Fissile Material Cut-off Treaty and Options for India

S Rajagopal

NIAS WORKING PAPER WP1 – 99

NATIONAL INSTITUTE OF ADVANCED STUDIES
Indian Institute of Science Campus
Bangalore 560 012 India

Published by
National Institute of Advanced Studies
Indian Institute of Science Campus
Bangalore 560 012

Price : Rs. 200/-

Copies of this report can be ordered from:

The Controller
National Institute of Advanced Studies
Indian Institue of Science Campus
Bangalore 560 012
Phone : 080-3344351
Email : mgp@nias.iisc.ernet.in

ISBN 81-87663-01-4

Typeset & Printed by
Verba Network Services
139, Cozy Apts., 8th Main, 12th Cross
Malleswaram, Bangalore 560 003
Tel.: 334 6692

Preface

This working paper on "The Fissile Material Cut-off Treaty: Options for India", is part of an integrated study of the technical and security aspects of selected nuclear treaties, conventions and agreements being carried out at NIAS. The subject of the present study is an important item in the global nuclear agenda.

Further work on this project will deal not only with important treaties but also the linkages between them, often not so apparent.

The project was supported by the Board of Research in Nuclear Sciences of the Department of Atomic Energy, Mumbai.

Roddam Narasimha
Director, NIAS

Acknowledgement

This study on the Fissile Material Cut-off Treaty: Options for India, and a Workshop to discuss the options, were made possible due to a generous grant by Board of Research in Nuclear Sciences of the Department of Atomic Energy, Mumbai. The study took about two years to complete little more than what was contemplated due to various events that took place during the intervening period (the most notable being the tests of May 1998 and developments at the Conference on Disarmament) which resulted in re-writing certain portions of the report.

Dr. Raja Ramanna, Vice Chairman, NIAS Governing Council, and Prof. R Narasimha, Director, NIAS have made very valuable suggestions which resulted in the addition of more data and analysis. Dr. Deepa M. Ollapally has made a very valuable contribution to the study which has enriched the contents and presentation. Mr. Arvind Kumar, Research Associate, has provided inputs during the initial stages of the project. Gayathri N. Lokhande provided excellent secretarial assistance in bringing out this report.

I would like to express my gratitude to all of them for their support and encouragement.

S Rajagopal
Homi Bhabha Visiting Professor
International and Strategic Studies Unit

Abbreviations & Acronyms

ABM	Anti Ballistic Missile
CD	Conference on Disarmament
CFR	Council on Foreign Relations
CTBT	Comprehensive Test Ban Treaty
DAE	Department of Atomic Energy
DRDO	Defence Research and Development Organisation
GSE	Group of Scientific Experts
HEU	Highly Enriched Uranium
IAEA	International Atomic Energy Agency
INFCIRC	Information Circular
ISS	International and Strategic Studies Unit, NIAS, Bangalore
FMCT	Fissile Material Cut-off Treaty
FMP	Fissile Material Production
LEU	Low Enriched Uranium
MNCs	Multi National Companies
MOX	Mixed Oxide
MTCR	Missile Technology Control Regime
NAM	Non-Aligned Movement
NATO	North Atlantic Treaty Organisation
NIAS	National Institute of Advanced Studies
NNWS	Non-Nuclear Weapon States
NPT	Non Proliferation Treaty
NSG	Nuclear Suppliers Group
NTM	National Technical Means
NWFW	Nuclear Weapon Free World
PARAM	One of the Super Computers of India
P-5	Permanent Five
Pu	Plutonium
SCE	Sub-Critical Experiments
SPRU	Science Policy Research Unit (UK)
START	Strategic Arms Reduction Treaty
TVA	Tennessee Valley Authority
UN	United Nations
UNGA	United Nations General Assembly
U.S.	United States

Introduction

Fissile material cut-off was first proposed as a U.S-U.S.S.R arms control measure by President D. Eisenhower in 1956* but was rejected by U.S.S.R., since it felt that it was an American tactic to freeze them at an inferior level. In the intervening years, between 1956 and January 1989 when President Mikhail Gorbachev was willing to discuss the proposal, several developments took place (Annex-1), and attempts were made to stop production of fissile material but without any success. Despite the new Russian flexibility under Gorbachev, however, the Bush administration was opposed to the idea, most likely due to the U.S.S.R.'s nuclear stockpile being higher than that of the U.S. Indeed until 1993, the U.S. remained an opponent to cut-off when President Clinton revised the policy position from "opposition" to "advocacy." In December 1993, the United Nations General Assembly (UNGA) passed a consensus resolution for negotiating a "non-discriminatory, multilateral and internationally and effectively

* The idea of cut-off was first presented under the atoms for peace conference in 1953

verifiable treaty banning the production of fissile material for nuclear weapons and other nuclear explosive devices."[1] The Fissile Material Cut-off Treaty (FMCT) is currently one of the most important items on the global nuclear agenda but yet the progress of negotiations in the Conference on Disarmament (CD) has been highly unsatisfactory due to various reasons including:

1. Assigning a higher priority to Comprehensive Test Ban Treaty (CTBT) negotiations till 1996.
2. Debate on whether the cut-off should be prospective or retrospective.
3. Linkage to time-bound disarmament.
4. Concern over freezing stocks at different levels.
5. Lack of clarity on control, accounting and verification regime.

In August 1998, the CD agreed to establish an ad hoc committee on the basis of the 1995 Shannon Report[2] and its mandate in line with the December 1993 UNGA resolution. Obstacles to the resumption of discussions are reported to have been overcome with Pakistan's announcement at the July 30th Session of the CD that it would participate in the negotiations. This decision was presumably taken after discussions with U.S. earlier in July 1998. India too had by then already conveyed its decision to participate in the negotiations. Israel, it is understood, opposes any international inspection of its facilities and a FMCT which would include

stockpiles (retrospective). Despite this, Israel has agreed to join the negotiations at the request of the U.S. The U.S. argument is that Israel should support the establishment of the ad hoc committee which may be considered a procedural step, notwithstanding the fundamental problems mentioned above that it had expressed. It should be noted that Israel was not a member of the CD at the time of the 1995 Shannon Report. Moreover, the U.S. had also expressed the view that participation by itself would not mean that Israel is taking a position on the Treaty and its contents.

