CHAPTER : I
DEVELOPMENT OF INDIA’S NUCLEAR PROGRAM AND CHANGING PERCEPTIONS IN INDIA’S NUCLEAR POLICY
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DEVELOPMENT OF INDIA'S NUCLEAR PROGRAM AND CHANGING PERCEPTIONS IN INDIA'S NUCLEAR POLICY

Every country has a set of ideas, perceptions and resources, which, when collected and organized in the form of national guidelines, constitutes policies. The basic ideas are constant but the perceptions keep on changing and the resources are in a continuous process of development. Thus, a policy has a built-in and forward looking consistency and adaptability to change. The national policy of a country can be divided into domestic, foreign, economic and defence policy. In this nuclear age defence policy can be further divided into "Conventional Military Policy" and "Nuclear Policy". Successive Indian governments have shown ambivalence about the question whether to include nuclear weapons in the country's weapons structure. Even Jawaharlal Nehru, the first prime minister of independent India, who had a great faith in "Gandhian ideals of non-violence" and wanted development of nuclear energy for peaceful purposes made statements, which were contradictory to this ideal. In a statement made in Lok Sabha on 10th August 1960, he said "So far as we are concerned, we are determined not to go in for making Atom Bombs and the like, but we are equally determined not to be left behind in this advance in the use of this power".¹

After the 1962 War against China, the dichotomy in Nehru's thinking became more distinct. In a note to Homi Bhabha, Nehru observed, "Apart from building power stations

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¹ Quoted in A. Kapur: India's Nuclear Test, Stretching out the options or the first step towards a Weapons Programme, p-17, Center for Armament and Disarmament, California State University, Los Angeles, Occasional Paper No.4, Summer 1975.
and developing electricity, there is always a built-in advantage of defence use if the need should arise.  

The change in Nehru's position on nuclear weapons was not purely the result of the threat from China, as China had not acquired nuclear weapons by the time Nehru died. India had a stable and coherent nuclear policy for nearly sixteen years in post independent India. The policy which was adopted by Jawaharlal Nehru had its origin in the Gandhian Philosophy of Non-cooperation and Non-violence, which were the major planks of our to the national defence issue but wanted to institutionalize non-violence, which had major implications for our future defence plans.

Homi. J. Bhabha, a brilliant physicist and the father of India's nuclear programme exercised considerable influence over Nehru and kept the military option open to produce nuclear weapons. Thus, the Tata Institute of Fundamental Research (TIFR) was established in 1944 by Homi. J. Bhabha on his return from England. India's nuclear weapons programme owes much to Dr. Bhabha's ideas before independence and its materialization there after. Nehru, who was all for scientific and industrial modernization, extended all support to Dr. Bhabha in his maiden venture for nuclear energy.

India's vast Thorium resources further accentuated nuclear development despite its handicap in Uranium reserves and technological resources. India also had conventional fuel sources like Hydroelectric power, Coal, Natural Gas but most of them are not enough to meet the future needs of the country. So keeping in view these resources particularly Thorium and Coal (which is also in abundance), the Indians laid down their

nuclear development strategy in three phases.  

(a) The development of natural Uranium Heavy Water Reactors.

(b) To make Fast Breeder Reactors (FBR).

(c) To produce Thermal Breeder Reactors (TBR).

The resultant large input of power would give the desired level of economic progress needed for a country like India. A four tier nuclear power programme was chalked out in the early days of development.

(a) To acquire self sufficiency in all aspects of nuclear technology. This would help India to use its large reservoirs of Thorium.

(b) To develop nuclear power reactors using natural Uranium as fuel and heavy water as moderator. These reactors were to be used both for producing electric power and for converting Uranium into Plutonium as a by-product.

(c) The Plutonium so produced was to be used in the Fast Breeder Reactors (FBR). Then later on to use these reactors for the conversion of Thorium to Uranium-233, which can be used as a nuclear fuel.

(d) Ultimately to develop a nuclear power programme entirely based on indigenous resources of Thorium by making U-233 Thorium Breeder Reactors, using U-233 as a nuclear fuel.


