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# **NUCLEAR SOUTH ASIA**

A GUIDE TO INDIA, PAKISTAN, AND THE BOMB

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**CHAPTER 4 GUIDE  
THE GLOBAL NUCLEAR ORDER**

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## **ABOUT NUCLEAR LEARNING**

*Nuclear Learning* is an online initiative produced by the [Stimson Center's South Asia Program](#) to sharpen strategic analysts' understanding of nuclear programs, doctrines, and postures in South Asia and beyond. *Nuclear Learning* pursues this mission by making diverse viewpoints accessible via open online courses, nurturing vibrant communities of "nuclear learners" on social media, and providing opportunities for students to engage with experts in the field.

The first *Nuclear Learning* course—"Nuclear South Asia: A Guide to India, Pakistan, and the Bomb"—is available for free at [www.nuclearlearning.org](http://www.nuclearlearning.org). "Nuclear South Asia" is the most comprehensive collection of perspectives on India and Pakistan's nuclear trajectories available online. It includes 8.5 hours of video content and features lectures from more than 80 leading scholars and practitioners, including former senior diplomats and military officers. In addition to lectures, the course includes quizzes, recommended readings, and a pass/fail final exam.

Upon completing "Nuclear South Asia," students will be able to:

- Understand the factors motivating India and Pakistan's nuclear programs, doctrines, and postures;
- Assess the impact of emerging policies and capabilities on deterrence stability;
- Describe India and Pakistan's positions vis-à-vis the Nuclear Non-Proliferation Treaty (NPT) and other elements of the global nuclear order;
- Analyze crisis episodes, management challenges, and confidence-building efforts on the Subcontinent; and
- Propose innovative solutions to reduce nuclear competition and dangers in South Asia.

Students have the option of earning a Stimson-issued certificate, an important credential for academic and professional advancement. To earn a certificate, students must watch the video lessons, complete the quizzes and surveys, and pass a final exam.

Due to high demand, a second *Nuclear Learning* course on conventional and nuclear deterrence in Southern Asia is under development for release in 2019.

## **LEARNING OBJECTIVES**

In this chapter, students will learn about basic models of nuclear proliferation that outline why states choose to proliferate, the dangers of horizontal and vertical proliferation, and the measures that have been taken within the global nuclear in order to reduce proliferation. Students will gain familiarity with key international institutions, regimes, and agreements regarding nonproliferation, including the Nuclear Non-Proliferation Treaty (NPT), the Comprehensive Nuclear Test-Ban Treaty (CTBT), the Fissile Material Cut-Off Treaty (FMCT), and the Nuclear Suppliers Group (NSG). After completing this chapter, students will understand the relevance of these elements of the global nuclear order as they relate to South Asia. Students will benefit from a diverse range of perspectives about the Indo-U.S. civil nuclear deal, past proliferation incidents such as the A.Q. Khan Network, and the specific challenges India and Pakistan face in entering the global nuclear order.

## **KEY TERMS**

Below is a list of definitions of the key terms from this chapter.

**A.Q. Khan Network:** A non-state proliferation network managed by Pakistani scientist Abdul Qadeer Khan that facilitated the illicit transfer of nuclear equipment, enrichment technology, and warhead designs to countries seeking to advance their nuclear programs, including Iran, North Korea, and Libya.<sup>1</sup>

**Atomic Energy Act (AEA):** The foundational U.S. law for regulating, developing, and disposing nuclear materials and facilities, passed in 1946 and significantly amended in 1954.<sup>2</sup> The law relates to both civilian and military uses of nuclear materials and established the Atomic Energy Commission, which oversees peacetime development of nuclear technology.

**Civil Liability for Nuclear Damage Act:** An act passed by the Indian Parliament in 2010 that provides civil liability for potential nuclear-related damages.<sup>3</sup> It was a final step in solidifying the Indo-U.S. civil nuclear deal and allowed India to join the Vienna Convention on Civil Liability Damage.

**Civilian Nuclear Program:** A nuclear program geared towards harnessing nuclear power for peaceful purposes, including supplying energy to civilian and commercial uses and conducting scientific research.

**Comprehensive Nuclear Test-Ban Treaty (CTBT):** An international treaty adopted by the UN General Assembly in 1996 that prohibits the testing of all nuclear explosives.<sup>4</sup> As of 2017, 166 countries have ratified the treaty. While China and the United States have signed the treaty, they have not ratified it. India and Pakistan have neither signed nor ratified the treaty.

**Fissile Material Cut-Off Treaty (FMCT):** A proposed international agreement that would ban the production of highly enriched uranium and plutonium. The treaty has not been negotiated nor finalized by the Conference on Disarmament, which acts as the international authority of multilateral disarmament efforts.<sup>5</sup>

**Horizontal Proliferation:** The spread of nuclear weapons from nuclear states to non-nuclear states or non-state actors.<sup>6</sup>

**Hyde Act:** An amendment to the Atomic Energy Act, which allowed the U.S. to conclude the “123 Agreement” and exempt some requirements of the AEA to commence nuclear cooperation with India.<sup>7</sup>

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<sup>1</sup> Christopher Clary, “The A.Q. Khan Network: Causes and Implications.” Master's Thesis. Naval Postgraduate School, 2005. <https://fas.org/irp/eprint/clary.pdf>.