On 20 August 1998, Ambassador Mark Moher of Canada was appointed as the Chairman of the ad hoc committee and two meetings were held before the close of the September 1998 Session. The end result was that the committee was not able to recommend to the CD that it can continue with Ambassador Moher as Chairman for the 1999 Session[3]. The developments in 1998 point towards a stalemate.

The CD deliberations at the commencement of the 1999 Session indicate that the stalemate still remains unresolved. While the U.S. stated that the treaty verification should be under the auspices of the International Atomic Energy Agency (IAEA) and should focus on "material produced after the treaties cut-off date,"[4] Egypt was of the view that no treaty or convention could imply acceptance for the "indefinite possession of nuclear weapons by the five nuclear weapon

states specified in the NPT"[5]. In addition, Egypt reiterated strongly that the treaty's scope "should include all fissile materials potentially usable in the manufacture of nuclear weapons or other nuclear explosive devices across the world, including the military stocks possessed by all the states on an equal footing"[6]. Several non-aligned states raised the issue of time-bound nuclear disarmament, with Peru stating that "we should not stabilise indefinite management of nuclear arsenals, requiring an indefinite struggle against nuclear weapons".[7] All this go to prove that FMCT is still in a stalemate and the process of negotiations is bound to be prolonged and arduous.

In a position reminiscent of the CTBT, the U.S. has reversed its earlier stand and is now in the forefront of calling for a ban on the production of fissile material for nuclear weapons. The stated objectives are [8]:

(a) A verified ban on production to cap or constrain the NPT non- signatories (India, Pakistan and Israel).
(b) Strengthening non-proliferation regime by subjecting to safeguard all facilities producing fissile material in all states. In principle, this would be a move towards non-discriminatory application of safeguards to all states including the so-called weapon-states.
(c) Non-production of fissile materials, which would cut-off availability of the same for future production of weapons and as such would result in freezing of the arsenals.

India had indicated in the past that it would consider supporting such a Treaty, but there appears to be a policy change on this position in the context of developments that took place during and after CTBT negotiations. However, in a recent official statement, India has agreed to participate in the FMCT negotiations at the CD, presumably without any preconditions. In this context, it is important that India should provide a cogent and persuasive argument consistent with its national interests, well in advance of any Treaty negotiations, so as to avoid some of the difficulties experienced during the CTBT negotiations and its final outcome. It is important to understand and absorb the history of past negotiations of important agreements such as chemical weapons convention, CTBT, and others, and at the political level, the objectives must be clearly established without any confusion between strategy and tactics, if India is to succeed in its efforts towards achieving a Nuclear Weapon Free World (NWFW).[9]

Purpose of Study

This study is the first Report of a comprehensive analysis of a variety of important nuclear treaties and agreements and their linkages and implications for India, being undertaken by the National Institute of Advanced Studies, Bangalore. The purpose of this Report on the FMCT is to analyse various options and formulate recommendations to serve as an aid to policy initiatives. The methodology involves analysing both benefits

and risks of each option in the context of national security in particular.

Prior to taking up the analysis of options, the study provides the broad context within which to view the FMCT. The first section provides a summary of the evolution of the FMCT. The second looks at the FMCT's role in the global non-proliferation and disarmament regimes. The third section focuses on key international and regional players in the nuclear arena and their positions on the FMCT. The fourth section turns to an overview of the Indian situation vis-a-vis the FMCT, and tries to identify the most critical issues facing India in this regard. Subsequently, an analysis of the options for India on the FMCT is presented.

I. Evolution of the FMCT

Fissile materials are not only the most important and essential ingredients of all nuclear weapons but also the most difficult and expensive part of a nuclear warhead to produce. The possibility of a cut-off in the production of fissile materials for weapons use, or other explosive purposes, has been raised for international consideration numerous times in the past, beginning immediately after the dropping of the atomic bombs on Hiroshima and Nagasaki in August 1945. The first of these efforts was the Baruch Plan which emanated from the U.S. designed Acheson-Lilenthal Report of 1946.

The Baruch Plan envisaged the setting up of an International Atomic Energy Control Agency which would be entrusted with managerial oversight and control of all potentially dangerous atomic energy activities. All states would be under an intrusive inspection system. Rejecting the Baruch Plan as interfering with national sovereignty, the Soviet Union offered a rejoinder with the Gromyko Plan which prohibited the production and use of atomic weapons and destruction of all atomic weapons within a period of three months. The Soviet objection to the U.S. led Baruch Plan was that it would begin the international control of atomic material before existing weapons were to be destroyed, which would effectively privilege the United States. It is ironical that in the post-cold war era, CTBT and FMCT are once again thrust on the world without a commitment to time-bound disarmament, which would once again privilege the U.S. in particular and the P5 states in general. The only defence the U.S. has now is its proclamation that disarmament is separately addressed through START treaties.

Although the Baruch Plan failed, U.S. President Dwight Eisenhower took the initiative in promoting the widespread peaceful uses of atomic energy in 1953 with the "Atoms for Peace" speech to the UNGA. His plan was to promote disarmament by an indirect approach - that of building up the peaceful uses of atomic energy. In 1954, the U.S. Atomic Energy Act led to numerous bilateral agreements for sharing

nuclear technology and materials with other states provided they were used only for civilian purposes and safeguarded. In 1956, the IAEA was established within the U.N. system to regulate peaceful nuclear research and co-operation, as well as provide assistance for the supply of nuclear materials, facilities and technology transfer. As stated earlier, Eisenhower in 1956 had proposed a ban on production of fissionable material for weapons, but this was predictably rejected by U.S.S.R. as a tactic to freeze it in a quantitatively inferior position. It is clear that such a situation would not arise between U.S. and Russia in the current case of FMCT, but there are other countries which feel that they are being capped in an inferior position, for example Pakistan below India, India below China and China below U.S. It is the opinion of many concerned that the large disparities in fissile material stockpiles could result in a serious obstacle to a global cut-off agreement.

