

# Nuclear Proliferation in South Asia

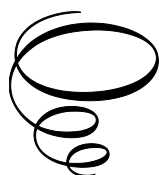


# Nuclear Proliferation in South Asia

Edited by

Manas Chatterji  
and Padmanabh M. Kamath

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Nuclear Proliferation in South Asia

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Edited by Manas Chatterji and Padmanabh M. Kamath

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Volume 1: Nuclear Proliferation in South Asia

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## FOREWORD

The objective of this book series is to publish a set of scholarly volumes in the area of conflict management, peace economics, and peace science. It will cover some of the following subjects:

- 1) Interface of peace studies and peace science
- 2) Peace science methodology and theory
- 3) Arms control and nuclear proliferation
- 4) Democracy and conflict
- 5) Linkage of internal and external conflict
- 6) Ethnic conflict
- 7) Disaster management
- 8) Terrorism and security
- 9) Environmental conflict and global warming
- 10) Resource conflict
- 11) Globalisation and conflict
- 12) International trade and financial crisis
- 13) Empirical case studies of conflict and peace in specific geographical areas
- 14) Coalition politics
- 15) Gandhian peace studies

There has been fantastic development in the literature on peace economics and peace science over the last four decades. The discipline of peace science is different from peace studies. Peace science is an interdisciplinary social science that uses the theory, methods, and techniques of other social sciences such as economics, sociology, political science, and international relations, and also the natural sciences. It uses time series, cross sections, and panel data to analyse problems using mathematical models.

In the first volume, *Nuclear Proliferation in South Asia*, we deal with the conflict situation between India and Pakistan. The dangerous nuclear confrontation between these two countries is a serious threat not only to South Asia but also to the world as a whole.

This volume contains articles written by well-known scholars, public officials, and bureaucrats. We hope that the material in this book will

motivate politicians of both countries to cooperate and move them away from mutual destruction.

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## PREFACE

The ruling party at the national level in India, the Bharatiya Janata Party (BJP), came to power in May 2014 by promising to “revise and update” the Indian Nuclear Doctrine to make it “relevant” for “civilian and military purposes.” Against this background, the VPM’s Centre for International Studies (CIS) (Regd.) held a two-day national seminar to analyse and understand three components of the nuclear policy options, (i) nuclear energy, (ii) non-proliferation, and (iii) disarmament, available to the NDA government. To generate a wider discussion and develop further concrete suggestions in these vital areas, a group of eminent scholars were requested to provide their thoughts for discussion at the seminar.

Such a national seminar would not have been possible without financial support from the Ministry of External Affairs (MEA) and the Indian Council of Social Science Research (ICSSR), New Delhi.

Hence, this is a collection of updated and revised papers presented at the national seminar. It would not have been possible to get them published if Prof. Manas Chatterji, a global citizen from the Binghamton University, State University of New York, had not offered to get them published as the first volume in the book series International Studies of Peace Economics and Peace Science. We owe him an immense sense of gratitude for showing his confidence in the academic abilities of the VPM’s CIS. We are also thankful to our contributors who took pains to update their initial presentations at the seminar and make them worthy of publication. We are grateful to Mr R. Mohan a scholar by his own rules and experienced proofreader during his professional work as Dy. Salt Commissioner in the National Government for his help in twice editing the papers. To see that it meets the high standards required by Cambridge Scholars Publishing, we finally requested Prof. C. Jagannath Pai, retired Professor of English, Kerala University, to give a final touch to the editorial process. We are grateful to him for sparing his valuable time to re-edit the papers. We express our sincere thanks to Ms. Helen Edwards for her patience in getting the manuscript through various levels of screening for the publication. At the

VPM's CIS, I am indebted to the painstaking efforts of Mrs. Anita S. Shetty and Mrs. Savithri S. Rao for their help in administratively readying the manuscript.

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## INTRODUCTION

The motivation for holding a national seminar on the theme of “Nuclear Energy, Non-Proliferation and Disarmament: Policy Options for the NDA Government”—coinciding with the coming into power of the BJP at the federal government level in Delhi under the inspiring leadership of Narendra Modi—mainly from the BJP manifesto for the Sixteenth general elections in April–May 2014, which clearly stated that the party will follow a “Two-pronged independent nuclear programme, unencumbered by foreign pressure and influence, for civilian and military purposes.” Toward that goal, it will “Study in detail India’s nuclear doctrine and *revise and update* (emphasis added) it to make it relevant to face the challenges of the current times.” It will also aim to “Maintain a credible minimum deterrent that is in tune with geostrategic realities.” The concept note of the seminar circulated among all eminent scholars, inviting them to put down their logical thoughts for presentation.

Raghavendra G. Gadadhubli, in his paper “Russia’s Nuclear Energy Diplomacy: Strengthening Ties with India,” analyses the meeting between Modi and Russian President Vladimir Putin that laid the foundation for long-term mutually beneficial co-operation in the nuclear energy sector. A joint document signed by the two leaders unfolds the strategic vision for enhancing Indo–Russian co-operation in the peaceful use of nuclear power. First, it contains plans to build over 20 nuclear power units in India. Second, both countries agreed to cooperate in building Russia-designed nuclear power stations in third countries. Third, the document reiterated the scope for joint extraction of natural uranium, production of nuclear fuel and waste elimination.