<sup>2</sup> “Nuclear Regulatory Legislation 112th Congress; 2nd Session,” NUREG-0980 (Washington, DC: United States Nuclear Regulatory Commission, September 2013).

<sup>3</sup> “Frequently Asked Questions and Answers on Civil Liability for Nuclear Damage Act 2010 and Related Issues,” Government of India: Ministry of External Affairs, February 8, 2015, [http://www.mea.gov.in/press-releases.htm?dtl/24766/Frequently\\_Asked\\_Questions\\_and\\_Answers\\_on\\_Civil\\_Liability\\_for\\_Nuclear\\_Damage\\_Act\\_2010\\_and\\_related\\_issues](http://www.mea.gov.in/press-releases.htm?dtl/24766/Frequently_Asked_Questions_and_Answers_on_Civil_Liability_for_Nuclear_Damage_Act_2010_and_related_issues).

<sup>4</sup> “The Treaty - History: Summary,” CTBTO Preparatory Commission, accessed May 7, 2018, <https://www.ctbto.org/the-treaty/history-summary/>.

<sup>5</sup> “Proposed Fissile Material (Cut-Off) Treaty (FMCT),” Nuclear Threat Initiative, May 31, 2017, <http://www.nti.org/learn/treaties-and-regimes/proposed-fissile-material-cut-off-treaty/>.

<sup>6</sup> Sharad Joshi, “Nuclear Proliferation and South Asia: Recent Trends,” Nuclear Threat Initiative, August 1, 2007, <http://www.nti.org/analysis/articles/nuclear-proliferation-south-asia/>.

**International Atomic Energy Agency (IAEA):** An international regulatory body established in 1957 as part of the United Nations family to promote the safe, secure, and peaceful use of nuclear technologies.<sup>8</sup>

**Nuclear Non-Proliferation Treaty (NPT):** An international treaty established in 1968 with the goals of preventing the spread of nuclear weapons and technology, advancing disarmament, and promoting peaceful uses of nuclear energy.<sup>9</sup> As of 2017, all countries except India, Israel, North Korea, Pakistan, and South Sudan are party to the treaty.

**Nuclear Proliferation:** The spread of nuclear weapons, fissile material, and/or technology to countries besides the five recognized by the Nuclear Non-Proliferation Treaty as nuclear-weapon states, or the increase in an existing nuclear-weapon state's arsenal size or technological standard.<sup>10</sup>

**Nuclear Suppliers Group (NSG):** A "supply-side" regime of countries who pledge to set strict guidelines for nuclear-technology exports and nuclear-related exports to curb proliferation.<sup>11</sup> The organization was founded in 1974 in response to India's first nuclear test, which it dubbed a "peaceful nuclear explosion."<sup>12</sup>

**Nuclear Taboo:** The non-use of nuclear weapons since World War II due to their normative status as prohibited weapons.<sup>13</sup>

**"Peaceful Nuclear Explosion" (PNE):** The term used by the Indian government to describe its first nuclear test in 1974.<sup>14</sup> Despite international doubts, New Delhi insisted the test was for civilian, rather than military, purposes.

**U.S.-India Civil Nuclear Agreement (Indo-U.S. Nuclear Deal):** An agreement between the United States and India concluded in 2008 that established civil nuclear cooperation between the two countries.<sup>15</sup> As part of the deal, the Nuclear Suppliers Group granted India a waiver, allowing it to engage in civilian nuclear trade with the United States and the group's other members. In return, India allowed more intrusive inspections of its civilian nuclear facilities and promised to continue its moratorium on testing and to work towards negotiating a Fissile Material Cut-Off Treaty.

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<sup>7</sup> "Hyde Act," U.S. Government Publishing Office, accessed May 7, 2018, <https://www.gpo.gov/fdsys/pkg/BILLS-109hr5682enr/pdf/BILLS-109hr5682enr.pdf>.

<sup>8</sup> "History," International Atomic Energy Agency, accessed May 7, 2018, <https://www.iaea.org/about/overview/history>.

<sup>9</sup> "Treaty on the Non-Proliferation of Nuclear Weapons (NPT)," Nuclear Threat Initiative, April 15, 2018, <http://www.nti.org/learn/treaties-and-regimes/treaty-on-the-non-proliferation-of-nuclear-weapons/>.

<sup>10</sup> "Treaty on the Non-Proliferation of Nuclear Weapons (NPT)."

<sup>11</sup> "Nuclear Suppliers Group (NSG)," Nuclear Threat Initiative, February 1, 2018, <http://www.nti.org/learn/treaties-and-regimes/nuclear-suppliers-group-nsg/>.

<sup>12</sup> "18 May 1974 - Smiling Buddha," CTBTO Preparatory Commission, accessed May 7, 2018, <https://www.ctbto.org/specials/testing-times/18-may-1974-smiling-buddha>.

<sup>13</sup> Nina Tannenwald, *The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons Since 1945* (New York: Cambridge University Press, 2007).

<sup>14</sup> "18 May 1974 - Smiling Buddha."

<sup>15</sup> Jayshree Bajoria and Esther Pan, "The U.S.-India Nuclear Deal," Council on Foreign Relations, November 5, 2010, <https://www.cfr.org/backgrounders/us-india-nuclear-deal>.