Subsequent to Eisenhower's 1956 proposal, both U.S. and U.S.S.R. made in 1964 unilateral policy statements regarding their intent to reduce their production of fissile materials. But it was not until early 1980s that more concerted action on this was evident. The Second Special Session on Disarmament was held in 1982, in which countries such as Mexico, Sweden and India strongly called for a "nuclear freeze" by the superpowers, including a complete cut-off in the production of weapon grade material.[10] This resolution was tabled year after year without any results. Among three resolutions passed

in the U.N. in 1983 relating to the freeze was the appeal to the CD to seek a cut-off in the production of fissile material. India introduced an important resolution in 1983 urging all nuclear weapon states to move towards simultaneous and total stoppage of any further production of nuclear weapons and a complete cut-off in the production of fissionable material for weapon purposes. In 1988, the Indian resolution merged with a Mexican resolution which also included a comprehensive test ban on nuclear weapons and their delivery vehicles along with a ban on all further deployment of nuclear weapons and their delivery vehicles.[11] Since these resolutions primarily targeted the nuclear weapons states, little support was forthcoming from the key global players.

It was nearly ten years later (December 1993, after the end of the cold war) that the UNGA finally passed the key consensus resolution in favour of a fissile material cut-off treaty. Apart from calling for multilateral negotiations to ban fissile material production for weapons, the resolution permits its use for civilian purposes and non-explosive military use such as naval propulsion. This resolution was preceded by the Clinton administration's announcement in September 1993 of a proposal for a global convention banning production of fissile material for weapons and a voluntary offer to put U.S. excess fissile material under IAEA safeguards. In March 1995, the CD began the process of moving seriously towards FMCT by appointing an ad hoc committee under the leadership of

Ambassador Gerald Shannon of Canada as the Special Co-ordinator. The CD's last meeting under Shannon relating to the FMCT took place in May 1998 without reaching any agreement.

II. The FMCT and Global Disarmament/Non-proliferation Regimes

The new found enthusiasm of the U.S. for the FMCT needs to be seen in the context of its revised nuclear non-proliferation objectives in the post-cold war era. In a departure from the Reagan/Bush years, President Bill Clinton has used both liberal internationalist ideology and hard headed American national interest to assign primary importance to non-proliferation objectives.

One of the motivations for this is most likely the so-called "military-technical revolution" which has occurred in defence industrialism and America's marked lead in it.[12] The unchallenged supremacy in precision guided munitions and electronic warfare that the U.S. enjoys (as demonstrated during the Persian Gulf war in 1991) has rendered it feasible and even desirable for the U.S. to consider elimination of nuclear weapons since that would leave it in an overwhelmingly favourable position in conventional weapons vis-a-vis others. In the most advanced conventional military technologies and logistics, some experts suggest that the U.S. could become a

near monopolist by the next century. This is in contrast to nuclear weapons which can be used to "equalise" power in an otherwise highly unequal international system.

But a more important motivation may be that, as in the case of nuclear testing, the U.S. and Russia have reached a point of plutonium (Pu) production where any addition is simply not necessary for military purposes. The U.S. decided to freeze its production of fissile material for weapons purposes in July 1992. Globally speaking, there is a glut of fissile material which is in addition to the existing glut of low enriched uranium.[13]

With the break up of the Soviet Union and the perception of the danger of uncontrolled spread of fissile material in its aftermath, the Americans are now taking the lead on gaining approval for the FMCT. There is also some move to "internationalise" and utilize the experience from the U.S.-Russian negotiations to control and dispose of fissile material from dismantled weapons according to the START agreements.

Among several disposition options such as use as fuel in reactors, vitrification, nuclear explosion in underground cavity, disposal in space and so forth, ultimately the options hotly debated are :

(a) To immobilise and store. The process would involve addition of highly radioactive wastes making it difficult for stealing or for use in weapons.
(b) Convert weapons Pu to Mixed Oxide (MOX) fuel for use in civilian reactors for energy generation in a "once through mode."

At the present moment, there is an interim decision by U.S. for converting a smaller percentage of Pu for use as MOX fuel, the remaining to be immobilised and stored. The main objections to conversion to usable MOX fuel are once again the proliferation concern and the cost of setting up MOX fabrication facilities. Moreover, the irradiated MOX will have a higher Pu content in spent fuel. Since Pu will be handled in MOX conversion facilities, there is the possibility of clandestine diversion. But the argument does not seem to hold good, since the FMCT regime will place all such facilities under comprehensive safeguards. Moreover, reprocessing cannot be banned due to the fact that the use of fissile material for non-weapons use would actually be permitted. The best policy, hence, would be to put all weapons-dismantled Pu to peaceful use and rid the world of weapons Pu rather than stockpiling and protecting for generations, which will involve huge expenditure.

U.S. has signed a five year agreement with Russia on the management of excess Pu from dismantled weapons which

involves co-operation in small scale tests and demonstration of Pu disposal technologies. As a further step, the two states have also identified about 50 metric tonnes of excess weapons Pu to be converted either to MOX fuel or stored as waste after immobilising. One other issue of importance is the decision with regard to setting up of MOX plants in U.S. and Russia involving considerable expenditure. The proposal of burning MOX fuel in European reactors seems to have been given up since the expected support from France, Germany and others is not forthcoming. The lack of a decision on this issue, it appears, is leading to a demand that the rate of weapons dismantlement and rate of Pu disposition should be matched in such a way that the risk of diversion and theft is minimised, if not totally eliminated. The rate of dismantlement and disposition has a strong linkage to time-bound disarmament and any delay would be counterproductive.

Despite whatever has been said above, Russia appears to favour converting Pu to a usable form and not to treat it as waste. France, which is the promoter of Fast Breeder Technology and one of the leading MOX users, does not support treating Pu as waste. U.K.'s position is not clear but since it operates and provides reprocessing services, it is not likely to agree to treat Pu as waste. The Chinese would opt for conversion to MOX since they too have a Breeder Programme and their internal resources of uranium are limited as in the case of India.

In this context, the case of spent fuel also needs to be discussed. As India protected its interest on spent fuel while negotiating the Nuclear Waste Convention, it has to make sure that spent fuel as it exists is considered as stock and can be reprocessed. Whether spent fuel awaiting reprocessing would be considered as stock for the purpose of application of treaty stipulation or not is still not clear, and this will have a serious implication for India which has a fairly large stockpile of reactor spent fuel awaiting reprocessing constrained by reprocessing capacity.