Nuclear Programme:

The Indian nuclear programme can be divided into four time periods and stages:  

1. **THE FIRST PHASE** extended from the year 1944 to 1956, when the Tata Institute of Fundamental Research was founded with the collaboration of the Sir Durabji Tata Trust with Dr. Homi. J. Bhabha as its Director, who remained as its Director till his death in 1966.

   The Department of Atomic Energy was created in 1954 under the direct charge of the Prime Minister. The largest nuclear establishment in the country, the Bhabha Atomic Research Center (BARC) was set up 1956 with the commissioning of the APSARA Reactor. Since the main aim of India’s nuclear programme was to overcome economic depression by becoming self reliant in nuclear energy as a source of power for the nascent Indian industry. Dr. Bhabha laid down a strategy during the first phase consisting of:

   (1) The installation of natural Uranium heavy water reactors for producing power and Plutonium in the first stage.

   (2) To develop breeder reactors.

   Dr. Bhabha’s sound assessment of the technological and economic requirements of the country provided motivation for development of a successful nuclear programme. Furthermore Dr, Bhabha’s personal contacts were also used to acquire assistance from nuclear power states. For example contacts with Sri John Cockroft

5. *ibid*, p-10
6. *ibid*, p-11
helped to get enriched uranium for APSARA. Likewise his presiding over the First Conference on the Peaceful Uses of Nuclear Energy at Geneva in 1955 enabled the country to secure a deal for CIRUS.\(^7\)

2. **THE SECOND PHASE** of India's Nuclear Programme was between 1956 to 1966. During this period much emphasis was laid on training and buildup of a scientific research infrastructure for nuclear technology. In 1959-1960 CIRUS was commissioned as a larger research reactor with Canadian help. In 1958, the Atomic Energy Commission was reconstituted with full executive and financial powers. In 1963, an agreement was signed between USA and India, in which the US was supposed to supply Uranium fuel for the TARAPUR Reactor along with other materials.

Canada helped the Indians to set up CANDU (Canadian Type Deuterium Uranium) type reactors for boosting the local industry and technological development in plant installation.\(^8\)

3. **THE THIRD PHASE** of India's Nuclear Programme (1966-1970) is a continuation of its first two phases. This phase commenced with the sad demise of Dr. Bhabha, which was a major set back to the nuclear programme. In addition to certain technological programmes, the programme also fell victim to international politics.

**Change in perception brought about in 1960's:**

Three factors influenced Government of India's thinking on nuclear weapons during the mid 60's.

\(^7\) ibid, p-12
\(^8\) ibid, p-14
(a) The 1962 War with China led to serious thinking on nuclear option, which coincided with the conventional buildup;

(b) The death of Nehru permitted a new and hawkish political debate on the defence options open to India; and

(c) China's 1964 nuclear test offered the government a convenient argument for keeping open the nuclear option. From this point till the nuclear test in 1974, public opinion appeared to favour increasingly the pursuit of nuclear weapons. According to public opinion survey conducted in Delhi, Calcutta, Bombay and Madras throughout the late 1970's, strong support existed in favour of India going nuclear. The urban based, conservative party, the Jana Sangha (later the Bharatiya Janata Party, the BJP) was the most out spoken pro bomb party-as it is now one which gained in popularity. Strength of feeling in favour of the bomb was particularly marked in Delhi. 9

India's stand on the Nuclear Non Proliferation Treaty of 1968:

India's complex and sometimes contradictory stand on Non-Proliferation is fundamentally linked to the policy of non-alignment. Nehru never wanted India to be dependent on Superpowers on such key areas such as energy supply and development, defence against China, and India's role in world affairs. He wanted to India to keep its option as open as possible and not to allow the Superpowers an opportunity to compromise either economic or political security as it was a question not only of political sovereignty but also of development.

India's stand on the Non-Proliferation Regime was brilliantly articulated by V. C. Trivedi, India's envoy to the Eighteen Nation Committee on Disarmament (ENDC) at Geneva, and B. N. Chakravorty, India's Ambassador to the UN. The Indian diplomats argued that the crux of proliferation problem lay with nuclear weapon states rather than with others, who may display a future interest in nuclear weapons acquisition. Second Trivedi argued that non proliferation had to be accompanied by UN security guarantees for non nuclear weapon states, presumably in the event of an attempt at nuclear blackmail.... Overall, however the central message from India was clear, nuclear disarmament by the minority (i.e. nuclear states) had to be accompanied by nuclear abstention by the majority (non nuclear states) and not the vice versa.  