**Vertical Proliferation:** The proliferation of nuclear weapons by a country increasing its own stockpile and/or modernizing its own technology.<sup>16</sup>

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<sup>16</sup> Joshi, "Nuclear Proliferation and South Asia."

## **CONTENT OVERVIEW**

In this section, we provide an overview of all the lectures and supplemental materials in Chapter 2 of *Nuclear South Asia* on [www.nuclearlearning.org](http://www.nuclearlearning.org).

### **4.1: “NUCLEAR PROLIFERATION AND NONPROLIFERATION”**

Run Time: 7:43

Lecturers: Scott Sagan (Stanford University), Nicholas Miller (Brown University), Neil Joeck (University of California, Berkeley), Jeffrey Lewis (Middlebury Institute of International Studies at Monterey), Francis Gavin (Massachusetts Institute of Technology), Nina Tannenwald (Brown University), and Michael Krepon (Stimson Center)

Key Points:

- According to Scott Sagan, there are three basic models used by political scientists to help explain decisions such as the development of nuclear weapons:
  - Security model – to address security threats;
  - Domestic politics model – to meet demands of parochial interest groups; and
  - Normative model – to boost international prestige.
- According to Nicholas Miller, the United States is opposed to nuclear proliferation because other states’ possession of nuclear weapons reduces U.S. influence and freedom of action abroad, and could increase the likelihood of catastrophic war.
  - Nuclear proliferation of enemies may deter U.S. action against those enemies, whereas nuclear proliferation of allies may reduce U.S. influence over those allies.
- Neil Joeck points out that nuclear weapons have been transformative towards international relations because they provide weaker states with the means of threatening powerful states.
- According to Jeffrey Lewis, the international relations community was slow to recognize the dangers of nuclear weapons, but after China tested nuclear weapons, the U.S. was compelled to create a global structure to prevent proliferation.
- According to Francis Gavin, the U.S. has three main tools of preventing proliferation:
  - Some measures are “hot,” such as economic sanctions, ostracizing a state, threatening or using of military power.
  - Some measures are “cold,” such as invoking norms, international laws, and the nuclear taboo.
  - Some measures are in the middle, including offering inducements like alliances, security guarantees, or even the sale of conventional weapons to states for not proliferating.
- According to Nina Tannenwald, the nuclear taboo is a de facto non-use norm of nuclear weapons, and it combines strategic self-interest with moral concern (see Lesson 3.9).
- Michael Krepon argues that nuclear anarchy is a universal threat that demands building blocks to prevent both horizontal and vertical proliferation. Horizontal proliferation is typically prevented through the NPT (see Lesson 4.2), whereas vertical proliferation is typically prevented through arms control and reduction treaties.

### **4.2: “THE GLOBAL NUCLEAR ORDER”**

Run Time: 5:43

Lecturers: Michael Krepon (Stimson Center), Toby Dalton (Carnegie Endowment), Jeffrey Lewis (Middlebury Institute of International Studies), George Perkovich (Carnegie Endowment), and Scott Sagan (Stanford University)

Key Points:

- Michael Krepon states that the global nuclear order consists of states who both have and do not have nuclear weapons, and are part of the Non-Proliferation Treaty (NPT).
  - India, Pakistan, and Israel are not part of the order. These countries were not content being permanently declared non-nuclear states due to their security concerns so they did not sign the NPT.
- Toby Dalton defines the global nuclear order as a system of agreements, treaties, and rule that establish and prioritize relations among states. The center of this order is the NPT.
- According to Jeffrey Lewis, the NPT is designed to stop the spread of nuclear weapons through various “bargains.” The “grand bargain” is that states with nuclear weapons agree to disarm in exchange for states without nuclear weapons not developing them. There is also the bargain by states with nuclear weapons to provide nuclear technology to states without nuclear weapons, if the latter agree to not develop them.
- George Perkovich adds that the global nuclear order also defines the normally accepted behavior for states that have nuclear weapons and the normally accepted behavior for states without nuclear weapons.
- According to Scott Sagan, there are 31 states with nuclear power plants and nine with nuclear weapons. Of the 31 states, most have the technology to develop nuclear weapons but have chosen not to. This is a great achievement that can largely be attributed to the NPT.

#### **4.3: “THE NUCLEAR NON-PROLIFERATION TREATY (NPT) AND SOUTH ASIA”**

Run Time: 9:49

Lecturers: Shyam Saran (former Indian Foreign Secretary), Toby Dalton (Carnegie Endowment), Zamir Akram (former Pakistani ambassador), Riaz Khan (former Pakistani Foreign Secretary), Mark Fitzpatrick (IISS-Americas), Rakesh Sood (former Indian ambassador), Rajesh Rajagopalan (Jawaharlal Nehru University), and Leonard Spector (James Martin Center for Nonproliferation Studies)

Key Points:

- According to Shyam Saran, the NPT recognized five nuclear weapons states as of 1967, but there were nuclear capable states that never joined the NPT, and now there are at least four non-party states with nuclear weapons.
  - Thus, the legitimacy of the global nuclear order could be thought of as “contested.” A new order, Saran argues, must recognize these new challenges.
- According to Toby Dalton, India and Pakistan can be thought of as part of the nuclear order because both states adhere to some international agreements. However, they are not considered to have the privileges of other nuclear states because they did not ratify the NPT.
  - India has been given some consideration and privileges due to special agreements.
  - Pakistan has not been given these agreements and promotes its own membership in the Nuclear Suppliers Group (NSG).
- According to Zamir Akram, there are three countries outside of the “nuclear club” that are de facto nuclear states (Pakistan, India, and Israel). The question now facing the international community is how to accommodate these states within the global order.
- Riaz Khan believes that there are not gradations between nuclear powers; countries with nuclear weapons are nuclear powers. He adds that while Pakistan wants to engage with the international community in efforts of arms control, there is some discrimination against it.