The problems with Highly Enriched Uranium (HEU) are not that serious since it can be diluted in terms of enrichment by blending with natural, depleted or slightly enriched uranium and used as reactor fuel. A contract to buy about 500 tonnes of HEU was signed in 1993 between U.S. and Russia with the understanding that blending down for use in reactors would be carried out in Russia. It is understood that through the year 1997, about 1038 tonnes of Low Enriched Uranium (LEU) derived from 36 tonnes of HEU, equivalent to about 1600 nuclear warheads, had been shipped to U.S. from Russia. It is also understood that this deal has run into some rough weather due to U.S. stopping payment in 1996 for the natural uranium component, and instead offering to return an equal amount of natural uranium. This has been further aggravated by the decision of the privatised U.S. Enrichment Corporation to deal at the price Russia put on the natural uranium. As a reaction to this, "draft legislation had been introduced in the Russian

State Duma, calling for the suspension of the 1993 agreement on the grounds that the U.S. had breached it by its 1996 decision."[14] This is bound to have an impact on the Duma ratifying the START II Treaty. Whatever be the ultimate decision, there has to be a balance between security concerns, safety and economics.

The non-proliferation/disarmament link is proving to be as elusive for the FMCT as it was for the CTBT. Several important countries in the non-aligned movement are keen on making the link more explicit and time-bound. The May 1995 indefinite extension of the NPT and the September 1996 passage of the CTBT, both without gaining any genuine disarmament commitment on the part of the nuclear weapons states, however cast serious doubts whether it will be any different for the FMCT.

III. Key Actors and the FMCT

As in the case of the CTBT, the key actors would be the P5 states and the Non-signatories to NPT (Israel, India and Pakistan). While the P5 stopped producing fissile material for weapons use, China is an exception in the sense that there is no official declaration of stoppage. In the case of Israel, India and Pakistan, it is a known fact that unsafeguarded fissile material is being produced and the recent tests by India and Pakistan are clear indicators of its use in weapons. Though

Israel has not tested a bomb yet, its capability and readiness to deploy nuclear weapons is well known.

Russia is not placed in a very different situation from U.S. with regard to FMCT. Their stockpile of Pu and HEU is significant, despite the fact that a large quantity of both have been bought over by U.S. on grounds of security, especially the possibility of terrorists getting access. FMCT would hence receive the support of Russians, but their attitude to comprehensive safeguards, which would reveal their weakness in terms of safety, material control and accounting, is difficult to foresee. One other important factor is that START II is still not ratified by the Duma, which is an indicator of Russia's concern at NATO expansion and the possible loss of superior conventional power status, pushing them to hang on to nuclear weapons as a balancing act. The U.S. has no such compulsions.

France and U.K. are likely to support FMCT as they did in the case of CTBT. In the case of China, the present indications are that FMCT would be supported. Israel has a stockpile of fissile material and has signed CTBT though not NPT. This clearly indicates the serious possibility of Israel already possessing nuclear weapons. Israel is hence likely to fall in line with the group of adherents subject to the condition that the treaty would be applied prospectively to fissile material production and that safeguards will be non-discriminatory. In the case of India and Pakistan which have demonstrated their

nuclear weapons capability, Pakistan appears to demand a "retrospective" treaty for it feels, otherwise, it would be capped below India. Though India also faces the same situation vis-a-vis China, there has not been any strong official statements other than indications that it would not accept a retrospective treaty and that the accumulated spent fuel should be treated as stockpile. To address the problem of inequalities in stockpile among various states, one of the proposals is that states with inferior stockpiles could declare a moratorium on production and join the treaty at an appropriate time when the stockpile in countries of concern to them decreases to a level equal to its own, with an additional condition that there will be a reversal from the moratorium if the disarmament process does not take place at a desired or committed pace.[15] This would to some extent protect the interests of China, India, Pakistan and Israel. Moratorium on fissile material production before the treaty comes into force, without a commitment to time-bound disarmament by P5, would be risking a slippery slope in light of the negative experience of the total neglect and indifference of the P5 to their commitment under Article VI of NPT.

IV. The FMCT and Critical Issues for India

The basic question for India is whether there is any set of circumstances which could strongly influence the signing of FMCT. In order to consider this, India's security objectives in the short and long term have to be clearly formulated, and the

consequent steps to achieve them identified. It has to be kept in mind that with the end of the cold war, India's security in the foreseeable future will have to be ensured with its own capabilities to a greater extent than before, with a clear perception of threat and of the capability to meet them. On the other hand, economically India's intertwinement with global economic forces and players is being deepened at a rapid pace in a departure from the past; this can be both an opportunity as well as an obstacle in terms of India's security policy.

Having exploded nuclear devices and having taken the necessary steps towards weaponisation, India has to have a proper means-end analysis between its capability and needs. Specifically, if China rather than Pakistan is to be viewed as the primary target of Indian nuclear "deterrence," then the pressures on the Indian nuclear weaponisation would be of a different character and magnitude, with important implications not only for fissile material decisions but also the attendant delivery systems. On this key question, there appears to be very little study being done.[16]

The technical aspects of FMCT relate to stockpiling; processes such as reprocessing, enrichment and separation techniques, plant types and construction; verification; civilian versus military applications of Pu; and whether the Treaty should also include stockpile and spent fuel (which will be a very large source of Pu in the near future [figure-1(a) & (b)], much

in excess of that released from weapons). The present study will consider some of these issues while discussing the various options.

India currently faces no legal constraints on production of fissile material for weapons, similar to the nuclear weapon states, and NPT non-signatories Pakistan and Israel. The P5 have already stockpiled enormous quantities of fissile material both as weapons and those released from weapons consequent to arms reduction (refer to Table 1 and 2). The U.S. and Russia hence have excess weapons Pu; and Britain and France seem to have concluded that there is little security justification for building up their weapons Pu any further and that their current stockpile levels are adequate. For India, the problem is more political than technical. The country has demonstrated that it has the necessary technical capability in both nuclear testing and the production of Pu, but the question is whether it has reached a stage of sufficiency in providing adequate deterrence with reference to the capabilities of its immediate neighbours, at least for a time period before the much talked about total disarmament is achieved. It is also to be emphasised that a "freeze" at this point of time does not have any effect on the P5, especially U.S. and Russia, which have large stockpiles. It is so very evident and not too difficult to conclude that the target nations of FMCT are India, Pakistan, Israel and perhaps to some extent China.