It is significant that PM Narendra Modi was first among the nuclear energy exporting states to visit Russia, since the latter has been “consistent” in supporting India in the energy sector as indicated by joint the Indian–Russian project at Kudankulam. But at the same time both have converging interests in preventing the proliferation of weapons of mass destruction as reiterated by the IAEA. Russia has also supported India’s admission to the Nuclear Supplies Group.

Kavita Sharma’s contribution (“India’s Nuclear Energy Security: A Coastal Security Perspective”) places energy security in the context of coastal security. She writes that while the BJP government has been making

conscious efforts to find alternative sources of renewable energy, such as solar energy and so on, there are specific plans to increase the current strength of 21 nuclear reactors that contribute only 2% of requirements to reach 25% by 2050. According to Kavita Sharma, the significant issue is that more than 50% of the nuclear reactors are located along the coast. Additional reactors that have been proposed for future installation are also likely to be developed along the coast in view of the abundant availability of coolant waters. However, the security of such coastal installations has been of vital concern. Coastal nuclear installations may become one of the easiest targets for terrorists and non-state actors. The 26/11 Mumbai attack substantiates that seaborne attacks on vital installations like nuclear infrastructure is a reality and calls for special consideration of our coastal security structures.

In his paper, “Pakistan’s Nuclear Policy: Relevance and Implications for India and its Nuclear Doctrine,” Arka Biswas raises the question of the relevance to India of Pakistan’s policy and aims to provide the answers. He points out that the most important development in Pakistan’s nuclear policy, with regard to its impact on India’s nuclear doctrine, has been the introduction of tactical nuclear weapons (TNWs). However, in the light of India not using conventional warfare against Pakistan following the terrorist attacks on India in 2001 and in Mumbai on 26/11, Pakistan’s TNWs becomes irrelevant to the Indian Nuclear Doctrine. It is essentially because the introduction of TNWs lowers Pakistan’s nuclear redlines to the extent that it takes away from “India the option of inflicting damage through a low-scale conventional attack.” Hence, the author says, “India may have two nuclear doctrines—a declared peacetime nuclear doctrine that serves the objective of nuclear deterrence and a classified wartime nuclear doctrine that serves the objective of defense.”

On the other hand, Padmanabh M. Kamath suggests (in “Nuclear Doctrine: Core Remains, Exceptions Change”) amending the Indian nuclear doctrine to include Pakistan using TNWs against India in a conventional war, or, if Pakistan-based terror groups use them to inflict unacceptable damages, India should use massive retaliation, with a view to inflicting disproportional damage on Pakistan. Change is the essence of nuclear policy to make nuclear doctrine relevant.

Jagmohan Meher in his presentation, “Dynamics of Deterrence in Indo-Pakistani Nuclear Confrontation: Options for India,” highlights the cost of “restraint” in the use of the nuclear threat due to the fear of escalation. Should India continue to suffer the consequences of “restraint” as demonstrated in the 26/11 Mumbai terror attack? NDA II has amply demonstrated to Pakistan its use of sophisticated weapons systems as in the

response to terror attacks in the Uri sector, and during its surgical strikes or in response to the Pulwama terror attack. Air strikes deep into the Pakistan-based Jaish-e-Mohammed training camp in Balakot did not invite any nuclear threat from Pakistan.

In his contribution, “China’s Himalayan Strategy and Its Impact on Indian-Nepalese Relations,” Satish Kumar considers China’s determined move to “shape world politics on its own terms.” As he feels that a new Asian world order is going to be dictated by China, he discusses the contours of the new world order, which he calls the New Asian World Order, and how India should respond to it.

R. Seshadri Vasan in his paper, “Sea-Based Deterrence: The Third Dimension, How Well Is India Prepared to Succeed,” narrates an obvious but extremely important factor: sea-based deterrence (SBD) is a vital component of the triad. However, even today a string component like SBD is weakened. In the absence of a strong SBD, NFU is a paper tiger minimising the options to the federal government. He has carried out a SWOT analysis of the existing scenario and examined options to prevent any form of surprise by the adversary.

Raj Kumar Kothari examines “Approaches to the Study of Nuclear Non-Proliferation and Selective Proliferation,” which provides a “framework for analysis.” After the end of the Cold War, there was a realisation that the existing approach towards nuclearisation was not inclusive in nature. The UN SC Resolution 1540 adopted in April 2004 required states to prohibit individual or other actors from supporting non-state actors seeking to acquire weapons of mass destruction. Two other counter-proliferation efforts have also been analysed: first, the Proliferation Security Initiative (PSI) of 2003 and, second, the nuclear security summits of 2010 and 2012. The very complexity of the contemporary nuclear landscape suggests that no single policy is sufficiently inclusive in nature to check proliferation. Different challenges demand different solutions. It is in this context that the present paper examines the impact of various approaches to the study of nuclear proliferation and selective proliferation.

In his presentation, “The Threat of Nuclear Terrorism in South Asia,” Prakash Almeida states that nuclear terrorism is a real threat with the rise of powerful terrorist organisations like Al Qaeda and ISIS. Making a dirty bomb or securing or even stealing or smuggling a nuclear warhead or nuclear material from nuclear states like Pakistan is a real threat. This threat has been further intensified with Pakistan acquiring TNWs. Almeida therefore argues that India needs to rethink its commitment to NFU and suggests some ways to strengthen nuclear security.