- According to Mark Fitzpatrick, the de facto nuclear states exist in a “halfway house” because while they are not officially included in the global nuclear order, it is incorrect to consider some of these countries, such as Pakistan, as not in actuality existing in that order.
- Rakesh Sood believes that India has had a consistent attitude towards the global order and that it is a reluctant nuclear state, as demonstrated by how it waited 24 years between developing nuclear capabilities and declaring itself a nuclear weapons state.
- According to Rajesh Rajagopalan, the present global nuclear order is under pressure. While India hopes to strengthen existing regimes, it would not accept a widening circle of nuclear countries.
- According to Leonard Spector, if mutual deterrence is assured between India and Pakistan, then the countries may be able to contribute to the global nuclear order.

#### **4.4: “THE COMPREHENSIVE NUCLEAR TEST-BAN TREATY (CTBT) AND SOUTH ASIA”**

Run Time: 9:10

Lecturers: Michael Krepon (Stimson Center), Sheel Kant Sharma (former Indian ambassador), Jayita Sarkar (Harvard University), George Perkovich (Carnegie Endowment), Feroz Khan (Pakistani Army), Riaz Khan (former Pakistani Foreign Secretary), and Zamir Akram (former Pakistani ambassador)

Key Points:

- According to Michael Krepon, India was a supporter of a comprehensive test ban, and even played a large role in negotiating the CTBT, but refused to sign at the end of negotiations after the entry-into-force provision was crafted, as India believed that constrained its sovereignty.
- Sheel Kant Sharma states that India’s position on the CTBT includes de facto implementation of the treaty’s main obligation, meaning stopping nuclear tests. India has a moratorium on nuclear testing that has been upheld by three governments.
- According to Jayita Sakar, India did not sign the CTBT for two main reasons: it did not believe the CTBT would lead to universal disarmament and it considered the treaty to be discriminatory.
- According to George Perkovich, the Indian scientific establishment was worried about the abolition of tests since many in the community were aging and believed a continuation of testing would be necessary for a new cohort of leadership.
  - He adds that there was enormous domestic pressure to test nuclear weapons in the late nineties, right before the treaty was signed, but the Indian government avoided it until after the 1996 elections.
- According to Riaz Khan, Pakistan was prepared to sign the CTBT along with India, but came under sanctions after its nuclear testing in 1998. After the United States itself failed to ratify the treaty in 1999, Pakistan did not feel as pressured to sign the CTBT.
- According to Zamir Akram, Pakistan originally supported the CTBT but did not feel pressure to sign when India refused to sign it. However, Pakistan has a unilateral moratorium on not testing nuclear weapons, as part of the Lahore Agreement with India that both countries agreed to.

#### **4.5: “THE FISSILE MATERIAL CUT-OFF TREATY (FMCT) AND SOUTH ASIA”**

Run Time: 6:01

Lecturers: Reshmi Kazi (Institute for Defence Studies and Analyses), Toby Dalton (Carnegie Endowment), Zamir Akram (former Pakistani ambassador), and Pervez Hoodbhoy (Forman Christain College)

Key Points:

- According to Reshmi Kazi, India maintains a supportive stance on the FMCT and would look forward to negotiations, but those are being blocked by Pakistan.

- According to Toby Dalton, India’s position on the FMCT is difficult to discern. India struck an agreement with the NSG in 2008 that supports the conclusion of the FMCT, but, there has never been a commencement of FMCT negotiations, and India’s actual stance could be more negative were negotiations to begin.
- According to Zamir Akram, Pakistan believes that the FMCT is a limited approach to dealing with fissile material because it would ban the future production of fissile material, but not deal with the existing fissile material stocks that some countries possess. Pakistan would prefer a treaty that accounts for existing fissile material as well.
- Mark Fitzpatrick argues that Pakistan has been singlehandedly blocking the FMCT negotiations.
- According to Pervez Hoodbhoy, the reason Pakistan blocks FMCT is because it wants more fissile material for creating battlefield nuclear weapons, due to its shift in posture.
  - Previously, Pakistan’s posture was to deter India’s nuclear capabilities, but now it fears a surgical strike into Pakistani territory, so it uses nuclear weapons to counter India’s conventional capabilities as well.
  - Building many low yield nuclear weapons requires more fissile material than fewer, larger weapons does.

