Report:

NUCLEAR TESTING IN SOUTH ASIA AND THE CTBT

by Andrew Koch

Andrew Koch is a Senior Research Associate at the Center for Nonproliferation Studies, Monterey Institute of International Studies.

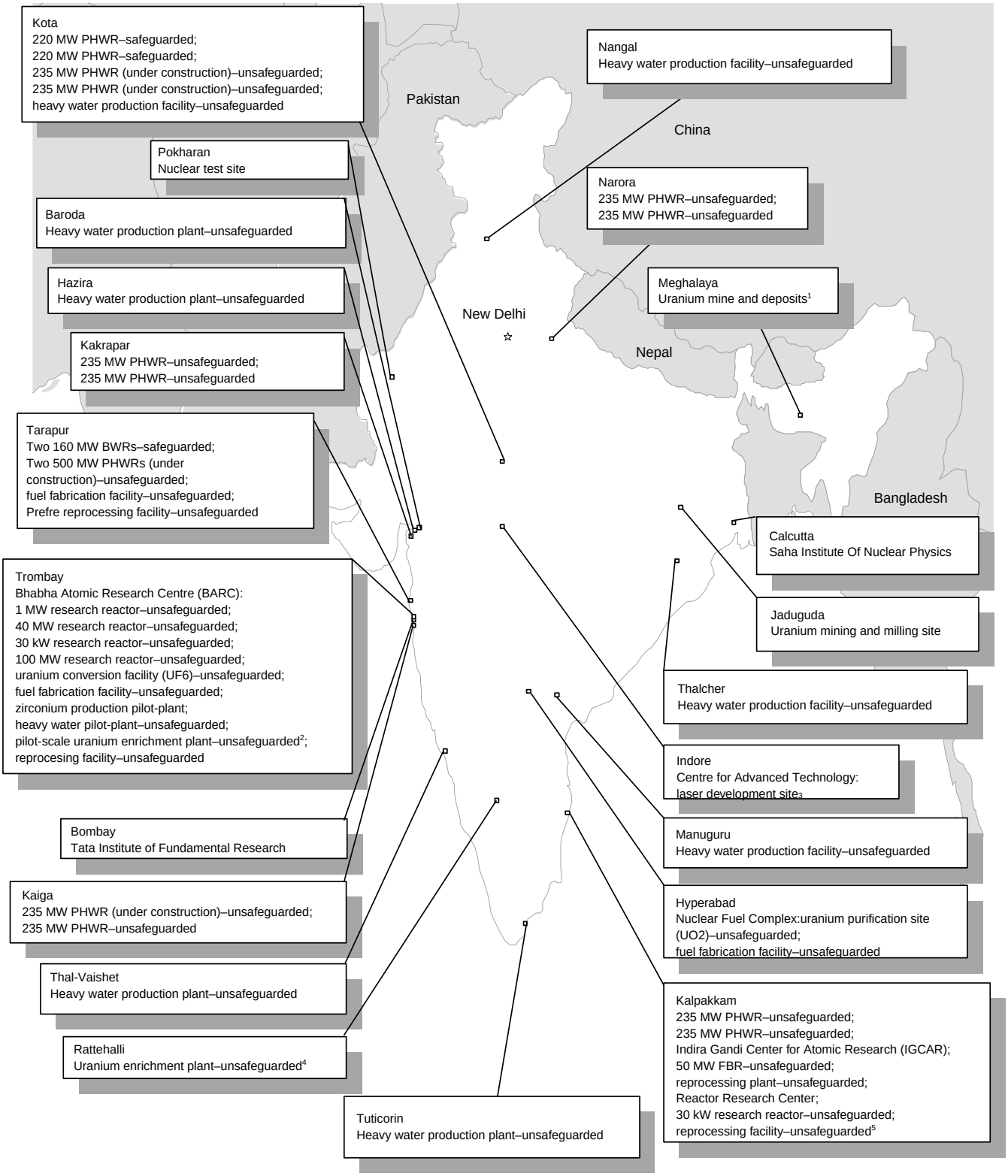
The accession of Bharatiya Janata Party (BJP) head Atal Bihari Vajpayee to Prime Minister of India in May 1996 renewed the possibility that India could conduct a nuclear test and upset the fragile nuclear balance in South Asia, as well as ongoing negotiations for a Comprehensive Test Ban Treaty (CTBT). The Hindu-nationalist BJP won the largest share of parliamentary seats in India's April-May 1996 national elections and was asked by Indian President Shankar Dayal Sharma to form a government. Although the BJP was not able to form a governing coalition, their short-lived administration lead to fears that India would weaponize its "nuclear option." What concerns diplomats in the United States and Pakistan is that the BJP has repeatedly called for India to conduct a nuclear test and to declare itself a nuclear power. With the BJP on the threshold of gaining power, the question of India's nuclear intentions has resurfaced. This report examines the likelihood of an Indian nuclear test, the political and security factors driving that possibility, and the possible repercussions of such an outcome. The report includes maps of selected nuclear sites in India and Pakistan in order to illustrate the size and scope of the "nuclear dilemma" in South Asia.

