Accessed September 2, 2009.

⁴ Jaswant Singh, "Against Nuclear Apartheid," *Foreign Affairs*, Vol. 77 No. 5 (Sep. / Oct. 1998), pp. 41-52.

⁵ Rajiv Gandhi's address to the third Special Session on Disarmament, UN General Assembly in June 1988.

⁶ David J Creasman, "The Evolution of India's Nuclear Program: Implications for the United States," Monograph, May 2008, School of Advanced Military Studies, p. 12.

⁷ Homi Sethna, "Opening the Door to Nuclear Development," *Atoms for Peace*, p. 102. Cited in Weiss, 44.

⁸ M.V. Ramana. "Nuclear Power in India: Failed Past, Dubious Future." *Gauging U.S.-Indian Strategic Cooperation*. (Carlisle: Strategic Studies Institute. 2007). 76.

⁹ David J Creasman, "The Evolution of India's Nuclear Program: Implications for the United States," Monograph, May 2008, School of Advanced Military Studies, p. 16.

¹⁰ Weiss, 44.

¹¹ J. A. Yager, ed., *Nonproliferation and US Foreign Policy* (Washington, DC, Brookings Institution, 1980), p. 216. Cited in Weiss, 44.

¹² Pakistan refused to accept the accession of the Muslim-majority state of Kashmir to India, which resulted in armed conflict in 1948. India, however, succeeded in retaining control over most of the state's territory. India and Pakistan have since rejected each other's authority over Kashmir, and a Line of Control, instead of an international boundary, divides Indian- and Pakistani-administered Kashmir. The dispute is ongoing, but discussions and confidence-building measures have led to decreased tensions since 2002.

¹³ K. Shankar Bajpai, "Untangling India and Pakistan," *Foreign Affairs*, Vol. 82, No. 3 (May - Jun., 2003), pp. 112-126.

¹⁴ George Perkovich. *India's Nuclear Bomb: The Impact on Global Proliferation*. (Berkeley: University of California Press, 1999), 16.

¹⁵ Joyce Battle. "India and Pakistan—On the Nuclear Threshold," *National Security Archive Electronic Briefing Book No. 6*. <http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB6/index.html>.

¹⁶ http://www.nti.org/e_research/profiles/India/Nuclear/index.html

¹⁷ From <http://www.fas.org/nuke/guide/india/nuke/>

¹⁸ William Webster, "Nuclear and Missile Proliferation," hearing before the Committee on Governmental Affairs, United States Senate, May 18, 1989 (Washington: Government Printing Office, 1990), p. 12. - In his testimony before the Senate, the Director of Central Intelligence asserts that India has been pursuing programs that indicate an interest in thermonuclear weapons capabilities.

¹⁹ George Perkovich, "Nuclear Proliferation," *Foreign Policy*, No. 112 (fall 1998), pp. 12-23: 16.

²⁰ Krishna M. Bhatta and Mahesh Mehta, the Bharatiya Janata Party, "Policy On Major Issues: Nuclear Issue," <http://nuclearweaponarchive.org/India/BJPPolicy.txt>. Accessed June 28, 2009.

²¹ The nuclear tests carried out at 3:45 pm on May 11th were claimed by the Indian government to be a simultaneous detonation of three different devices - a fission device with a yield of about 12 kilotons (KT), a thermonuclear device with a yield of about 43 KT, and a sub-kiloton device. The two tests carried out at 12:21 pm on May 13th were also detonated simultaneously with reported yields in the range of 0.2 to 0.6 KT. However, there is some controversy about these claims. Based on seismic data, U.S. government sources and independent experts estimated the yield of the so-called thermonuclear test in the range of 12-25 kilotons, as opposed to the 43-60 kiloton yield claimed by India. By late 1998 analysts at Lawrence Livermore National Laboratory had concluded that the India had attempted to detonate a thermonuclear device, but that the second stage of the two-stage bomb failed to ignite as planned. <http://www.fas.org/nuke/guide/india/nuke/>

²² The Indian tests drew immediate condemnation from the Clinton Administration, which said the United States was "deeply disappointed" and was reviewing trade and financial sanctions against India under American

nonproliferation laws; from other Western nations, including Britain, which voiced its "dismay" and Germany, which called the tests "a slap in the face" for 149 countries that have signed the treaty, and from Kofi Annan, the United Nations Secretary General, who issued a statement expressing his "deep regret." John F. Burns, "India Sets 3 Nuclear Blasts, Defying a Worldwide Ban; Tests Bring A Sharp Outcry," *New York Times*, May 12, 1998.