#### **4.6: “AQ KHAN AND THE GLOBAL NUCLEAR ORDER”**

Run Time: 9:59

Lecturers: Jeffrey Lewis (Middlebury Institute of International Studies at Monterey), Robin Raphel (U.S. Department of State), Robert Einhorn (U.S. Department of State), Thomas Fingar (U.S. National Intelligence Council), Sharad Joshi (Middlebury Institute of International Studies at Monterey), Lisa Curtis (U.S. Department of State), and Toby Dalton (Carnegie Endowment)

Key Points:

- A.Q. Khan was a Pakistani metallurgist who worked in Europe at a supply company for centrifuge manufacturers. During that time, the international community believed Pakistan could not make its own centrifuges, but A.Q. Khan used his connections to use other countries as an industrial base for Pakistan’s centrifuge manufacturing, eventually acquiring the technology in bits and pieces.
  - This was essential for the success of Pakistan’s nuclear program, but later it was discovered that Khan had sold nuclear technology to countries such as North Korea, Iran, and Libya, contributing to proliferation.
- According to Jeffrey Lewis, the A.Q. Khan Network has changed how the international community thinks about proliferation. First, the community now cares about centrifuge proliferation, and second, approaching nonproliferation from a supply-side perspective may be less efficient than previously thought.
- Robin Raphel states that A.Q. Khan is still an iconic figure in Pakistan and widely viewed as the father of Pakistan’s nuclear program. At the same time, he embodied the United States’ worst fears about nuclear proliferation.
- According to Robert Einhorn, A.Q. Khan and his network were responsible for starting Iran’s centrifuge enrichment program, as well as North Korea and Libya’s start with enrichment technology.
- Thomas Fingar describes how A.Q. Khan provided a wakeup call to the international system, which led to the discovery of channels of acquisition of nuclear weapons, the tightening of control regimes, and the strengthening of police activities that have made it much more difficult for an individual to repeat A.Q. Khan’s actions.

- The incident also demonstrated how globalization and computer manufacturing have made the acquisition of materials necessary to build nuclear weapons somewhat easier.
- According to Sharad Joshi, scholars still maintain a consensus that the entirety of the A.Q. Khan Network is still unknown. The Pakistani Foreign Office often uses the term “closed chapter” to describe its perspective on the network. However, the international community still has questions regarding whether the network could emerge again and if the original individuals involved have been properly prosecuted. Many believe that they have not been held accountable, as A.Q. Khan was never fully prosecuted.
- According to Lisa Curtis, the revelations that A.Q. Khan had been peddling nuclear materials to countries like Iran and North Korea was devastating to the U.S.-Pakistan relationship. It was viewed as the biggest proliferation disaster in the history of nuclear weapons.
  - It posed challenges to the U.S.-Pakistan relations particularly because the United States was unable to interview A.Q. Khan, and the issue remains an impediment to U.S.-Pakistan nuclear cooperation.
- According to Toby Dalton, Pakistan maintains that there were no Pakistani laws in place at the time that A.Q. Khan violated, but now there are more WMD controls. There is also an inter-agency division, which brings together officials from different departments to control strategic technologies.

#### **4.7: “LAYING THE GROUNDWORK FOR THE INDO-U.S. NUCLEAR DEAL”**

Run Time: 1:49

##### Key Points:

- The groundwork for the Indo-U.S. nuclear deal was built by two diplomats, Jaswant Singh and Strobe Talbott, who began a dialogue after India’s 1998 nuclear tests to resolve differences regarding India’s nuclear program.
- While there was no agreement by the end of the Clinton administration in 2001, the dialogues build bilateral trust.
- The Indo-U.S. agreement was finalized in 2005 but had to overcome domestic approval. In the United States, Congress had to revise Section 123 of the Atomic Energy Act to allow for trade with India, who had not signed the NPT. This revision was complete in 2006, but then Congress had to approve the deal itself, which was contingent on NSG consent.
- In India, the government needed a vote of confidence by Parliament, which had displayed some resistance. In 2008 it won the vote.
- India also passed the Civil Liability for Nuclear Damage Act, which specified who would be liable in the event of a nuclear accident.

#### **4.8: “U.S. PERSPECTIVES ON THE INDO-U.S. NUCLEAR DEAL”**

Run Time: 12:32

Lecturers: Jeffrey Lewis (Institute of International Studies at Monterey), Dan Markey (U.S. Department of State), Ashley Tellis (Carnegie Endowment), Robin Raphel (U.S. Department of State), Anish Goel (New America), Cindy Vestergaard (Stimson Center), Leonard Spector (James Martin Center for Nonproliferation Studies), and Toby Dalton (Carnegie Endowment)

##### Key Points:

- According to Jeffrey Lewis, India was not eligible for civil nuclear cooperation with the United States under the Atomic Energy Act since it had a nuclear weapons program. Still, the Bush

administration decided that although India would never sign the NPT, there should be efforts to put some facilities under safeguards. Congress then passed the Hyde Act to begin negotiations.