CAUSES FOR CONCERN

Fears of an Indian nuclear test center around December 1995 reports in the U.S. media that India was preparing to conduct a nuclear test. U.S. intelligence sources reportedly stated that reconnaissance satellites had detected increased activity at Pokharan (see Figure 1), the site of India's 1974 nuclear test, indicating preparations for a nuclear explosion.[1] The activity included efforts to clear out a subterranean shaft for testing nuclear weapons and "possible preparations for instrumentation" to ascertain the results of that test.[2] Keeping with India's long-held policy of nuclear ambiguity, the Indian government originally denied the reports and then called them "totally speculative."[3] Indian Foreign Ministry spokesman Arif Khan said that the activities at Pokharan were probably "routine military exercises,"[4] while Indian Foreign Minister Pranab Mukherjee denied that India intended to conduct a nuclear test.[5]

Rumors of a possible test were linked by Pakistani observers to India's 15th test of the potentially nuclear-capable Prithvi missile on January 27, 1996, at the Interim Test Range in Chandipur.[6] Indian defense officials added on January 16, 1996, that India would not only deploy the Prithvi,[7] which is expected to occur by mid-1996, but that serial production of the missile had al-

Selected Indian Nuclear Facilities



Sources: CNS Databases

Figure 1

Figure 1 Notes

[1] Several locations have been named as uranium mining sites in this province. See *The Times of India*, May 5, 1993, p. 21; in Proliferation Issues (July 12, 1993), p. 11; *Canberra Times*, "Tribes Withdraw Protest Against Uranium Mining," August 23, 1993, p. 8.
[2] Manoj Joshi, "India's Nuclear Dilemma," *The Hindu* (International Edition), November 3, 1990, p. 9; Leonard Spector, Mark McDonough, with Evan Medeiros, *Tracking Nuclear Proliferation: A Guide In Maps And Charts* (Washington, D.C.: Carnegie Endowment For International Peace, 1995), p. 93.
[3] India is said to have developed a laser trigger for thermonuclear devices here. India is also said to be developing copper vapor and nitrogen lasers for use in a uranium enrichment program. See "India To Test Run Thermonuclear Fusion Device," *Defense And Foreign Affairs Weekly*, May 14-20, 1990, p. 1; *Patriot*, August 31, 1991, p. 8; in Proliferation Issues (October 29, 1991), p. 33; Mark Hibbs, "Second Indian Enrichment Facility Using Centrifuges Is Operational," *Nucleonics Week*, March 26, 1992, pp. 9-10.
[4] "India Has A Secret Centrifuge Enrichment Complex," *Nuclear News*, February 1989, p. 90; Brahma Chellay, UPI, November 2, 1992; in "U.S. Launching Major South Asian Nuclear Initiative," Executive News Service, November 2, 1992; Hibbs, pp. 9-10.
[5] This reprocessing facility was "cold" commissioned in March 1996 and is expected to begin "hot" operations by late 1996. See "Third Reprocessing Plant Opened At Kalpakkam," *Nuclear News*, May 1996, p. 43; "Third Reprocessing Plant Starts Up," *Nuclear Engineering International*, May 1996, p. 8.

ready begun.[8] The Indian government has called the Prithvi a "tactical battlefield missile,"[9] but denies any intention of arming it with a nuclear warhead.[10] The Prithvi, with a range of up to 250 kilometers (km), is capable of targeting most of Pakistan's major cities, but does not have sufficient range to reach China's population centers.

INDIA'S MOTIVATIONS

Several international and domestic factors seem to be driving India's nuclear weapons policy. Overall, Indian policymakers focus on the Chinese threat, with Pakistan in a secondary role. At present, China's nuclear and missile capabilities outstrip those of India, which has neither the nuclear fire-power nor the delivery systems to pose a serious threat to the Chinese heartland. China, on the other hand, possesses the ability to wreak intolerable devastation on India at all levels of nuclear escalation. If these security considerations are then extrapolated to include the ramifications of a CTBT entering into force, India could find itself in a permanently inferior position vis-a-vis China and without a credible minimal nuclear deterrent. Such an outcome could prove intolerable for India.