Panemangalore Gopal Krishna Kamath considers nuclear disarmament, concluding whether India is serious about it, and questions whether it is merely an elusive goal. He argues that India is in an unenviable geo-strategic environment. Her borders are undefined in the west, north, and north east. The state of Jammu and Kashmir (J&K) has been dismembered and parts are under illegal occupation by China and Pakistan. The part of J&K that is with India is again claimed by Pakistan. China is also claiming another state—the whole of Arunachal Pradesh—and has started calling it “Southern Tibet.” India has an advantage in conventional forces; however, Pakistan has the advantage in nuclear weapons. China has advantages both in nuclear and conventional forces. If the two mount a combined attack on India, can anyone imagine what would be the scenario?

China professed NFU against the background of superior nuclear weapons possessed by the US; India followed China as she had perceived a security threat emerging from China with its technological advancement in nuclear weapons and hence made a commitment to NFU. Kamath makes a pertinent point: “When we do not have a National Security Doctrine, how relevant is a Nuclear Doctrine?” Yet India is pursuing her policy of nuclear disarmament, because of “Gandhian values of peace.” In that spirit, after being well-armed with a nuclear triad, India can join hands with China to promote NFU among other nuclear weapons states led by the US. We need to move toward a global NFU to achieve a world free of nuclear weapons.

In her paper, “Nuclear Disarmament: Global Options,” Bindu Chowdary writes that since nuclear weapons were invented and the US became the first nuclear power in August 1945, efforts have been made by the US and practically every NWS to regulate and reduce, if not totally eliminate them. She has briefly discussed various options provided in the global forum of the Committee on Disarmament, like de-alerting nuclear weapons, no first-use guarantees, and many others. She concludes that “the nuclear weapons states have an immensely significant role in the implementation of nuclear weapons reduction and initiating and confirming the eliminating measures.” In the meanwhile, Barack Obama won the Nobel Peace Prize for his role in pursuing measures of nuclear disarmament. President Trump followed, trying to disarm North Korea of its nuclear weapons in the hope of winning a Nobel Peace prize!

“Nuclear Geopolitics in Asia: Strategic Dimensions of Iran’s Nuclear Deal with US and its Allies” by the late Brajesh N. Mehrish aims to bisect different aspects of the Iranian Deal. The nuclear deal with Iran, despite an irrational hatred for the US on the part of Iranian policy makers, signalled a recognition of new geopolitical realities.

The nuclear agreement between Iran and the P5+1 is a historical event that may have long-term ramifications for West Asia. The deal elevated Iran's regional and international position in several ways. The Islamic Republic of Iran regards itself as a revisionist power in West Asia. Iran has been seeking to shape a new Islamist region inspired by its revolution and under its leadership; it has rejected the political, military, and cultural status quo. Israel and various Arab countries were concerned over Iran's regional ambitions and policies. If the international community seeks stabilisation in West Asia, it must make sure that the nuclear agreement will not serve as a cover for Iran to acquire military nuclear capability or advance its hegemonic regional aspirations.

V. Shivkumar rightly points out that Tamil Nadu suffers from an acute shortage of power for its industrial development and people's domestic needs. In his contribution, "The Kudankulam Nuclear Project for a Future India: A Reflection," he provides readers a perspective on how popular opinion is being manipulated by external groups to scuttle the project.

C. Jagannath Pai takes readers through anti-nuclear war fictions in his paper, "Defusing Weapons of Terrorism: An Overview of Anti-Nuclear War Fiction." In his synopsis he says: "I can't summarise my article on nuclear war literature better than to quote a line by the war poet Wilfred Owen: 'The pity of war, the pity war distilled.' It highlights how the holiest of human institutions—motherhood—is trampled upon and trivialised by the image of an infant seeking in vain the milk from the dead mother's breast, a victim of nuclear destruction."

Let me conclude this brief introduction by stating that the World is in constant flux, and that is extremely well reflected in nuclear issues. President Trump has disowned Obama-initiated US–Iranian nuclear agreement without the concurrence of European members who participated in it. His pursuit of a nuclear agreement with the North Korean dictator seems unlikely at the present time.

Meanwhile, India is in hot pursuit of a revision to its commitment to NFU in its declaratory Nuclear Doctrine. As a reaction to the Modi government's abrogation of temporary constitutional provision contained in Article 370 to make J&K an integral part of India, Pakistan began sabre-rattling by using the threat of a Nuclear War. Should India continue to adhere to NFU? While commitment to NFU of nuclear weapons can continue in the event of Pakistan using—as of now, unlikely—nuclear weapons, India has the sovereign right to take all necessary steps to protect national security, including using nuclear weapons. In that situation, whether one calls it a "first strike" or a "second strike" or a "pre-emptive

strike” will remain an academic issue. Hence, it is relevant here to recall the suggestion made in this book by Arka Biswas that governments should have a “war-time nuclear doctrine” while keeping NFU as a peacetime nuclear doctrine of self-defence.