Prime Minister Indira Gandhi's decision to remain outside the Non Proliferation Regime was the combined result of influence of decision makers and the sharp reaction of the public opinion not to sign the NPT. For India, the Non Proliferation Treaty was a microcosm of imbalance and the ethnicity that pervaded thinking about international relations. While the five nuclear powers considered nuclear option sufficiently tempting and useful for them to pursue the US, the USSR and the UK (China and France stayed out of NPT till 1991) demanded the rest of the world to eschew an option, which carried with it economic, military and political advantages. Furthermore the Regime would have endowed the international bipolar system with the degree of rigidity that would have severely curtailed India's freedom of action. India arguably sixth in line for nuclear status,  

10. Chris Smith, "India's Ad Hoc Arsenal: Direction or Drift in Defence Policy" Senior Research Fellow Centre For Defence Studies, Kings College, London, Oxford University Press, SIPRI, 1994, pp 182-183
could not agree to such a discriminatory policy. As to whether or not a nuclear option was to be pursued, it had to be kept open.

When the NPT finally emerged, India did not sign it on three grounds:

(i) Imbalance of obligations between nuclear and non-nuclear powers.
(ii) Inadequate security guarantees and
(iii) Discrimination in the development of peaceful nuclear explosions.

As a brilliant scholar like Bhabani Sengupta observes:

"India's military victory in the Bangladesh War of 1971 produced a paradoxical impact on the nuclear debate. The image of India as a major or dominant power whetted the appetite for the bomb...... The arguments for the bomb were now: that without it India could not expect to be admitted to the corridors of global power, nor enjoy the status of the dominant regional power; that the bomb might quicken the process of normalizing relations with China, that it would proclaim India's independence of the Soviet Union and compel the United States to change its attitude of hostility or benign neglect" 11


The national and international security scenario prompted the Indian Government to lay the ground work for carrying out nuclear explosions for peaceful purposes. The Government had appointed Dr. Vikram Sarabhai as the Chairman of the Atomic Energy Commission who presented a ten year nuclear energy programme for development of

atomic power and space research to be implemented between 1970-1980. The ten year programme involved the construction of three more 500 MW power stations, so as to bring installed capacity to 2700 MW by 1980; the building of large prototype first breeder reactors; development of gas centrifuge technology; as well as efforts in the field of space technology.  

Pokhran Nuclear Explosion 1974:

India exploded its first nuclear (underground) device on May 18th, 1974 at Pokhran in Rajasthan. By virtue of this nuclear blast, India became the first developing country to demonstrate the nuclear explosive capability through an underground explosion, the sixth nation to join the nuclear club after the US, USSR, UK, France and China. In the face of hostile reaction of the international community, India declared that its nuclear programme will be used for peaceful purposes. There was no single explanation for the decision to carry out a nuclear test and the motivation was probably a mix of several factors. It was a popular decision both inside and outside the Government as it displayed so much to the outside world- technological acumen, development and independence with the necessary degree of aggression.

Secondly, it was a mix of regional and international events like Pakistan’s perusal of a nuclear weapon programme, American tilt towards Pakistan, which propelled India to remind itself and the rest of the world that it was still an important actor in Asia.

12. ibid, p-4
13. Chris Smith: "India’s Adhoc Arsenal, Direction or Drift in Defence Policy", pp-186-187.
Thirdly, there was a pronounced domestic angle to the test. During the early 1970's, the Congress Party split, with Mrs. Gandhi's faction Congress (I)-emerging head and shoulders above the disaffected old guard led by Morarji Desai, a seasoned antinuclear (and anti-NPT) supporter, the decision as to the timing could have been taken with a view to overshadowing political opposition.