FMCT Options for India

Six possible options for India are identified and analysed in terms of benefits and risks. These six options are:

Option One : Sign as is.
Option Two : Sign but with conditions.
Option Three: Sign with quid-pro-quo.
Option Four : Declare moratorium on fissile material production.
Option Five : Sign CTBT, declare moratorium on fissile material production .
Option Six : Reject FMCT

Overview On Options

Almost every year since 1945, UNGA has been adopting a variety of resolutions on non-proliferation, disarmament and other nuclear issues, but with limited impact. This has been largely so due to lack of seriousness on the part of the P5, especially U.S., towards disarmament vis-a-vis non-proliferation. Wherever the interests of the P5 are significant, they have adopted all means to use UNGA resolutions and translated them into treaties, as can be seen from the indefinite extension of NPT and CTBT. Further, in the case of CTBT, India signing the treaty was made conditional for the treaty to come into force, which is a classic example of manipulation and coercion.

NPT is the corner stone of the commencement of the non-proliferation regime. By the indefinite extension of the NPT in 1995, the treaty and hence its contents have acquired a timeless dimension, legitimizing the two categories of "haves" and "have nots". The concept of CTBT and FMCT took birth along with NPT but was never given the due importance by the P5 obviously to carry on with the arms race as well as retain a militarily superior position, by forming cartels and constituting several denial steps, with the objective of ensuring the blockade of technology development. After the cold war and with the changed environment, it became necessary to institute such steps that will ensure certainty of the non-P5 not competing in any way with the P5 and maintaining P5 superiority. Obviously, the choice is to revive actively CTBT and FMCT calling them steps towards disarmament, which is strictly speaking not so. These are in effect non-proliferation measures to ensure the superiority of P5s and perpetuate the denial regime, with no commitment to disarmament. In this process, the P5 do not seem to accept that the needs of national security which they themselves claimed as the reason for developing atomic weapons are of any relevance for others.

In response to the U.S. proposal, the UNGA recommended in December 1993, by a consensus resolution 48/75L, negotiation in the most appropriate international forum regarding a non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for

nuclear weapons and other nuclear explosive devices. The resolution also requested the CD to consider how and where a ban on the production of fissile materials could be negotiated.

Since CTBT had a higher priority over FMCT, it was only in 1995 that a mandate was agreed upon and an ad hoc committee was set up. However, there was no significant progress during the years 1996-98 mainly because of differences over the scope of the treaty. The two important aspects which stalled the treaty relate to cut-off time (prospective/retrospective) and linkage to time-bound disarmament. Pakistan has been demanding a retrospective cut-off even suggesting that FMCT should be renamed as "Fissile Material Treaty" (since "Cut-off" in FMCT implies future production only) . Similarly, G-21 countries have been demanding formation of a concurrent ad hoc committee to discuss time-bound disarmament which could also include Security Assurances, Middle East Peace Processes etc.

An important feature of the treaty is that fissile materials for military and peaceful uses and not related to nuclear weapons are not restricted. Under this would fall fuel for naval reactors, research and power reactors etc. This separation in scope would demand the continued use of enrichment and reprocessing facilities and application of strict safeguards to ensure that the fissile material produced for non-weapons purposes does not find its way into weapons use clandestinely.

Non-discriminatory safeguards would naturally mean "full scope" under FMCT. What the implications of the safeguards are, for countries who are non-signatories to NPT and weapons capable, is an issue of great importance needing in depth analysis, especially in the context of one's national security and the slow progress towards global nuclear disarmament. The issue gets more complicated when a state has to live within close proximity of a weapon power.

While UNGA resolution (1993) and the subsequent Shannon Mandate (1995) present a broad canvas to view FMCT objectives, the specifics (as in CTBT) are yet to be agreed upon. There has been no movements in CD even to commence negotiations. In the light of the above, 'as is' referred to is what is generally understood or interpreted of the UNGA/ Shannon statements with regard to Scope and Verification which are two important elements of FMCT. In this report under option one, the assumptions are:

- Scope: Prospective
- Verification: Limited i.e. commencing from process like
- reprocessing, enrichment etc.

  Safeguards: By IAEA, non-discriminatory including P5.

The Options that follow will therefore have to be assessed taking into consideration what has been stated above.

Option One: Sign As Is

Benefits

(i) Possible slackening of technology controls and embargoes.

(ii) Prospects of better Indo-US bilateral relations and co-operation in the areas relating to security, economic development, and South Asian stability.

(iii) Possible projection of a better image of India by P-5.

(i) Possible slackening of technology controls and embargoes

After India conducted a nuclear test at Pokharan in 1974, the denial of advanced technology by U.S. and Canada became one of the important components of their foreign policy. The refusal by the U.S. to provide spare parts to Tarapur Power Station, followed by a similar refusal on fuel supply, was the immediate fallout of the explosion. Canada discontinued nuclear co-operation at all levels. For India, technological advancement is a key ingredient for developing comprehensive strength not only to ensure national security but also to provide its large population with a better quality of life. The tool of technology denial was adopted by the developed nations to maintain their dominance in the hierarchical structure of the international system. India has been at the receiving end of such measures not only during the cold war but also after. In the post-cold war period the denial regimes have been

re-oriented from East-West to North-South frame work. For more than two decades, India figures prominently on the technology control radar screens of the advanced nations.

Though the control and embargo regimes that followed the1974 and 1998 tests have been a blessing in disguise, in the sense that it has given a big push towards indigenisation and selfreliance in core sectors as is evident from the developments that have taken place over the past 25 years in the areas relating to atomic energy, defence and space, there is no denial of the fact that all these developments are not without a penalty in terms of cost and time which a developing country like India can ill afford.

With the above as background, one could look at the possibility of the "need" and "effect" of slackening or at least softening of export control regimes and embargoes. In some areas, there has been already a slackening of export controls in response to the global diffusion and development of indigenous technologies. One such example is in the area of high performance computing. U.S. has been compelled to liberalise its export policy in response to the availability of more powerful super computers from other suppliers, including India. India was earlier denied an export license for a U.S. Cray XMP-14 super computer which resulted in India developing its own parallel processing computers, one such being PARAM. The history of technology controls which took shape in the form of a group dominated by industrialised nations suggests that

the spread of advanced technologies is sought to be controlled or prevented, most likely to thwart the objectives of emerging powers to achieve and maintain technological superiority. This appears to be the motivation for the weapon states to pursue vigorously non-proliferation and disarmament.

In the existing scenario, three developments[17] are underway on the technology control front as part of the new U.S. strategies and initiatives:

* the regulatory focus of technology controls is changing ominously from an east-west perspective to a north-south perspective, with the ex-target states in the east block being brought into multilateral regimes and encouraged to set up national export control mechanisms;
* all possible dual-purpose technologies are being subjected to export controls, with the result that all high technologies are consciously being kept beyond the reach of the targeted countries; and
* the principal targets, as acknowledged by western officials, are now increasingly South Asia (defined as India and Pakistan) and the Middle East excluding Israel.