## CONCEPT NOTE

# NUCLEAR ENERGY, NON-PROLIFERATION AND DISARMAMENT POLICY OPTIONS FOR THE NDA GOVERNMENT

The 2014 election manifesto of the Bharatiya Janata Party (BJP) stated that it would follow a “two-pronged independent nuclear programme, unencumbered by foreign pressure and influence, for civilian and military purposes.” To that goal it will “study in detail India’s nuclear doctrine and *revise and update* it, to make it relevant to challenges of the current times” (emphasis added). It will also aim to “maintain a credible minimum deterrent that is in tune with geostrategic realities.” Soon after the publication of the BJP manifesto, there were a few articles and comments in favour of a review of the policy and some against it.

### **Civil Nuclear Deal (CND)**

Before the BJP’s decision to revise the nuclear doctrine is examined, it is pertinent to refer to an important, rather epoch making, development in the relations between India and the United States (US) in regard to Indian access to the latest nuclear technology to generate nuclear energy and India’s acquisition of “nuclear weapons state” status after the nuclear tests of 1998. This happened in July 2005, following the Vajpayee government signing the “Next Steps in Security Partnership” (NSSP) document with the Bush administration in January 2004, which provided for cooperation in civil nuclear activities, popularly called the Civil Nuclear Deal (CND).

The CND is a mixed bag. The CND put an end to the nuclear apartheid practised by the US against India after India’s first nuclear test conducted under Prime Minister Mrs. Indira Gandhi’s regime in 1974. A prominent reason cited by President George W. Bush for the CND was to enable Indian access to clean energy. Bush had said that the US accepted India’s goal of “promoting nuclear power and achieving energy security.” The US acceptance of India’s goal was facilitated by Bush’s recognition of

India as “a responsible state with advanced nuclear technology; India should acquire the same benefits and advantages as other such states.”

But the US also tried, albeit indirectly, to make India accept certain provisions of the Nuclear Non-Proliferation Treaty (NPT) of 1968 by making India agree to international inspections of a number of existing nuclear reactors hitherto not covered under the international inspection by the IAEA.

However, although the Indian Parliament approved the CND in 2008, implementation of Civil Nuclear Co-operation between the US and India stalled, mainly because of disagreements on two issues:

1. American companies in the business of providing nuclear reactors considered certain provisions of the Indian Liabilities Act, 2010, to be too stringent and discouraged US companies from trading with India.
2. India considered the provision in the Hyde Act of 2006 as intrusive and enabling the American administration to inspect the Indian acquisition of nuclear fuel from third countries.

The adverse impact of the above limitations was overcome during the summit on 25 January 2015 between PM Modi and President Obama on the eve of Indian Republic Day celebrations at which the US President was the Chief Guest.

It is now certain that the two countries will go ahead with nuclear trade by beginning work in Andhra Pradesh and Gujarat, where the Nuclear Power Corporation of India Ltd (NPCIL) has entered into contract with GE Hitachi Nuclear Energy and Toshiba-Westinghouse, respectively, to build nuclear reactors to generate electricity. The renewed operation of the CND is testified to by the fact that India signed a civil nuclear agreement with Sri Lanka on 17 February 2015.

### **Status of nuclear weapons states**

India declared herself a nuclear weapons state soon after the May 1998 nuclear tests and also came out with a nuclear doctrine, including a commitment by India not to use nuclear weapons as weapons of offence but purely for defence purposes. It was proposed this would be achieved through a declared policy of No First Use (NFU) of nuclear weapons. NFU also guarantees that India will not use or threaten to use nuclear weapons against a non-nuclear weapons state.

## **Other features of nuclear doctrine**

When can India use nuclear weapons? The policy of NFU initially provided for three possible situations in which India could be forced to take recourse to nuclear weapons in self-defence. (a) Were India to be the victim of misadventure by either Pakistan or China, it would respond with massive retaliation in a second strike. Beyond that, India's current policy provides for two exceptions in the use of nuclear weapons in a second strike: when there is technically no use of nuclear weapons by an adversary in the first attack, that is, (b) if a non-nuclear weapons state joins an alliance with a nuclear weapons state and as a member of such an alliance attacks India, or if the nuclear weapons state as the leader of the alliance attacks India, this would invite the punitive nuclear use of second strike by India; and (c) if a non-nuclear weapons state uses biological or chemical weapons against India, the doctrine permits India to use nuclear weapons against such a state in its own defence in a second strike.

## **NFU as a bipartisan policy**

The NFU policy has worked well so far. Soon after the May 1998 nuclear tests conducted by the National Democratic Alliance (NDA), then led by Atal Behari Vajpayee, domestically the Congress Party led by Sonia Gandhi and globally the West led by the US were similar in the vehemence of their criticism and condemnation, creating a conglomeration of critics. The only difference between the external and internal criticism was in the external forces' call for the immediate reversal of the Indian nuclear policy. Congress did not call for this. But once the Congress-led UPA under the premiership of Manmohan Singh assumed power in May 2004, it came round to accepting the NFU as a policy without many changes. Thus, for instance, in his interview with Wolf Blitzer of CNN in Washington, DC, on 20 July 2005, Manmohan Singh said that his government was very committed to the NFU of nuclear weapons.