The significance of the test was essentially political rather than military. On the international stage, the fallout was considerable. India had acquired a CIRUS Reactor in 1955 from Canada on extremely beneficial terms, financial and otherwise. Canada was extremely accommodating over the supply of nuclear technology. In the agreement there were several references to the peaceful uses of nuclear technology. While India agreed to use CANDU (Canadian Deuterium Uranium) Reactor for peaceful purposes only, it was prepared only to extend such an agreement to the pieces of the nuclear jigsaw supplied directly by Canada. This did not cover the Uranium separation plant built indigenously between 1961 and 1964 at the Bhabha Atomic Research Center.\(^\text{14}\)

The Canadian Government felt deeply let down and embarrassed by the Pokhran test. Two years later, Canadians withdrew all co-operation and assistance to India's nuclear programme. Adverse reactions also came from several other countries like Japan, the Netherlands, Sweden, the UK, the USA and of course Pakistan. In France, however the Chairman of the Atomic Energy Commission sent a telegram of congratulations to his Indian counterpart. Surprisingly, China greeted the event with indifference.\(^\text{15}\)

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15. ibid, p-144
The USA had trained more than thirteen hundred nuclear scientist and technicians from India and had also extended subsidized loans and research grants for applied and pure research in this area, refused to supply spare parts and enriched Uranium for the RAPP-I (Rajasthan Atomic Power Plant) thereafter. In doing so, it revoked the 1963 bilateral agreement, which extended US co-operation in nuclear energy for thirty years, an issue which has conditioned the two countries relations ever since. France had also entered into similar agreement but showed altogether less concern than the two North American states.  

India's nuclear policy under Janata Regime:

A change in the public mood came with the installation of Janata Government headed by Morarji Desai, an ardent opponent of the nuclear option. Desai not only resurrected Nehru’s commitment that India would never make the bomb but also said that Pokhran was a mistake and took the decision that there would be no more secret explosions as long as he was Prime Minister. However, he modified Nehru’s policy in the light of changed circumstances. The modified policy stood at five negatives:

(i) India would not manufacture nuclear weapons.

(ii) No more secret explosions.

(iii) India would not sign NPT until the nuclear powers had made convincing and non cosmetic moves towards nuclear arms control.

(iv) India would not throw open its nuclear facilities to international inspection except on reciprocal basis.

India would not submit to international pressure to a nuclear policy that would hurt its national pride and its indigenous nuclear development programme.  

One of the factors which probably determined the Janata Government's nuclear policy was the highly adverse reaction the Pokhran explosion had created in Pakistan generating an instant resolve to mobilize all resources necessary to match India's nuclear capability in the shortest possible time. The Janata Government probably realized that India's nuclear profile had to be some what lowered if it were to work for regional co-operation in South Asia with Pakistan as its willing partner. It was evidently with this in view that it did not vote against Pakistan's proposal at the UN General Assembly in 1977 and 1978 to declare South Asia as a Nuclear Free Zone, thus, reversing the stand taken by Mrs. Gandhi ever since that proposal had come before the world body in 1975.

The interim Government led by Charan Singh, which had a brief existence after the collapse of the Janata coalition, appeared more sympathetic to the pro bomb-lobby. The Defence Minister C. Subramaniam listed seven factors, which he believed would have a bearing on the Indian decision.

(a) Whether Pakistan goes nuclear;
(b) Whether the two super powers continue with their unbridled proliferation of nuclear weapons;
(c) Whether the other three weapon powers continue with their own programmes;
(d) Whether Israel is deprived of its nuclear weapons and whether further clandestine proliferation takes place in countries like South Africa and Taiwan;

18. ibid, p-15.
(e) Whether the arsenals of crypto nuclear nations increase or become more lethal;

(f) Whether the interventionist tendencies of nuclear weapon powers get strengthened further; and lastly,

(g) Whether nuclear weapons get increasingly legitimized or delegitimized.

C. Subramaniam and a host of other strategic writers have identified Pakistan's aspirations as the most important provocation for India to go nuclear. Indeed the nuclear debate at the 80's and 90's have been triggered largely if not entirely by report in international press that Pakistan is close to exploding a nuclear device or already is in possession of a bomb. However, K. Subramaniam, the former Director of Institute for Defence Studies and Analyses (IDSA), has favoured India to adopt a nuclear policy at a more sophisticated level relating the issue to unjust, repressive and exploitative international nuclear regime.  

However, the two perceptions are not entirely exclusive as the later becomes more meaningful only in the context of Pakistan's nuclear programme and the clandestine assistance it is getting for it from China and North Korea (dealt separately).