As already stated, the "need" for import of necessary and relevant technologies depends on several factors:

1. To avoid loss of time and the attendant cost, India has the competence to decide on what is the state-of-the-art in

critical technologies needed. The absence of such competence could result in obsolete technologies being dumped, as happens very often. India has the ability and capability to build on technologies imported to enable leap-frogging.

2. In the case of buying equipment, there is always the alternative of making it, which is mainly dependent on economic considerations and availability.
3. Borderless exchange of technologies and information would enable use of pooled expertise and facilities leading to a healthy co-operative environment and a step towards confidence building.

The "effect" could be slowing down on the effort of indigenisation and lesser emphasis on selfreliance. Every crisis India faced has taught the lesson that there is no substitute for developing internal capability and strength. Nevertheless, one cannot deny the fact that there is a technology gap that exists between the developed and developing countries which needs to be bridged in the larger interests of achieving international stability. The slackening of controls would hence be of help, if there is no unacceptable compromise in any form attached.

***** [The main multilateral technology-controls are the Zangger Committee, the Nuclear Suppliers' Group (NSG) (the "London Club"), the Missile Technology Control Regime (MTCR) and the new Wassenaar Arrangement. For details, refer to Annex-2 (a) & (b)].

(ii) **Prospects of better Indo-US bilateral relations and co-operation in the areas relating to security, economic development, and South Asian stability.**

One other important benefit for India could be a general improvement in building confidence between India and the West and forging mutual co-operation in a number of areas indicated above. Paradoxically, it has not been possible to maintain a stable and balanced relationship between India and U.S., despite the countries being the two largest democracies with shared values. Signing the FMCT by India in the present form could provide an impetus for the U.S. to make a renewed search for common ground. From an Indian perspective, senior officials of the Clinton administration have to be sufficiently informed and convinced about the national security compulsions facing India.

The existing global scenario gives reason for both countries to desire better ties. The study done in 1997 by the New York based Council on Foreign Relations (consisting of several high level experts and former policy makers) titled *A New U.S. Policy Toward India and Pakistan* suggests that the Clinton administration should take a fresh look at India in the context of its engagement with Asia in a strategic sense. The recommendations given by the Task Force seem to go beyond earlier American analysis. The main tenets of the study basically suggest that the U.S. discourage further proliferation,

and establish a more stable plateau for Indian and Pakistani nuclear weapon and missile competition. It suggests that the U.S. should seek closer bilateral political and military co-operation over the long term, especially with India. A strong and friendly India could play a key role in helping to maintain stability and economic growth across Asia.

To explore the possibility for a closer relationship as well as to provide incentives for Indian restraint in the nuclear weapon and missile areas, the Task Force recommended that the U.S. adopt a declaratory policy that acknowledges India's growing power and importance; maintain high-level attention including regular reciprocal visits of senior officials; loosen U.S. constraints upon the transfer of certain dual-use technologies (including computers and peaceful space launch equipment); increase military-to-military co-operation (including broader contacts, exchanges, and joint exercising); co-operate on elements of India's civilian nuclear power programme and other energy related issues; and undertake limited conventional arms sales. Though the study was done in 1997 and subsequent developments both in India and Pakistan have resulted in a significant change in the U.S. attitude, the recommendations still appear to be valid and important.

An important segment of U.S. policy toward India and Pakistan after the tests is reflected in a subsequent study by an Independent Task Force convened by the Council on Foreign

Relations and the Brookings Institution.[18] The report endorses the 1997 conclusion by reiterating that "India has the potential to be a major power in Asia as the next century opens," and recommends that U.S. foreign policy should reflect this and accord a higher priority to South Asia. It also recommends a "stronger push for authority to waive sanctions and a greater public articulation of the fact that U.S. interests in South Asia include but are not limited to discouraging nuclear proliferation."[19]

The U.S. has provided support and encouragement for the process of India's liberalisation, but it can step up its efforts in this area even further - by sharing relevant technical, administrative, and financial expertise; by working in conjunction with other national governments and international financial institutions; and perhaps even by providing direct economic incentives (including U.S. assistance and support for India in international financial institutions) in response to further progress in liberalisation.

India's economic reforms have created immense demand for foreign direct investment in practically all major sectors of U.S. competitive strength. These include power, oil refining, food processing, biotechnology, and computer software and services. In 1994, the Commerce Department of U.S. identified India as a 'Big Emerging Market.' Top U.S. corporations, led by General Electric along with a handful of other regional influence, have put together an informal India interest group

to exert influence, in Congress and improve overall ties. The most important reason for this transformation is organised lobbying on India's behalf by U.S. corporations interested in doing business in India.

During 1991-95, American MNCs were India's largest source for foreign direct investment, which provided 26 percent of the country's total investment from outside. The largest share of U.S. investment, hovering around 50 percent, went to manufacturing, with the consumer sub-sector accounting for a little more than half of that total. Other major investments were made in banking (28 percent), energy (9 percent), and computers/software (9 percent).[20]

A renewed debate on the future of liberalisation has now started after the change of guard at the centre in India. The ruling Bharatiya Janata Party has indicated that economic reforms will have to be accompanied by massive programmes for agriculture and rural development, including employment generation and food-for-work schemes to alleviate poverty. The government under Vajpayee has been more receptive to foreign investors' concerns than anticipated, a fact not lost on important sections of American politicians. In February 1999, Congressman Jim McDermott from the U.S. House of Representatives, visited India to establish an inter-parliamentarian committee consisting of selected Lok Sabha members and U.S. Congressional members. According to

Representative McDermott, the nuclear tests and the divergence between India and U.S. should not be allowed to stand in the way of developing further business interests, as the new committee's intent is to cultivate personal relations at this important level so as to smooth the road ahead. He pointed out that the U.S. maintains such contact with Japanese Diet members.[21]

If India signs FMCT in the present form, there is a possibility that it would contribute toward a more stable and predictable situation in South Asia. For this, American military aid and arms supplies to Pakistan would have to be curtailed. Until now, Pakistan has been a strategic ally of the U.S., and it was successful in making powerful friends in the Pentagon and State Department. The situation may change and an "Indian Interest Group" may gain leverage at the decision making levels. The structural changes in the second Clinton administration are a pointer to U.S. interest in upgrading India in the area of foreign policy. It was generally believed that India could not have a more favourable team than the Albright-Pickering-Inderfurth combination which is shaping U.S. foreign policy towards India today. The other point of cordial ties can be seen in the context of the support within the American Congress in comparison to Pakistan. The India caucus currently has about 90 members compared with eight in 1993. Thus, there are some clear signals which prove that this may be the right time for India to exploit its full potential. While the

atmospherics for closer India-U.S. interaction exist, the recent sanctions that followed the tests have been a serious stumbling block resulting in misunderstandings and damage. Both countries need to discover innovative means to circumvent this block, which may call for a certain amount of diplomatic "finessing."