With the major nuclear powers now pushing for a CTBT, India is being forced by strategic considerations to reassess its past decision not to conduct any further nuclear tests after its 1974 "peaceful nuclear explosion." For India to modernize its nuclear arsenal, it must work on miniaturizing the nuclear warhead for deployment on ballistic missiles and upgrade its destructive power by developing a thermonuclear device. For this to occur, India requires data only available through a nuclear test. Access to data is particularly important for India because evidence suggests that there was uncertainty regarding the yield and reliability of the nuclear device used in the 1974 Pokharan test.[11] Furthermore, the 1974 test was a small (12 to 15 kiloton yield) fission device, not the hydrogen or "boosted" nuclear weapon U.S. intelligence experts suspect India is developing.[12] This view is supported by Bhabha Atomic Research Centre (BARC) Director Dr. A. N. Prasad, who has said that nuclear tests are "vital to validate theoretical models and for improvement of the [Indian] nuclear device."[13]

Domestic factors have also had a large influence on India's nuclear policy. Faced by fierce pressure from the BJP to weaponize its "nuclear option" in the run-up to the April-May 1996 national elections, Prime Minister P.V. Narasimha Rao may have ordered the preparations at Pokharan in order to boost his domestic political popularity. By doing so, Rao may have been seeking to reap the domestic political benefits of appearing ready to conduct a nuclear test, or at least threatening to do so, without actually testing. An *India Today*-Marg poll conducted in December 1995 showed that 62 percent of Indians approved of nuclear testing by India "to develop its nuclear-weapon capability."[14] Of those approving, 54 percent said they favored nuclear development even in the face of economic sanctions, while 68 percent said India should not forfeit its nuclear option unless other nations do the same. These feelings were exacerbated by the onetime exemption to the Pressler Amendment (the so-called "Brown Amendment") passed on September 22, 1995 by the U.S. Congress, which provides for the transfer of $368 million in previously frozen U.S. military equipment and spare parts to Pakistan.