US President Bill Clinton, a vehement critic of Indian nuclear policy, in his second term accepted India's compulsion to acquire nuclear weapons, improving US relations with India, and before his presidency ended was in the midst of negotiating a nuclear cooperation treaty with India. Building on these grounds, his Republican successor, George W. Bush, offered a nuclear deal to India in July 2005.

However, while leading the opposition during the UPA's ten years (2004–14), the BJP did not hesitate to suggest in early 2011, backed by one of its original promoters, Jaswant Singh, that there should be a review of

India's commitment to the NFU of nuclear weapons. It was the turn of the Minister for External Affairs, S. M. Krishna, to reiterate India's continued adherence to it.

### **Arguments in favour and against change**

All those who hope to see a change in the present nuclear doctrine/NFU policy point out that the Indian policy of NFU has not been favourably received by Pakistan. On the other hand, Pakistan has not only increased the number of nuclear weapons it possesses (100–110, in comparison with India's 90–100), but also acquired tactical nuclear weapons to meet the Indian advantage in conventional armed forces.

This concern can be met by pointing out that the very fact that India has a greater number of conventional forces, which could easily overrun Pakistan's ground forces, has made Pakistan embrace the policy of First Use (FU) of nuclear weapons. Nevertheless, its fear of defeat in conventional warfare compelled it to go for tactical nuclear weapons. Pakistan's game plan seems to be that in the event of another Mumbai 26/11-like surprise or a stealthy terrorist attack on some economic or nuclear or defence nerve centre, India might be under pressure to attack but might not venture into a conventional military attack for fear of Pakistan's use of tactical nuclear weapons; thus enhancing its sense of security.

However, the problem created by Pakistan's possession of tactical nuclear weapons can be met by updating the exceptions already included in the NFU policy, stated earlier. Thus, a clear statement is needed that any use of tactical nuclear weapons against Indian assets or defence forces will be considered to be an unprovoked attack and equivalent to a nuclear attack and India will appropriately and adequately respond with a massive second strike using nuclear weapons.

A second reason advanced by those who favour a revision of the nuclear doctrine is that the Pakistan-based, promoted, protected, and financed anti-Indian terrorist groups could lay their hands on Pakistani nuclear weapons. There is a widely expressed global fear that terrorist groups are likely to use Pakistani nuclear weapons against India.

As in the case of the first problem, the way to meet this problem is to also include terrorist attacks against India, using whatever type of nuclear weapon, as an exception to the NFU, allowing a massive second strike in retaliation. But to make the threat of a second strike effective in creating the necessary fear in the Pakistani Intelligence Agency under the guidance of military forces, India needs to have effective "humint" (human intelligence) with the intelligence agents willing to penetrate the terrorist camps to find

out threats to national security. Of course, accurate intelligence is not the only thing needed to meet the threat of terrorist groups like the LeT using such weapons against India. This is not a theoretical possibility: published reports indicate that the brain behind the LeT and Jamaat-ud-Dawa, guided and controlled by Hafiz Saeed, imbued by the success of the Mumbai attacks of 26/11 is planning to acquire nuclear weapons.

However, the BJP Manifesto nowhere says specifically that NFU is subject to review. Though it is an important part of the doctrine, it is not the entire nuclear doctrine by itself. A review of the doctrine to update it to meet the contemporary challenges to India's national security, by including the above-mentioned two exceptions to the existing exceptions to the NFU, is merely an updating of the doctrine and does not necessarily equate to giving it up in favour of the FU of nuclear weapons. An FU is not a defensive use of nuclear weapons, but an offensive use in a war. Nuclear weapons have to remain instruments of high political diplomacy and not weapons of war. The NFU is not only ethical and moral, it is also a highly democratic doctrine for world politics.

## **Nuclear proliferation and non-proliferation**

Since the invention of nuclear technology, proliferation has been a political issue. The US shared its know-how with its wartime allies since the 1950s, one of which, the Soviet Union, despite becoming the US's ideological opposite during the post-war Cold War, became the second major power to acquire nuclear weapons. It shared its know-how with China, which joined the exclusive nuclear club in 1964; China also happened to be a permanent member of the UN Security Council.

Indian nuclear policy was driven more by idealism than by national interest. Throughout the Cold War, India voted for nuclear non-proliferation not only by advocating nuclear disarmament but also by being the first to join the Partial Test Ban Treaty (PTBT) of 1963. However, India refused to join two other nuclear disarmament measures, despite having actively participated in them—the Nuclear Non-proliferation Treaty (NPT), 1968, and the Comprehensive Test Ban Treaty (CTBT), 1996—on the grounds that they were discriminatory.

## **Nuclear disarmament**

It is said that the BJP manifesto vaguely mentions revising and updating the nuclear doctrine, probably in response to the then Prime Minister, Manmohan Singh, on 2 April 2014 suggesting establishing a global NFU of

nuclear weapons. If that is so, the BJP with its massive majority need not tinker with or revise the essence of NFU, just because it is also supported by the Congress. The present Indian Nuclear Doctrine also speaks about the goal of nuclear disarmament when it states: “Global, verifiable and non-discriminatory nuclear disarmament is a national security objective.” Hence, India should propose an international treaty on the global NFU of nuclear weapons in the Conference on Disarmament.