In the Indo-Pak-U.S. triangular equation, it should be noted that Pakistan was twice denied assistance under legislation designed to prevent aid to countries engaged in manufacturing nuclear weapons - the first time, in 1979, under the Symington amendment. Within months, the American Congress waived the Symington amendment as it related to Pakistan, and approved a major military assistance package of high-tech military equipment, in return for Islamabad's pledge to act as undeclared conduit for U.S. aid to Afghan guerrillas fighting the Soviet invasion. In 1990, with the end of the Afghanistan war, Congress invoked the Pressler amendment to ban all economic and military assistance to Pakistan, once President Bush failed to certify that Pakistan was not in possession of nuclear weapons. The Hank Brown amendment was passed in 1995 despite Congressional opposition and has paved the way for the transfer of military equipment worth $ 658 million, including sophisticated maritime aircraft and missiles. However, this transfer has remained in limbo so far. Overall, there is no denying that Indo-U.S. relations are greatly strained at the moment. It is hoped that the fast paced, "protected"

meetings between Strobe Talbott and Jaswant Singh could be the beginning of a real dialogue between the two countries which would lead to strategic understanding, if not consensus. It should be noted that this is the first time in post-independence history that such a high level and sustained dialogue has taken place. Signing FMCT clearly could be one step towards solidifying this effort.

(iii) Possible projection of a better image of India by P-5

If India signs FMCT as is, even after the tests, it is likely to regain leadership among the Non-Nuclear Weapon States (NNWS) and then can more confidently moot the idea of complete elimination of nuclear weapons within a definite time framework. It is important to recognise that despite being signatories to the NPT and CTB, the NNWS demand for time-bound global nuclear disarmament, which India has been propagating for more than two decades, has received very little support from the weapon powers.

India will be also softening its stand and giving a signal to the world that it wants to be less isolated than it has been since 1996. Since India did not sign the CTBT, many nations branded India to be the "spoiler" of the Treaty. This image of "spoiler" should disappear after signing the FMCT. India's relations with the neighbouring countries will also improve and the prospects for regional co-operation could also increase.

Risks

(i) Internationally, signing of FMCT by India can be viewed as succumbing to pressure by the P5 and may be also viewed as a shift from its earlier position. India has been advocating global nuclear disarmament since it achieved independence. If it signs FMCT, it would be seen that it gave in under pressure and surrendered its objective of moving towards committed time-bound disarmament. India may not be able to accomplish the task of pursuing its position on nuclear issues as adamantly as before. The weakening of its position on the question of abolition of nuclear weapons within a definite time framework will convey a negative signal and may be called as non-committal on the whole range of issues. India's continued commitment that it will not come under pressure on all these issues would be taken lightly. It may also lose its credibility, and the developing nations may not rely on India's proclamations in the future.

(ii) Internally, it will be viewed as inconsistency in India's policy of linkage to time-bound global disarmament. Domestic political debates will likely get highly acrimonious.

(iii) India may be seen as a "soft" nation after signing FMCT putting its sovereignty somewhat at stake.

(iv) FMCT will prohibit future production of fissile material for weapon purposes. This could compromise national security interests. It is pertinent to note that the nuclear weapon states have excess fissile material stockpiles, and a freeze on production would not affect them in any way.

(v) The Treaty, as stated in the UNGA consensus resolution (48/75L) reads, "would be a significant contribution to non-proliferation in all its aspects." There is hence an admission that at best, it may pay lip service to disarmament. The objective of total disarmament and a nuclear weapon free world may become a dream if FMCT is signed and no serious effort is put in the direction of disarmament as it has been the case till now.

(vi) The nature and extent of verification arrangements are not clearly defined, though it is understood that IAEA would be entrusted with this task. The extent of safeguards which will be the verification measure could be either minimum, applicable only to enrichment and reprocessing plants, or maximum which could include all facilities like power reactors, fuel fabrication etc. The maximum regime which is nothing but full scope safeguards is a strategy to corner India, which operates only facility specific safeguards (INFCIRC/66).

Maximise benefits

Though the step proposed below will not maximise benefits, it will, at the least, ensure that the commitments made are not forgotten once the Treaty is signed. The step is a linkage to dismantlement of controls and embargoes.

Minimise risks

(i) Since several years are expected to pass before the ratification of the Treaty would come up, there should be concerted efforts at building up stockpile in the interim period.

(ii) Linkage to time-bound disarmament would ensure that the P5 take disarmament seriously.

(iii) India could insist on a minimum verification regime which would adequately safeguard the Treaty interests at an affordable cost.

Option Two: Sign Conditional FMCT

India should put forth the following conditions before signing FMCT:

(a) Cut-off only prospective

(b) Time-bound global nuclear disarmament

(c) Limited Scope

(d) Discharged spent fuel to be treated as stockpile

(e) Tritium to be included

(f) Use for military purposes to be banned

(g) Non-discriminatory verification and safeguards regime

(a) Cut-off only prospective

The key problems associated with the Treaty in CD from the outset include the following:

1. Whether stockpiles of Pu and HEU should be included as demanded by Egypt, Pakistan and some other NAM countries, or only the future production should be addressed as defined by the P5, Israel and India. As long as there is no serious effort at disarmament, and it is claimed even in the UNGA resolution 48/75L that FMCT is a non-proliferation measure, India should stipulate that the Treaty should be prospective in nature. The declared Indian doctrine of 'Credible Minimum Deterrence' would demand such a step as a minimum requirement. The stalemate at CD is best described in the following statement. "The mandate agreed upon in March 1995 fudged the issue, the result of clever drafting by Gerald Shannon, the Canadian Special Co-ordinator, at a time when certain states wished to report progress to the NPT conference (1995 Review Conference) but no real compromise could be agreed upon."[22] The progress beyond 1995 and to the present period may be summed up as insignificant.