PAKISTAN'S INITIAL RESPONSE

Selected Pakistani Nuclear Facilities

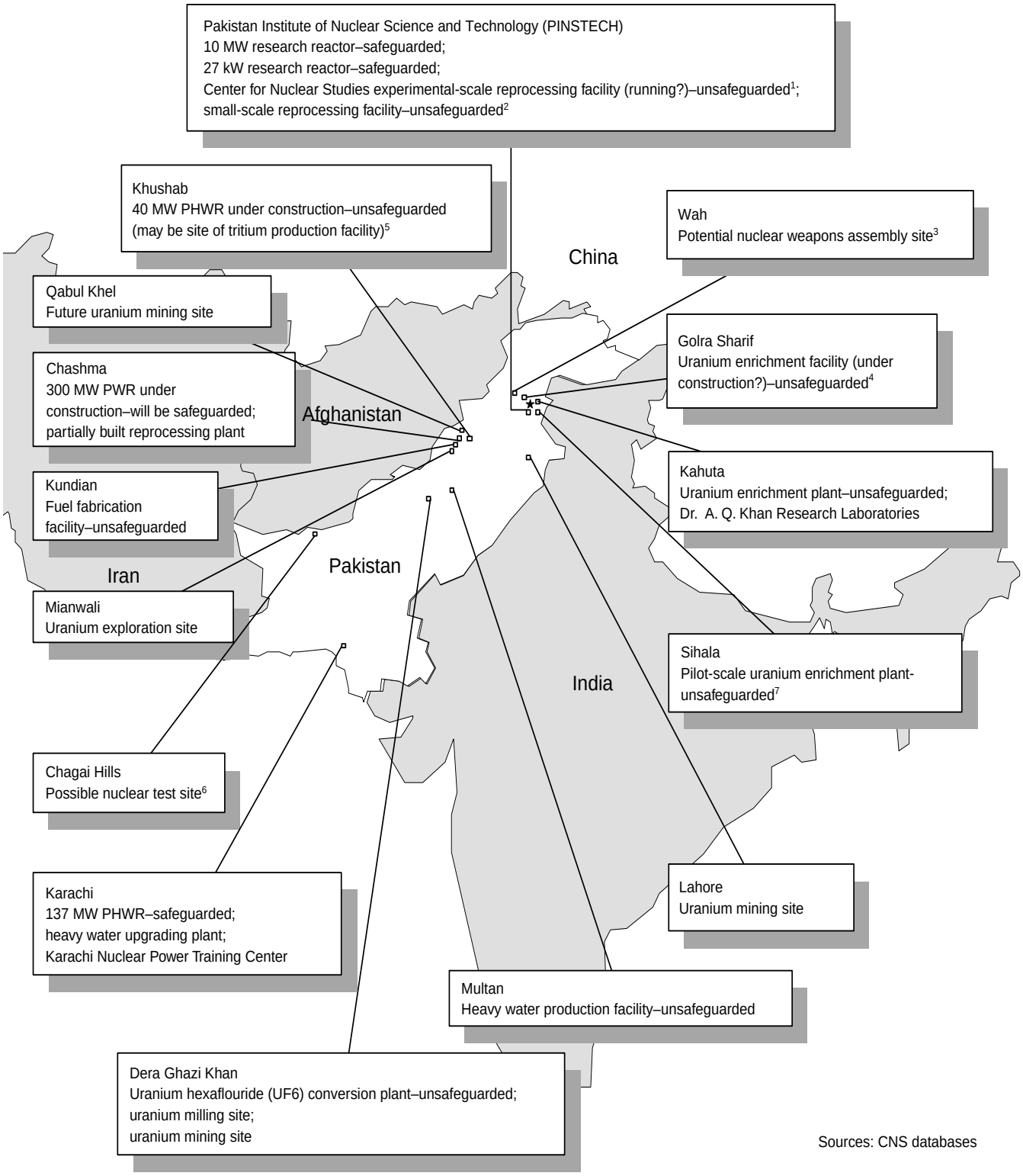


Figure 2

Figure 2 Notes

[1] Called "New Labs", West German intelligence sources were quoted as saying this reprocessing facility conducted "hot tests" using spent fuel diverted from the Karachi nuclear power plant. It is not known if the facility is still in operation. See "Hot Laboratories," *Der Spiegel*, February 27, 1989, p. 113; in JPRS-TND-89-006 (March 28, 1989), p. 33; *Der Spiegel*, June 26, 1989, pp. 87-89; in Nuclear Developments (July 7, 1989), pp. 39-40; U.S. Department Of State Memorandum, *The Pakistani Nuclear Program*, June 23, 1983, pp. 2-4; Indrani Banerjee, *Sunday*, April 24, 1993, pp. 34-38; in Proliferation Issues (May 18, 1993), p. 12.

[2] This facility uses a solvent extraction method. See U.S. Department Of State Memorandum, pp. 2-4; "Profile: Pakistan," *Nuclear Engineering International*, May 1991, pp. 52-54; Leonard Spector with Jacqueline Smith, *Nuclear Ambitions* (Boulder, Colorado: Westview Press, 1990), p. 15.

[3] If Pakistan were to exercise its "nuclear option", weaponization would likely occur at the military ordinance facility in Wah. See Marcus Warren, "Pakistan Nuclear Program At A 'Screwdriver Level'," *The Washington Times*, February 20, 1996, p. A1; Marcus Warren, "Foiled Smuggling Effort Heightens Nuclear Worries," *The Washington Times*, April 13, 1996, p. A8.

[4] In 1987, U.S. intelligence sources said satellite photography indicated that a uranium enrichment plant was being constructed at Golra. It is not clear, however, that the facility was ever completed or became operational. See Mark Hibbs, "Second Indian Enrichment Facility Using Centrifuges Is Operational," *Nucleonics Week*, March 26, 1992, pp. 9-10; David Albright, "Pakistan's Bomb: Out Of The Closet," *The Bulletin Of The Atomic Scientists*, July-August 1992, pp. 38-43.

[5] Pakistan imported a tritium extraction plant from West Germany in 1987 that is most likely located at the Khushab reactor. See Mark Hibbs, "German Firm's Exports Raise Concern About Pakistan's Nuclear Capabilities," *NuclearFuel*, March 6, 1989, pp. 13-14; Mark Hibbs, "Pakistan Rebuts Proliferation Charge, But Germans Step Up Investigation," *NuclearFuel*, April 3, 1989, pp. 6-7; "Pakistan Needs Help To Make Plutonium And Tritium," *The Risk Report*, July 1995, p. 9.