- He adds that opponents of the agreement believed it set a terrible precedent for other de facto nuclear states by offering India benefits of peaceful nuclear cooperation without being a signatory of the NPT.
- According to Dan Markey, the United States was driven to negotiate the Indo-U.S. nuclear deal largely because of emerging geopolitics: it saw India as an ideal Asian partner for dealing with China's rise. So, the question became: what was blocking India from being a better partner to the United States, and how could this be broken through?
  - The Bush administration thus sought to negotiate a deal without majorly disrupting the strategic balance between India and Pakistan.
- Ashley Tellis argues that the United States signed the deal for two main reasons: one, there was a huge level of comfort with India as a fellow democracy, and two, it would help the United States maintain the balance of power with a rising China.
- According to Robin Raphel, Congress came to understand that India was important as an emerging power, and since the Cold War was over and there were promising economic opportunities, it was not wise to jeopardize larger strategic goals for the singular goal of India giving up its nuclear program.
- Anish Goel explains that the Indo-U.S. nuclear deal was incredibly controversial because it changed 35 years of consistent U.S. policy. Regional specialists in the U.S. government tended to support the deal, but many nonproliferation specialists tended to oppose the deal. To the opponents, the deal represented a threat to the global nonproliferation framework.
- According to Cindy Vestergaard, the safeguards agreement with the IAEA expands the facilities India holds under international safeguards. India can add to the number of facilities under safeguards, but not all facilities are encompassed (such as military facilities).
  - For many critics, a weakness of the safeguards agreement is that nuclear materials can move outside of facilities currently under safeguards.
- Leonard Spector states that many people in the U.S. government were concerned that the deal with India would erode the only restraint that applied to the would-be nuclear powers: that there would be economic penalties and isolation for pursuing a program.
- According to Toby Dalton, Pakistan responded to the deal by maintaining that it was damaging to nonproliferation. However, more Indian facilities are currently under safeguards than before, and its nuclear program is not growing as quickly as many originally thought. Yet, it is still hard to judge the effectiveness of the deal long-term.

#### **4.9: "INDIAN PERSPECTIVES ON THE INDO-U.S. NUCLEAR DEAL"**

Run Time: 6:15

Lecturers: C. Raja Mohan (Carnegie India), Rakesh Sood (Former Indian ambassador), Sheel Kant Sharma (former Indian ambassador), and Shyam Saran (former Indian Foreign Secretary)

Key Points:

- According to C. Raja Mohan, the Indo-U.S. nuclear deal was one of the most consequential debates in India for two main reasons: one, people questioned what the deal meant for Indo-U.S. relations and two, what the deal meant for India's nuclear program.
- Rakesh Sood explains that India's purpose in negotiating the deal was that it wanted to be recognized as a responsible nuclear state and wanted participation in normal trade and commerce in the nuclear sector.

- According to Sheel Kant Sharma, the Indo-U.S. nuclear deal catapulted nuclear issues into the forefront of the national consciousness.
- Shyam Saran believes that the two countries often struggled to negotiate the deal because the U.S. understands how to deal with allies and adversaries, but struggles with partners.
  - To sell the deal to the U.S. public, U.S. leadership had to advertise that the deal would not damage the existing nonproliferation regime.
  - To sell the deal to the Indian public, Indian leadership had to advertise that the deal would not constrain India's nuclear program.
- According to Sheel Kant Sharma, India agreed to separate its strategic and civilian nuclear facilities. All civilian facilities were then placed under safeguards, resulting in 14 out of 22 reactors being placed under safeguards.

#### **4.10: "PAKISTANI PERSPECTIVES ON THE INDO-U.S. NUCLEAR DEAL"**

Run Time: 4:45

Lecturers: Touqir Hussain (former Pakistani ambassador), Feroz Khan (Pakistani Army), Riaz Khan (former Pakistani Foreign Secretary), and Zamir Akram (former Pakistani ambassador)

Key Points:

- According to Touqir Hussain, Pakistan's initial reaction to the Indo-U.S. nuclear deal was not directly oppositional, but later changed when Pakistan realized it would not be given a similar deal. Pakistan therefore believed that the deal was discriminatory.
- Feroz Khan states that Pakistan initially believed that if the Indian deal happened, something similar might occur after a period of time for Pakistan. However, Pakistan became upset with the deal around 2010-2011 as it perceived that the United States was not interested in that.
- According to Riaz Khan, Pakistan was concerned that the nuclear deal would allow India to produce fissile materials for military purposes because under the deal, eight Indian nuclear power plants remained outside IAEA safeguards.
  - Moreover, Pakistan was interested in nuclear power generation and wanted access to nuclear technology itself, and therefore found the deal discriminatory.
- According to Zamir Akram, the agreement has had the adverse effect of leading India to reject nuclear dialogue with Pakistan since 2008.

#### **4.11: "THE ORIGINS AND ROLE OF THE NUCLEAR SUPPLIERS GROUP (NSG)"**

Run Time: 4:33

Lecturers: Robert Einhorn (U.S. Department of State) and Mark Fitzpatrick (IISS-Americas)

Key Points:

- According to Robert Einhorn, the NSG was established as a direct result of India's 1974 nuclear tests, since it violated a commitment to only use imported nuclear materials for peaceful purposes. As such, the test served as a wakeup call to the international community to take nonproliferation seriously.
  - The NSG's purpose is to establish stronger multilateral controls for conditions of supply of nuclear materials.
- According to Mark Fitzpatrick, both India and Pakistan view the NSG as an inhibition to them from becoming "normal" nuclear states. Both countries disparage it as an exclusive club, but simultaneously seek to join that club.
  - India is closer to becoming part of it because of the 2005 Indo-U.S. nuclear deal.