²³ Ibid.

²⁴ Norris, Robert S.; Hans M. Kristensen. "Indian nuclear forces, 2008". *Bulletin of the Atomic Scientists*, Vol. 64 No. 5, pp. 38-40.

²⁵ http://www.indianembassy.org/policy/Disarmament/note_india_disarmament.htm

²⁶ G. Venkataraman, Bhabha and His Magnificent Obsessions (Hyderabad: Universities Press India, 1994), p. 145. Cited in http://www.nti.org/e_research/profiles/india/nuclear/2296_6267.html

²⁷ *Constituent Assembly of India (Legislative Debates)*, 2d sess., vol. 5, April 6, 1948, pp. 3315, 3328, 3333-34, cited in George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley: University of California Press, 1999), p. 18.

²⁸ Shyam Bhatia, *India's Nuclear Bomb* (Ghaziabad: Vikas, 1979), p. 88; Itty Abraham, *The Making of the Indian Atomic Bomb* (London: Zed Books, 1998), pp. 78-81. Cited in http://www.nti.org/e_research/profiles/india/nuclear/2296_6267.html

²⁹ Robert S. Anderson, "Building Scientific Institutions in India: Saha and Bhabha," Occasional Paper No. 11, Centre for Developing-Area Studies, McGill University, Montreal, Canada, 1975, p. 40.

³⁰ Itty Abraham, *The Making of the Indian Atomic Bomb* (London: Zed Books, 1998), pp. 84-85. Cited in http://www.nti.org/e_research/profiles/india/nuclear/2296_6267.html

³¹ —Roberta Wohlstetter, "The Buddha Smiles:" *Absent-Minded Peaceful Aid and the Indian Bomb* (Los Angeles: Pan Heuristics, 1977), p. 32; K.K. Pathak, *Nuclear Policy of India* (New Delhi: Gitanjali Prakashan, 1980), p. 49; George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley, CA: University of California Press, 1999), p. 29. Cited in http://www.nti.org/e_research/profiles/india/nuclear/2296_6267.html

³² Shyam Bhatia, *India's Nuclear Bomb* (Ghaziabad: Vikas, 1979), pp. 89-90. Cited in http://www.nti.org/e_research/profiles/india/nuclear/2296_6267.html

³³ Brahma Chellaney, *Nuclear Proliferation: The US-India Conflict* (New Delhi: Orient Longman, 1993), p. 6. Cited in http://www.nti.org/e_research/profiles/india/nuclear/2296_6267.html

³⁴ Brahma Chellaney, *Nuclear Proliferation: The US-India Conflict* (New Delhi: Orient Longman, 1993), p. 6. Cited in http://www.nti.org/e_research/profiles/India/Nuclear/2296_2345.html

³⁵ A. Appadorai and M.S. Rajan, *India's Foreign Policy and Relations* (New Delhi: South Asian Publishers Private, 1985), p. 273. Cited in http://www.nti.org/e_research/profiles/india/nuclear/2296_6267.html

³⁶ Department of Atomic Energy, Government of India, "Brief Annual Report: 1962-63," p. 1; K.K. Pathak, *Nuclear Policy of India* (New Delhi: Gitanjali Prakashan, 1980), p. 80. Cited in http://www.nti.org/e_research/profiles/india/nuclear/2296_6267.html