[6] R. Jeffrey Smith, "Pakistan Has Plans For Nuclear Blast, U.S. Officials Say," *The Washington Post*, March 6, 1996, p. 12; Tom Rhodes, "Pakistan Prepares Bomb Test," *The Times* (Internet edition), March 7, 1996; Reuter, March 6, 1996; in "Pakistan Dismisses Nuclear Test Plan Report," Executive News Service, March 6, 1996.

[7] Banerjee, pp. 34-38; Bal Krishna, *Hindustan Times*, January 2, 1994, p. 17; in JPRS-TND-93-003 (January 31, 1994), p. 16; Leonard Spector, Mark McDonough with Evan Medeiros, *Tracking Proliferation: A Guide In Maps and Charts* (Washington, D.C.: Carnegie Endowment For International Peace, 1995), p. 101.

Motivated by the need to alleviate Pakistan's nuclear and conventional military inferiority vis-a-vis India, Islamabad is under intense pressure to match any Indian military development. Pakistani Prime Minister Benazir Bhutto and other officials have stated repeatedly that if India were to conduct a nuclear test, they would be forced to "follow suit."[15] Pakistan's need to respond to an Indian test is even greater because, in the eyes of Indian nuclear scientists, Pakistan does not possess a credible nuclear weapon capability to act as a deterrent.[16] The Prithvi missile test and subsequent Indian statements that the missile will be deployed soon only add to insecurity in Islamabad.

Aside from security concerns, domestic political pressure would undoubtedly force Bhutto to order a Pakistani nuclear test. The military, the most powerful political force in Pakistan, would demand a response in kind to an Indian test, even in the face of U.S. opposition or threatened sanctions. Such a move would also be domestically popular. A Gallup poll taken in February 1996, indicated that 80 percent of Pakistanis support a Pakistani nuclear test, if India tests first.[17]

Evidence suggests that Pakistan is preparing for such a contingency. Pakistan hardened its stance vis-a-vis India following the December 1995 reports. On January 18, 1996, Bhutto said that Pakistan had achieved "parity" with India in its "capacity" to produce and deliver nuclear weapons.[18] Furthermore, U.S. intelligence experts said on March 5, 1996, that satellite photographs led them to the conclusion that Pakistan was preparing to conduct its first nuclear test at Chagai Hills (see Figure 2). Excavation of the Chagai mountain site in Baluchistan province included removal of debris from a shaft that was dug years ago. While U.S. officials do not believe a Pakistani nuclear test is either imminent or even likely, only a few days or weeks would be required to conclude preparations if a decision to test were made by Islamabad. On the missile side, Pakistan is likely to meet any deployment of the Prithvi, which it considers "Pakistan specific," with the deployment of Chinese-supplied M-11s. Pakistan is particularly sensitive about the Prithvi, and President Leghari has said that large-scale production of this missile would be "tantamount to deployment."[19]

U.S. RESPONSES TO INDIA AND PAKISTAN

The United States was initially successful in applying pressure on both India and Pakistan not to test, including threatening cessation of financial assistance.[20] U.S. State Department officials advised the Indian government in December 1995 that any nuclear test would force the United States to invoke economic sanctions. By law, the Clinton administration would have to enforce the

1994 Glenn Amendment, which mandates the cessation of all economic and military aid, bank loans, credits, and export licenses to any nation other than the five declared nuclear powers that conducts a nuclear test. Under the legislation, the United States would seek to deny any World Bank or other multilateral international loans to the offending country, and the Clinton administration would likely pressure other major shareholders, such as Japan and Germany, to follow suit.

Until the recent Indian elections, the U.S. government appeared confident that India, and by implication Pakistan, would not conduct a nuclear test. Arms Control and Disarmament Agency Director John Holum said on January 19, 1996, that Indian officials had allayed U.S. fears of a possible test in private meetings.[21] Equipment to monitor a possible test, however, has not been removed from Pokharan nor has the shaft at Pakistan's Chagai site been refilled.

POSSIBLE OUTCOMES AND THEIR IMPLICATIONS

Any change in the nuclear status quo is likely to be initiated by India, which perceives itself to be under pressure to test before the CTBT enters into force. While reporting the activity at Pokharan, U.S. intelligence officials were uncertain whether India's motivation is design-oriented (in which case a test could be years away) or political (in which case a test could occur at any time). If India were to test, Pakistan would follow suit and possibly declare itself a nuclear weapon state. The outcome of these events would impede efforts by the United States to secure a CTBT before the end of the year.