- Pakistan worries that if India becomes a member of the NSG, it would deny Pakistan membership since the NSG's decisions are consensus-based.
- The NSG is a group of 48 nuclear supplier countries that create export control guidelines for nuclear-related exports. The guidelines aim to ensure that the trade of nuclear materials for peaceful purposes does not contribute to the proliferation of nuclear weapons.
- The main reasons driving India and Pakistan's desire to join the NSG are:
  - Influence – joining the NSG would afford both countries greater influence in shaping international norms consistent with their national interest;
  - Technology – both countries would be able to develop first-rate nuclear programs through access to high-level technology; and
  - Geopolitics – joining the NSG confers prestige and influence within the international system. Both countries could reject membership to other states, which is an element Pakistan worries about in particular.

#### **4.12: “INDIA, PAKISTAN, AND NSG MEMBERSHIP”**

Run Time: 6:39

Lecturers: Michael Krepon (Stimson Center), Rakesh Sood (former Indian ambassador), Rajeswari Rajagopalan (Observer Research Foundation), Ruhee Neog (Institute of Peace and Conflict Studies), Zamir Akram (former Pakistani ambassador), and Riaz Khan (former Pakistani Foreign Secretary)

Key Points:

- According to Michael Krepon, India wants membership in the NSG for prestige (having a seat at the table), influence, to be a part of the decision-making process in the global nuclear order, and to gain access to high-level technologies.
- According to Rakesh Sood, India has built up a credible export control system in harmony with NSG restrictions and remains in dialogue with the NSG about membership.
- Rajeswari Rajagopalan argues that the issue of India's NSG membership can be thought of as more political than economic. India is not an NPT member but has adhered to many of the same principles, which bolsters its credibility as a nuclear state.
- According to Ruhee Neog, India has several bilateral nuclear agreements in place, indicating that the issue of India's NSG membership is less commerce-centered than many believe. The NSG would give India more access to technology, but more importantly, it would allow India to play a role in the consensus process that makes amendments to the guidelines of the NSG.
- Zamir Akram argues that it is controversial to advocate for India's entry into the NSG because it was India's nuclear tests that originally sparked the creation of the organization in the first place. Some countries like Pakistan believe that if an exception is granted for India to join, such an exception should apply to all countries that fall in the same category, including Pakistan.
- According to Riaz Khan, the criteria for joining the NSG should look at export control systems, how well they are being enforced, and the willingness of the country to be cooperative in international endeavors towards peaceful uses of nuclear energy.

#### **4.13: “ASSESSING INDIA AND PAKISTAN'S NSG CHANCES”**

Run Time: 10:17

Lecturers: Cindy Vestergaard (Stimson Center), Toby Dalton (Carnegie Endowment), Leonard Spector (James Martin Center for Nonproliferation Studies), Ashley Tellis (Carnegie Endowment), Zamir Akram (former Pakistani ambassador), Michael Krepon (Stimson Center), C. Raja Mohan (Carnegie India), Ruhee Neog (Institute of Peace and Conflict Studies), and Manpreet Sethi (Centre for Air Power Studies)

### Key Points:

- Cindy Vestergaard describes how India used a Canadian reactor and U.S. heavy water in its 1974 “peaceful nuclear explosion,” which broke with its clause to use the materials for peaceful purposes only. The result of this explosion, including the NSG creation, indicates that there were strong proliferation concerns in the international community.
- According to Toby Dalton, there are few indications that Indian nuclear technology and expertise has gone to other countries, but overall their record is fairly clean. However, broadening the lens to include questions of nuclear security shows that India has a perception of resistance to increased transparency and safeguards to some facilities. This may suggest that the scientific community there does not value the benefits that come with increased security measures.
- Leonard Spector believes that the prospect of India and Pakistan joining the NSG together is stronger than either of them gaining entry separately.
- According to Ashley Tellis, there are several impediments preventing Pakistan from entering the NSG, including its unsettled proliferation record (see Lesson 4.6) and the fact that its growing nuclear weapons program runs counter to global denuclearization trends.
- According to Michael Krepon, China’s argument against India’s NSG membership is that NSG membership requires NPT signing. However, Krepon predicts that Beijing may drop this argument if India and Pakistan are given NSG membership together.
  - He believes that the determination should not be whether or not they are part of NPT, since they cannot join it now, but instead whether or not they adhere to its principles and standards by being responsible members of the international community.
- C. Raja Mohan, the Chinese argument against India’s NSG membership is political, not technical. China feels that the Indo-U.S. deal was about the construction of a special relationship between New Delhi and Washington.
- According to Ashley Tellis, it is doubtful that India and Pakistan have equal chances at NSG membership. It may be more likely that NSG members will permit India to join first, and if appropriate, enable Pakistan to join later.
- According to Ruhee Neog, India could continue to lobby for entry into the NSG by courting smaller countries, leaving China to be the odd man out. Or, it could state in clear terms that refusal to allow it into the NSG would have negative consequences for the Sino-Indian bilateral relationship. Alternatively, India could reduce its enthusiastic investment into the NSG.
- According to Manpreet Sethi, India has three main ways of lobbying for entry into the NSG:
  - Using every opportunity to de-link itself from Pakistan’s membership;
  - Improving the nature of its nuclear power program; and
  - Finding a new way of leveraging its relationship with China, such as through greater civil nuclear cooperation.