It may be recalled that it was Atal Behari Vajpayee who, for the first time, used the NFU concept in the UN in 1978 as the Minister for External Affairs in the Janata Party government led by Morarji Desai. The present BJP government led by Narendra Modi should not go down in history as the government that gave up on NFU. Instead, it should embrace the concept of a global treaty on NFU of nuclear weapons to maintain bipartisan nuclear doctrine for a strong national security strategy.

Such a treaty is a need of the hour and is possible if nations give it due consideration. The 1995 Nobel Peace Laureate, Sir Joseph Rotblat, called for a treaty among nuclear weapons states that commits them never to be the first to use nuclear weapons. The principle of NFU, Rotblat rightly thought, “would open the way to the gradual, mutual reductions of nuclear arsenals, down to zero.”

This book has three clearly identified themes: first, the issue of options for use of nuclear technology to ensure energy security; second, proliferation of nuclear technology and weapons; and, third, Indian efforts towards nuclear global disarmament. In search of options in the context of the above three themes, we propose that the following broad questions should be examined:

- a. How good is nuclear energy for energy security? How expensive is it? Are there other clean, secure, and inexpensive options?
- b. What is the significance of the CND in securing nuclear energy? What are the political implications of the CND?
- c. How far will the understanding between Prime Minister Modi and President Obama help in moving ahead with the nuclear energy option? Will it affect Indian security planning?
- d. Does civilian nuclear energy cooperation lead to nuclear weapons development? To what extent can the IAEA control movement from energy generation to weapons development?
- e. Is proliferation a virtue or a value? Why do nations turn to nuclear weapons technology? What can the nations and the UN do to end proliferation and encourage non-proliferation?

- f. Can there be nuclear disarmament? Is it an ideal or an achievable goal?

Through answers to these questions the book also aims to identify options for the Indian government. These options should also be helpful to India to determine whether there is a need to revise and update the Indian Nuclear Doctrine.

### **Sub-themes**

1. Analysis of the BJP manifesto on the nuclear theme
2. The recent push for a India–US Civil Nuclear Deal
3. Nuclear energy: energy cooperation and clean energy
4. India’s status as a nuclear weapons state
5. Nuclear doctrine: NFU
6. Nuclear proliferation and non proliferation
7. Global options for nuclear disarmament

# RUSSIA'S NUCLEAR ENERGY DIPLOMACY: STRENGTHENING TIES WITH INDIA

R. G. GIDADHUBLI

Indian Prime Minister Narendra Modi's visit to Russia in December 2015 assumed great relevance in strengthening nuclear cooperation between the two countries. Narendra Modi and Russian President Vladimir Putin laid the foundation for a long-term mutually beneficial cooperation in the nuclear sector. They signed a joint document, unfolding a strategic vision for enhancing Indo-Russian cooperation in the peaceful use of nuclear power<sup>1</sup>.

Being deficient in hydrocarbon resources, it is in the fitness of things that India tries to find alternative sources of energy to meet its increasing energy needs. Hence, nuclear power assumes importance, as it currently accounts for less than 2–3 per cent of the total energy consumption in India. This is in contrast to some of the advanced countries, such as Japan and those in Western Europe, which have a high share of nuclear power in their total energy production and consumption.

In this context, the visit of Narendra Modi to the Bhabha Atomic Research Centre in July 2014 assumes significance as it was a part of the promise made about providing ample energy for all. Considering the constraints and limitations of hydrocarbon resources, the objective of the government was to aggressively pursue alternative sources of energy, including Thorium reactor technology. Subsequently Modi had discussions with US President Barack Obama in January 2015 that led to a convoluted arrangement that partially resolved apprehensions about India's nuclear liability law. However, there was hardly any progress on the nuclear front for several months. In fact, as opined by some analysts, it would not be amiss to say that things actually slid back a little with the Chief Executive Officer of General Electric, Jeffrey Immelt, announcing that he would not risk exposing his company to India's nuclear liability law and that the GE would not be in the Indian nuclear business. Similarly, even the much-hyped

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<sup>1</sup> Chaudhury, Dipanjan Roy. "India and Russia Sign 16 Agreements, Russia to Help Build 12 Nuclear Reactors." *Economic Times*, 25 December 2015.

nuclear understanding with Japan did not result in much progress, which was evident because the Prime Minister made no mention of nuclear power at the international climate change conference held in Paris in 2015.

On the other hand, the outcome of discussions on nuclear issues with Russia has been very welcome news. First, it is important to note that Narendra Modi met President Vladimir Putin a few times during the last couple of years including at the meeting of the Shanghai Cooperation Organization in Ufa and the subsequent official visit to Moscow in December 2015.<sup>2</sup> The outcome has been positive. The Prime Minister announced that India was keen to acquire twelve Russian reactors for two sites. The first of these sites is Kudankulam where one Russian 1,000 MW reactor (a Water-Water Energetic Reactor or VVER reactor) has already been operating. In fact the plan for this site was originally finalised in 1989 for two reactors with the option of expanding to eight units. But this was delayed partly due to several factors including the collapse of the Soviet Union, the Indian economic downturn, and anti-nuclear protests that delayed the work. The first reactor went online only in 2014. Although in principle six reactors were originally to be built at Kudankulam, it has been the practice of the Department of Atomic Energy to sanction two reactors at a time. Hence reactors in India have always been built in pairs at each site—at Narora, Kaiga, Kakrapar, Tarapur, Chennai, and Rawatbhata. It is important to note that the Russian President Vladimir Putin also stated that unit 2 of the Kudankulam plant in Tamil Nadu, being built by Russia, will be commissioned soon and that negotiations were at an advanced stage for units 3 and 4.