One possible scenario has India conducting a nuclear test while simultaneously agreeing to sign the CTBT. Under such a scenario, India would reap the military benefits of the test data while minimizing the political repercussions. India could argue that the test is not for weaponization purposes, but solely to keep open its nuclear option.[22] Pakistan's reaction would likely be to match India's test and then sign the CTBT once India does; Pakistan has a stated policy that it is willing to sign both the CTBT and the nuclear Non-Proliferation Treaty if India also signs. Under a worst case scenario, other states, such as Iran and Egypt, may reconsider their support not only for a CTBT but also for the nuclear nonproliferation regime if either country tests.

In the meantime, India, the first nation to champion a CTBT as far back as 1954,[23] has altered its position and now insists on including treaty language that calls for the eradication of all nuclear weapons within an agreed time frame. Indian Ambassador to the Conference on Disarmament Arundhati Ghose said: "To be meaningful, the treaty should be...linked through treaty language to the elimination of all nuclear weapons in a time-bound framework."[24] India, however, is willing to negotiate the actual time frame at a later date. In lieu of crossing the nuclear threshold, India is likely to continue to delay negotiations of a CTBT by demanding greater concessions from the nuclear weapon states. Without India's signature, however, Pakistan will not sign a CTBT, leaving the possibility that two of the three (Israel being the other) undeclared nuclear powers will remain outside the treaty.

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[1] Tim Weiner, "U.S. Suspects India Prepares For Nuclear Test," *The New York Times*, December 15, 1996, p. A6.
[2] R. Jeffrey Smith, "Possible Nuclear Arms Test By India Concerns U.S.," *The Washington Post*, December 16, 1996, p. A17.
[3] John Burns, "India Denies Atom-Test Plan But Then Turns Ambiguous," *The New York Times*, December 16, 1996, p. 4.
[4] *Ibid.*
[5] AFP, December 19, 1995; in FBIS-NES-95-243 (December 19, 1995).
[6] Farhan Bokhari and Vivek Raghuvanshi, "Pakistan Vows Response To New India Missile Threat," *Defense News*, February 5-11, 1996, p. 18.
[7] Charles Aldinger, Reuter, January 16, 1996; "U.S. Urges India Not To Deploy New Missile," Executive News Service, January 16, 1996.
[8] Jawal Naqvi, Reuter, January 16, 1996; "India To Deploy Prithvi Missile, Plans New Test," Executive News Service, January 16, 1996.
[9] "Prithvi Deployment Will Test Control Rules," *Flight International*, November 8-14, 1995, p. 20.
[10] Bokhari and Raghuvanshi, p. 18.
[11] W. P. S. Sidhu, "India's Nuclear Tests," *Jane's Intelligence Review*, April 1996, p. 170.
[12] Smith, p. A17.
[13] Raj Chengappa, "Testing Times: India's Nuclear Policy," *India Today*, December 31, 1995, p. 50.
[14] *Ibid*., pp. 48-49.
[15] Ahmed Rashid, "Bhutto Warns India Over Bomb Test," *The Daily Telegraph*, January 6, 1996, p. 12; in FBIS-NES-96-008 (January 6, 1996).
[16] W.P.S. Sidhu, "Pakistan's Bomb: A Quest For Credibility," *Jane's Intelligence Review*, June 1996, pp. 278-280.
[17] "Nuclear Test And Popular Support," *Jarasat* (Karachi), February 2, 1996, p. 4; in FBIS-TAC-96-002 (February 2, 1996).
[18] P. S. Suryanarayana, "Pakistan Claims Parity With India In Nuclear Domain," *The Hindu*, January 20, 1996, p. 13.
[19] "Pakistan Sends Warning Of Response To Indian Missile," *The International Herald Tribune*, February 1, 1996.
[20] Kenneth Cooper, "Indian-Pakistani Cold War Shifts To Nuclear Matchup," *The Washington Post*, April 5, 1996, p. A21.
[21] Sid Balman, UPI, January 19, 1996; "India Assures U.S. On Nuke Test," Executive News Service, January 19, 1996.

[22] W.P.S. Sidhu, "India's Nuclear Tests," p. 170.
[23] Prafal Bidwai and Achin Vanaik, "A Case Of Jitters? The CTBT Debate In India." *INESAP-Information Bulletin*, February 1996, p. 14.
[24] "India Links Test Ban To End Of All Nukes," *The Washington Times*, January 2, 1996, p. 14.