## **RECOMMENDED READINGS**

For greater depth, we encourage students to peruse these recommended readings:

- Zamir Akram, "South Asian Nuclear Balance: An Interview with Pakistani Ambassador to the CD Zamir Akram," *Arms Control Today*, December 2, 2011. [https://www.armscontrol.org/act/2011\\_12/Interview\\_With\\_Pakistani\\_Ambassador\\_to\\_the\\_CD\\_Zamir\\_Akram](https://www.armscontrol.org/act/2011_12/Interview_With_Pakistani_Ambassador_to_the_CD_Zamir_Akram).
- David Albright and Corey Hinderstein, "Unraveling the AQ Khan and Future Proliferation Networks," *Washington Quarterly* 28, No. 2 (2005): 109-128. <https://www.tandfonline.com/doi/abs/10.1162/0163660053295176>.
- G. Balachandran, "India and NSG: Approaches to Indian Membership," *Institute for Defence Studies and Analyses* 23, (2013). [https://idsa.in/system/files/IB\\_IndiaNSG.pdf](https://idsa.in/system/files/IB_IndiaNSG.pdf).
- Toby Dalton and Michael Krepon, *A Normal Nuclear Pakistan* (Washington, DC: Carnegie Endowment for International Peace and Stimson Center, August 2015). <https://www.stimson.org/sites/default/files/file-attachments/NormalNuclearPakistan.pdf>.
- Toby Dalton, Togzhan Kassenova, and Lauryn Williams, *Perspectives on the Evolving Nuclear Order*, (Washington, DC: Carnegie Endowment for International Peace, 2016). [http://carnegieendowment.org/files/NuclearPerspectives\\_final.pdf](http://carnegieendowment.org/files/NuclearPerspectives_final.pdf).
- Mark Hibbs, *The Future of the Nuclear Suppliers Group* (Washington, DC: Carnegie Endowment for International Peace, 2011). [http://carnegieendowment.org/files/future\\_nsg.pdf](http://carnegieendowment.org/files/future_nsg.pdf).
- Feroz Khan, "Burying the Hatchet: The Case for a 'Normal' Nuclear South Asia," *Arms Control Today*, March 2016. <http://watson.brown.edu/files/watson/imce/events/2016/Khan%20%20Buring%20the%20Hatchet.pdf>.
- Zia Mian and A.H. Nayyar, "Playing the Nuclear Game: Pakistan and the Fissile Material Cutoff Treaty," *Arms Control Today*, 40, no. 3 (2010): 17. [https://www.armscontrol.org/act/2010\\_04/Mian](https://www.armscontrol.org/act/2010_04/Mian).
- C. Raja Mohan, *Impossible Allies: Nuclear India, United States, and the Global Nuclear Order* (New Delhi: India Research Press, 2006). <https://books.google.com/books?id=8vO5AAAAIAAJ>.
- Harsh V. Pant, "The U.S.-India Nuclear Pact: Policy, Process, and Great Power Politics," *Asian Security* 5, no. 3 (September 2009): 273-295. <http://www.tandfonline.com/doi/abs/10.1080/14799850903179012>.
- Scott D. Sagan, "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb," *International Security* 21, no. 3 (Winter 1996-1997): 54-86. [https://fsi.stanford.edu/sites/default/files/Why\\_Do\\_States\\_Build\\_Nuclear\\_Weapons.pdf](https://fsi.stanford.edu/sites/default/files/Why_Do_States_Build_Nuclear_Weapons.pdf).
- Shyam Saran, "The Indo-U.S. Civil Nuclear Agreement – Ten Years After," *India Habitat Centre*, July 20, 2015. <http://spsindia.in/2016/04/26/the-indo-u-s-civil-nuclear-agreement-ten-years-after/>.

Strobe Talbott, *Engaging India: Diplomacy, Democracy, and the Bomb* (Washington, DC: The Brookings Institution Press, 2004). <https://books.google.com/books?id=mWXRDAQAQBAJ>.

United States Congress, House Foreign Affairs Committee, *Hearing on Civil Nuclear Cooperation with Pakistan: Prospects and Consequences*, December 8, 2015, 115th Congress, 1st session, Washington, DC: House Foreign Affairs Committee, 2015).  
<https://foreignaffairs.house.gov/hearing/subcommittee-hearing-civil-nuclear-cooperation-with-pakistan-prospects-and-consequences/>.

Leonard Weiss, "India and the NPT," *Strategic Analysis* 34, no. 2 (March 2010): 255-271.  
[https://fsi.stanford.edu/sites/default/files/Weiss\\_India\\_and\\_the\\_NPT.pdf](https://fsi.stanford.edu/sites/default/files/Weiss_India_and_the_NPT.pdf).

## **DISCUSSION QUESTIONS**

Below is a sample list of discussion questions to get students thinking and talking about the issues from this chapter in class.

1. Why is nuclear proliferation concerning for nuclear weapons states, and what tools do they have to prevent proliferation?
2. Why did India back out of the CTBT negotiations despite initially being a supporter of the treaty?
3. What implications does the fact that the global nuclear order is based on the NPT have for India and Pakistan?
4. What are the incentives for non-nuclear states to sign the NPT? For nuclear states?
5. What are some reasons why Pakistan opposes the FMCT?
6. What effects did the A.Q. Khan Network have on how the international community thinks about nuclear proliferation?
7. What were the arguments in support of the Indo-U.S. nuclear deal and the arguments against the deal?
8. Why do India and Pakistan seek membership in the NSG? What are their chances for gaining membership in the near- to mid-term?