Second, as per reports, the second site for six more Russian reactors will be in Andhra Pradesh, though the actual location is yet to be identified. These are likely to be slightly larger VVERs, with 1,200 MW each. Interestingly, Andhra Pradesh is already in line to receive six of GE's 1,520 MW Economic Simplified Boiling Water Reactor (ESBWR) reactors at Kovvada. There is speculation whether the Prime Minister's announcement means that the Kovvada project would be handed over to the Russians. If so, Andhra Pradesh will be home to 12 reactors; in fact, its interest in procuring Russian reactors is not a surprise. This is because in June 2015 when West Bengal balked at having two Russian VVERs at Haripur, Andhra Pradesh Chief Minister Chandrababu Naidu offered his state as a potential home for the displaced reactors. Thus, this marks a sharp departure from the earlier decision of Andhra Pradesh to rely on oil and gas to meet its energy needs.

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<sup>2</sup> "Russia plans to build at least six nuclear units in India." *Radio Free Europe Radio Liberty*, 25 December 2015.

The biggest challenge for the new set of VVER reactors to be set up with Russian assistance is the cost aspect, given the questions raised by the vendors on the uncertainties surrounding the Indian domestic Nuclear Liability law. The two new Russian-designed VVER-1000 reactor units to be set up at Kudankulam in Tamil Nadu, where two identical units (KKNPP 1 and 2) are nearing being commissioned, entail a sanctioned project cost of Rs 39,849 crores. This would translate into a cost of nearly Rs 20 crore per MWe (megawatt electric) as against the established benchmark project cost of Rs 7–10 crore per MWe for the existing nuclear projects, based largely on indigenous PHWR (Pressurised Heavy Water Reactor) technology.<sup>3</sup>

It is important to note that from the Indian perspective, cost estimates are worked out keeping the Russian rouble as the currency peg, something that should be to the advantage of India considering the sharp depreciation of the rouble against major currencies ever since the Ukraine-related international sanctions were slapped against Russia. Hence the first set of Russian VVER reactor-based projects set up in the country at Kudankulam—KKNPP 1 and 2—had a sanctioned cost of Rs 17,270 crore, which is up for revision currently.

Third, it is important to note that Modi's Russian nuclear package also comes with a "Made in India" bonus, which is his prime economic objective.<sup>4</sup> This is because Rosatom, which is the Russian nuclear reactor manufacturer, will be sourcing more components from Indian suppliers. In fact, according to the joint statement: "India and Russia will expand their cooperation in science and technology, industry, localisation of equipment and spares, Uranium mining, fabrication, and supply of nuclear fuel, management of spent fuel and in other aspects of the nuclear fuel cycle."

It is believed that Rosatom may well ask Indian companies to assemble knocked-down kits as Russian defence contractors have done in the past with the Indian industry. This will be a significant positive development because from a governmental perspective, the most positive aspect of this deal is that it will go through. This is because India's Nuclear Liability law, enacted in 2010, delayed or scuttled many other promising ventures such as the ones at Mithi Viridi and Kovvada. In fact, Jaitapur has also had its share of delays on account of environmental clearance. Hence Rosatom has been the only international vendor that has stuck with India, though it has worked up a substantial hike in the price of its reactors in a renegotiated contract: while Kudankulam I and II cost the Indian taxpayer

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<sup>3</sup> Prabhu, Jaideep. "India's Nuclear Deal with Russia Is a Good Development, but Nowhere Near Enough," *First Post*, 26 December 2015.

<sup>4</sup> Roy, Shubhajit. "'Make in India' to be at the Centre Stage of India-Russia Strategic Relationship," *Indian Express*, 26 December 2015.

approximately Rs 17,300 crore, Kudankulam III and IV will cost around Rs 39,500 crore. Some analysts believe that not all the approximately 130 per cent hike can be explained away by inflation and exchange rate fluctuations. There are also doubts whether *Rosatom* will actually pay damages in the extremely unlikely event of a nuclear accident at Kudankulam. Although the operator is committed to a no-fault liability, the supplier's liability can easily become bogged down for decades in courts under a mountain of technical data and legal manoeuvres.

Notwithstanding the above issues, the deal is good for India. It is well known among technocrats and scientists that Russia's VVER reactors are among the more advanced Gen III+ designs and will provide clean, cheap, and reliable energy. The only drawback of the outcome of Moscow talks is that India's joint venture with Russia on nuclear energy cooperation envisages only 12 reactors over the next 20 years.