³⁷ Agreement for Cooperation between the Government of the United States of America and the Government of India Concerning the Civil Uses of Atomic Energy, signed in Washington, 8 August 1963, and entered into force 25 October 1963, Article VII, reprinted in Brahma Chellaney, *Nuclear Proliferation: The US-India Conflict* (New Delhi: Orient Longman, 1993), pp. 26, 318-327. Cited in http://www.nti.org/e_research/profiles/india/nuclear/2296_6267.html

³⁸ "Brief Annual Report: 1963-64," *Department of Atomic Energy, Government of India*, p. 25. Cited in http://www.nti.org/e_research/profiles/india/nuclear/2296_6267.html

³⁹ US Embassy (New Delhi) to State Department, cable no. 1203, 16 October 1964, p. 1, Nuclear Non-Proliferation Policy FOIA files, India, National Security Archive, Washington, DC, in George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley, CA: University of California Press, 1999), p. 490.

⁴⁰ Hari Ram Gupta, *India-Pakistan War, 1965*, vol. 1, p. 20, in George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley, CA: University of California Press, 1999), p. 103; MP letter quoted in G.G. Mirchandani, *India's Nuclear Dilemma*, p. 39.

⁴¹ George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley, CA: University of California Press, 1999), p. 131.

⁴² G.G. Mirchandani, *India's Nuclear Dilemma* (New Delhi: Popular Book Services, 1968), p. 149.

⁴³ George Perkovich, "India Explodes A 'Peaceful' Nuclear Device," *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley, CA: The University of California Press, 1999) p.178.

⁴⁴ George Perkovich, "India Explodes A 'Peaceful' Nuclear Device," *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley, CA: The University of California Press, 1999) p.185.

⁴⁵ William Webster, "Nuclear and Missile Proliferation," hearing before the Committee on Governmental Affairs, United States Senate, May 18, 1989 (Washington: Government Printing Office, 1990), p. 12. - In his testimony

before the Senate, the Director of Central Intelligence asserts that India has been pursuing programs that indicate an interest in thermonuclear weapons capabilities.

⁴⁶ <http://www.fas.org/nuke/guide/india/nuke/>

⁴⁷ "Nuclear Verification: The Conclusion of Safeguards Agreements and Additional Protocols," (Agreement Text), International Atomic Energy Agency, July 9, 2008, www.isis-online.org.

⁴⁸ "India submarine 'threatens peace,'" *BBC News*, July 28, 2009.

http://news.bbc.co.uk/2/hi/south_asia/8171715.stm.

⁴⁹ "Nuclear Verification: The Conclusion of Safeguards Agreements and Additional Protocols," (Agreement Text), International Atomic Energy Agency, July 9, 2008, www.isis-online.org.

⁵⁰ "India's 1st N-Fuel Supply This Week," *The Asian Age*, March 31, 2009.

⁵¹ Esther Pan and Jayshree Bajoria, "The U.S.-India Nuclear Deal," Council on Foreign Relations, October 2, 2008, <http://www.cfr.org/publication/9663/>.

⁵² *Ibid.*

⁵³ N. D. Jayaprakash, "Nuclear Disarmament and India," *Economic and Political Weekly*, Vol. 35, No. 7 (Feb. 12-18, 2000), pp. 525-533.

⁵⁴ Leonard Weiss, "It's Déjà vu all over again," *Bulletin of the Atomic Scientists*, May/June 2004, pp. 52-59: 59.

⁵⁵ India Inspects North Korea Ship for Nuclear Material, Reuters, August 10, 2009

⁵⁶ "Security Council, Acting Unanimously, Condemns In Strongest Terms Democratic People's Republic Of Korea Nuclear Test, Toughens Sanctions," United Nations, Security Council, 6141st Meeting,

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⁵⁷ Nicholas Kristof, "Suspect Building in Burma," *New York Times*, August 8, 2009.

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⁵⁸ "Negotiating the CTBT: India's Security Concerns and Nuclear Disarmament," *Journal of International Affairs*, Summer, 1997, 51, no. 1. 0.

⁵⁹ "Comprehensive Test Ban Treaty," Embassy of India, Policy Statements,

http://www.indianembassy.org/policy/CTBT/ctbt_index.htm