The Chinese Factor:

Jasjit Singh, the former Director of IDSA referring to the growing influence of China in the development of India's nuclear policy writes, "it also needs to be recorded here that India's nuclear policy since the 1960's has been driven essentially by the China Factor."  

19. ibid, p-16

He has emphasized the challenges India is facing from a not so friendly China, which is pursuing its military modernisation along with playing a lead role in the weaponisation of Pakistan. He further writes,

"Serious uncertainties about China and the future direction of its policies will remain for quite sometime...... The disintegration of Soviet Union and the continuing politico-economic crisis in the successor states has not only opened new opportunities for China but has left it with the most powerful military establishment in Asia.....China's acquisition of military technology from Western countries and Russia (and other Commonwealth of Independent States) has increased markedly. By the beginning of 21st Century, China, which is already the biggest military power in Asia, would have acquired formidable capabilities."  

Though, there has been thaw in Sino-Indian relationship, many problems remain like the continuing boundary dispute and competition between the two for capturing the South Asian market and attracting foreign investment in a changed economic environment. Thus, there remains the fear of reversal of Chinese attitude in its relation with India and India needs an insurance against a possible Chinese nuclear threat. Nuclear weapons play an important role in providing such insurance, especially since there are no signs that China is ready to give up its nuclear weapons.

**The Pakistani Nuclear Factor:**

A book on Pakistan's Islamic bomb appeared in 1979 authored by Major General D.K. Palit and P.K.S. Namboodri of the IDSA. This was the first book on Pakistan's nuclear

21. *ibid*, p-18
bomb. The assessment of Pakistan's Uranium enrichment capacity evoked a mixed reaction from the Indian Government. While Morarji Desai was not in favour of nuclear weapons, Mrs. Gandhi took the Pakistani threat more seriously. Mrs. Gandhi gave the consent to Dr. Raja Ramanna (the then Director of Bhabha Atomic Research Center) to go ahead with preparations for an underground test. The US satellites discovered the preparations and Mrs. Gandhi came under pressure not to conduct a test.\(^{22}\)

In the intervening years, although Pakistan had been affected by the cut off of arms aid from USA, it had been able to keep the US supplied equipment fully operational. It needs to be noted that almost 80% of the Pakistan's nuclear equipment is of Chinese origin. In fact, as the Chinese military modernizes and moves up the technological ladder, Pakistan may be expected to receive spin-off benefits.\(^{23}\) India has to prepare itself against such challenges both from China and Pakistan especially when US is not even handed in its relationship with China and Pakistan vis-à-vis India.

**From Rajiv Gandhi to Vajpayee-Continuity and change in policy perspective:**

The maturation of Pakistani weapons programme finally persuaded India to take the step of manufacturing an arsenal of weapons in a decision made by Rajiv Gandhi on 18\(^{th}\) March 1989.\(^{24}\)

He gave the go-ahead for the weaponsiation of India's recessed capability. It was ironical in the sense that in 1988 he had put forward his Rajiv Gandhi Plan for Nuclear

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Disarmament in the third UN Special Session on Disarmament.\textsuperscript{25} The Agni was test fired in May 1989. The first deterrent came into existence in army 1990 with Dr. Arunachalam heading the Defence Research Development Organisation (DRDO) and Dr. P. K. Iyengar as the Chairman of the Atomic Energy Commission. Dr. Chidambaram was Director of Bhabha Atomic Research Center. At that time, the real problem was not that India did not know how to make bombs. It was how to build them to a size that fitted into an aircraft bomb pod and effectively mobilise them for deployment so that they do not go off accidentally. The 1974 device was said to be so heavy that only a transport aircraft could deliver it and so practically useless. So when Rajiv Gandhi gave the go-ahead, the DRDO which initially provided only the implosion mechanism began to get involved in a big way for the first time. By the time the 1995 test were started the DRDO and the Atomic Energy Team had made major design changes in the bomb, reduced its weight considerably and increased its yield. Missiles were also developed as delivery vehicles for nuclear war heads. So when in 1995 Narsimha Rao backed under US pressure, India had reached an all time high on nuclear learning curve. The Indira Gandhi approach of a deliberately vague nuclear doctrine had been continued by successive Congress Governments of Rajiv Gandhi and P.V. Narsimha Rao. It was I. K. Gujral, Prime Minister during the United Front Government who sought to end this ambiguity. Gujral toyed with the idea of keeping the nuclear weapons option open as a security measure.\textsuperscript{26} In an interview to the Indian Express on May 17\textsuperscript{th} 1998, Mr. Gujral