Fourth, Indo-Russian ties were strengthened during the historic visit of Narendra Modi to Moscow in December 2015. As stated above, Russia and India signed 16 cooperation agreements, including over the nuclear energy sector, hydrocarbon, solar energy, railways, and visas.<sup>5</sup> It is important that the two countries also signed a pact on "cooperation in the field of helicopter engineering." Prior to that, India had already approved the purchase of five S-400 air defence systems from Russia. Russia and India have agreed to jointly build multi-task Kamov-226 helicopters. Hence such wide ranging cooperation between the two countries was expressed in the Kremlin by the Russian President Vladimir Putin who stated: "It is a pleasure to note that we are consistently and confidently developing the privileged strategic partnership between Russia and India. Our relations are developing in all areas: this applies to political matters and the coordination of our efforts on the international arena; it also applies to the economy and humanitarian cooperation." There was a positive response from Modi who also reiterated that Russia has been a strong and reliable friend of India in the political and international arena.

Fifth, India has been a privileged partner in Russia's oil sector. India's ONGC has been actively operating in Russia for around the last two decades. At present ONGC has been in talks to increase its stake in the Vankor oil field in Siberia owned by Russia's top oil producer, Rosneft, in line with one of the documents signed in the presence of Vladimir Putin and Narendra Modi. The MoU signed by Indian Oil Corporation Ltd and Oil India Ltd with Rosneft paves the way for the acquisition of a stake in Taas-Yuriakh oil assets in East Siberia. It is significant to note that Russia's gas

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<sup>5</sup> "Nuclear Talks: Russia Offers India a Role in New N-plants," *Indian Express*, 13 July 2015.

export monopoly, Gazprom, made five large-scale shipments of liquefied natural gas to India in 2015 to meet India's energy needs.

Sixth, the leaders of India and Russia have reaffirmed their commitment on the nuclear front and the joint statement issued has reaffirmed that the cooperation is based on peaceful use of nuclear energy as the "cornerstone" of the Russia-India strategic partnership.<sup>6</sup> Moreover, the cooperation is to be extended in a wise diplomatic move to the area of joint extraction of natural uranium and the production of nuclear fuel and atomic waste elimination. It is important to note that both India and Russia have a joint vision for cooperation in nuclear energy, aimed at the serial construction of nuclear power units, based on Russian designs and existing and possible future bilateral agreements. India and Russia will expand their cooperation in science and technology, industry, the localisation of the production of equipment and spares, uranium mining, the fabrication and supply of nuclear fuel, the management of spent fuel, and other aspects of the nuclear fuel cycle.

Seven, it is of great importance for India that Russia has proposed a plan to involve India in building Russian-designed nuclear power stations in third world countries. The Russian proposal to jointly build nuclear power plants in third world countries is significant, considering that Rosatom has 29 nuclear reactors in various stages of planning and construction in more than a dozen countries in the world. These include Jordan, Hungary, Egypt, Iran, Finland, Turkey, and Argentina. When this proposal materialises it will boost India's image and status in the world.

Last, both Russia and India possessing advanced technologies have converging interests in preventing the proliferation of weapons of mass destruction, while promoting the use of nuclear energy for peaceful purposes. This is reflected in their participation and positions in international forums such as the Conference on Disarmament, IAEA, Global Initiative to Combat Nuclear Terrorism, and stringent national export control measures. Hence the Russian side confirmed its support of India's intention to seek full membership of the Nuclear Suppliers Group and its readiness to facilitate a positive decision of the group on this matter.

While Russia stands out as the most important partner in India's nuclear energy sector, India has made some progress in seeking cooperation with other major global nuclear players including the US, Japan, Australia, Canada, Kazakhstan, and so on.<sup>7</sup> For instance, in 2015 under Prime Minister

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<sup>6</sup> "Putin: Russia Ready to Build 'More Than' 20 Reactors in India," *RFERL* 11, December 2014.

<sup>7</sup> Government of India, Department of Atomic Energy. "Civil Nuclear Cooperation—A Year of Solid Achievements," *Press Information Bureau*, 30 December 2015.

Narendra Modi's leadership, there has been some achievement in the field of civil nuclear cooperation agreement with the US, the Administrative Arrangement for implementing the agreement has been signed, and the India Nuclear Insurance Pool has been set up to implement an understanding on civil nuclear liability, which has addressed international and domestic concerns on India's Civil Liability for Nuclear Damage Act of 2010. Similarly, civil nuclear cooperation with France has also been taken forward during the Prime Minister's visit to France in April 2015 and a MoU between M/s Larsen and Toubro and M/s Areva aimed at cost reduction by increasing localisation for the Jaitapur project in Maharashtra was signed.

During the Prime Minister's visit to Canada in April 2015, India signed a contract for the long-term import of uranium and the first consignment arrived in India in December 2015. Likewise, a long-term contract for the purchase of uranium was signed during the Prime Minister's visit to Kazakhstan in July 2015. The signing of an agreement on bilateral civil nuclear cooperation with Japan during Prime Minister Abe's visit to India on 12 December 2015 has brought to a close five years of negotiation on this issue. This path-breaking development was made possible by strong engagement by the leaders of the two countries.

From what is stated above it is evident that Russia has been a close, consistent, and reliable partner of India in assisting the development of nuclear power in India. This will facilitate India's objective to produce energy in several nuclear-power stations apart from the Kudankulam plant in the years to come. This reinforces the Indo-Russian bilateral relationship that has been built over the decades, strengthening political ties, trade, and economic cooperation, the defence sector, and the promotion of India's interests on global issues. The Indian Prime Minister Narendra Modi and the Russian President Vladimir Putin have reinforced these geo-political and geo-economic ties for mutual benefit.