\textsuperscript{26} \textit{Asian Recorder} (New Delhi) Volume XXXXIII (28), July 9 to 15, 1997, p-26578 and \textit{The Times of India}, Mumbai, September 1997.
admitted that India was preparing for the test since Mr. Narsimha Rao’s time (that is since December 1995).\textsuperscript{27}

1995 was a watershed year as the NPT was indefinitely and unconditionally extended. The bipolarity of the Cold War days had given way to the precarious unipolar world order, where US had taken up the baton as the international policeman imposing its own code of conduct on the international community arbitrarily. India had always opposed the NPT since its inception in 1968 mainly on two grounds. First, it had felt the treaty to be discriminatory as it allowed vertical proliferation while restricting horizontal proliferation of nuclear weapons. The treaty gave access to the benefits of the nuclear technology to a select few while denying them to the rest of the world. Secondly, the treaty did not secure any security guarantee for the non-nuclear weapon states against threats of use of nuclear weapons by the nuclear haves. While India was crying itself hoarse over the clandestine nuclear buildup in the immediate neighborhood, the so called nuclear hegemons took no notice of its genuine security concerns.

The second important development was the imposition of the US sponsored Comprehensive Test Ban Treaty (CTBT), which was primarily directed against India’s nuclear weapons programme. Though it was meant to be an arms control and disarmament measure, in reality it was another non-proliferation measure. It did not cut down the nuclear weapons of the existing nuclear weapon states but merely forbade the testing of nuclear weapons by other nations. It was a meaningless exercise since it did not check testing of nuclear weapons by other non-explosive methods like testing by computer simulation. This was another discriminatory treaty as the five nuclear powers

\textsuperscript{27.} The Indian Express, Pune, May 17\textsuperscript{th} 1998.
already possessed the technological know-how to carry on testing without exploding nuclear bombs. For the first time, the Indian Ambassador's statement on June 20th 1996 in the Conference on Disarmament stated that, the nuclear issue is a national security concern for India and advanced it as one of the reasons why India was unable to accede to the CTBT.  

Presumably this tipped off the nuclear hegemonic powers like China and the UK, who in turn introduced a clause at the last minute that, India along with forty-three other nations should sign the treaty to bring it into force. This clause was coercive and a violation of the Vienna Convention on Treaties, which stipulates that a national not willing to be a party to a treaty cannot be imposed obligations arising out of the treaty. The signing of CTBT would have had a negative impact on Indian scientific and missile capabilities as it would have frozen India's capability at the existing levels and created a permanent gap between Chinese and Indian capabilities.

Thus, the May 1998 tests were a turning point in India's decision making as Prime Minister Atal Bihari Vajpayee took the momentous decision of freeing India from the shackles of neo-imperialistic bossism. It put an end to the decades of lingering ambiguity in India's nuclear defence posture.

In his statement, the Prime Minister Vajpayee spelt out the nuclear policy of his government in the post Pokhran-II phase. One, India would maintain a minimum credible deterrent. Two, India would adhere to a 'no first use' doctrine as regard nuclear

30. The Times of India, Mumbai, August 5th 1998.
weapons. Finally, India would continue its commitment to global nuclear disarmament. This third aspect was again expounded at the Non-Aligned summit in Durban.  

Continuing along this line, the Prime Minister in another statement expanded on the Indo-US dialogue on the nuclear issue being conducted between Strobe Talbot and Jaswant Singh. He argued that, India would define its own requirements for its nuclear deterrent on its own assessment of the security environment.

By putting forth a nuclear doctrine India has now elevated nuclear ambiguity to the level of nuclear strategy. The transition has been slow but change in perception is definitely clear as we have traversed the days of Nehruvian nuclear taboo to a more realistic and assertive nuclear policy of self determination of nuclear concerns and requirement in an era of strategic uncertainty.

32. The Times of India, Mumbai, December 16th 1998.