   The U.S. position on this is revealed in a statement made at CD in January 1999 that "Cut-off itself can not be a

vehicle for addressing existing stocks. The U.S. position is well known - it will not agree to any restrictions on existing stocks in a cut-off treaty."[23]

2. Linkage to time-bound nuclear disarmament which was demanded by G-21 countries, along with the establishment of a concurrent ad hoc committee on total nuclear disarmament to consider it.

Although three years have passed after negotiations commenced in CD, there has been very little progress other than India, Pakistan and Israel agreeing to participate in the negotiations.

At the CD which reconvened on 18 January 1999, there were several statements and three distinct proposals on nuclear disarmament. South Africa resubmitted its 1998 proposal for an ad hoc committee to "deliberate upon practical steps for systematic and progressive efforts to eliminate nuclear weapons as well as to identity, if and when one or more such steps should be the subject of negotiations in the conference."[24] Unfortunately, this submission did not achieve a consensus. Egypt subsequently proposed an ad hoc committee on nuclear disarmament to commence negotiations on a phased programme of nuclear disarmament with the objective of complete elimination of nuclear weapons. Belgium on behalf of the five NATO countries (Belgium, Italy, Germany, Netherlands and Norway) proposed an Ad hoc Working Group

to study ways and means of establishing exchange of information and views within the conference on endeavours towards nuclear disarmament.

The lack of support for disarmament stems out of the attitude of the P5, especially U.S. This is revealed in the recent statement made by John Holum, Acting Under Secretary of State for Arms Control and International Security Affairs at CD, Geneva on 21 January 1999, when he identified two key elements of fissban to be "scope and verification," but did not make any reference to disarmament.

Prospective cut-off may not be a genuine step towards disarmament since the weapon powers except perhaps China have abundant stockpile of fissile material. The related arms control process is extremely slow with START II indefinitely delayed by the Russian Duma for ratification. An added problem is NATO expansion which occurred in March 1999. In addition, Clinton has abandoned his threat to veto the missile defence bill which is being pushed by Republicans in the U.S. Congress. This will undoubtedly create tensions with Russia regarding the Anti Ballistic Missile (ABM) Treaty and other arms control agreements.[25] All these factors cast serious doubts on the irreversibility of the arms race. Given these conditions, the objective of western powers appears to be to target and cap India, Pakistan and Israel, and to some extent China as well.

In the present context of India declaring herself as a nuclear-weapon State, and the adamant attitude of P5 refusing any linkage of disarmament to FMCT, prospective cut-off would best serve India's objective of maintaining credible minimum deterrence with "no first use." This Indian position would also help in ensuring that negotiations in CD on FMCT are not deadlocked. The Indian support to prospective cut-off could appear to be a shift from its demand for moving towards a Nuclear Weapon Free World (NWFW). A deeper analysis would indicate it is not so. Prospective cut-off will, as a first step, freeze the arsenals at the existing level. International accounting and control over stockpile would prevent clandestine diversion and also ensure non-reversibility. When these are coupled to time-bound disarmament through the START process, it may be seen that a NWFW is a feasible proposition. Strict verification and control in the prospective cut-off regime would effectively address prospective proliferation concerns. This being so, there should be no technology controls once FMCT comes into force. Realistically, an issue of such huge magnitude can be tackled only by a step-by-step process, and not possibly by a single stroke. This is subject to, of course, the assumption that the P5 would adhere to their commitment towards disarmament and would not repeat an act similar to the violation of Article VI of NPT.

Benefits

(i) If the Treaty is prospective, it would restrict the availability of fissile material for weapons.

(ii) India would be capped above Pakistan.

(iii) India would be in a position to retain stockpile fissile material, however small, which will ensure conditions of minimum deterrence policy are met to an extent.

Risks

(i) India would be capped lower than China.

(ii) Discrimination with regard to the stockpiles would continue among the nations.

(iii) If FMCT is prospective in nature, it cannot be seen as a satisfactory objective to aim for a real disarmament measure though it can be argued that it is a step towards progressive disarmament.

(b) Time-bound global nuclear disarmament

As already stated, linkage to time-bound disarmament by G-21 countries has been turned down by weapon states with the U.S. taking the lead. The U.S. considers that weapons stockpiles are addressed under START separately, and the deep reductions planned as part of START would be a disarmament measure. While addressing stockpiles and reductions, it is essential to ensure that a non-discriminatory, internationally administered safeguard regime is put in place after declaration

and verification. The physical protection will have to be under international control to ensure non-reuse. With the above measures in position and limiting the availability of fissile material, FMCT (prospective) would result in placing greater constraints on weapon states in furthering the growth of their arsenals. The assumption here is that no work would be done towards developing newer weapons. India, during CTBT negotiations, had linked it to time-bound disarmament, and consequently had to refuse signing the Treaty. If this position is going to be compromised due to any reason under CTBT, and the disarmament process does not progress satisfactorily, it would be necessary to link time-bound disarmament to FMCT. There has been a constant demand for the establishment of an ad hoc working group on nuclear disarmament. In the recent CD, Belgium, on behalf of five NATO countries, while stressing that FMCT carries a high priority had expressed the view that disarmament and arms reduction were major issues for the international community and a working group would be a useful step.[26] With G-21 and South Africa receiving support from the proposal of the five NATO countries on the setting up of a working group on nuclear disarmament, it is clear that the nuclear disarmament issue cannot be kept out of the CD forever and it appears the negotiations on FMCT can progress only if a decision on setting up of an ad hoc committee/working group is taken at the earliest.

Benefits

(i) Indian image would get a boost for steadfastly adhering to the demand for time-bound disarmament. The support for disarmament has been growing in the CD as is evident from the proposals of South Africa, five NATO countries and NAM.

(ii) It will put pressure on the P5 to disarm at a faster pace and push ahead with START.

Risks

(i) India can come under pressure as it happened in the case of CTBT. The Treaty can take the same route as CTBT though such a possibility is less due to support for disarmament in CD from various groups.

(ii) FMCT could become a treaty of broken bargain wherein the P5 could agree for a time-bound disarmament but not keep their part of the commitment, similar to experience with Article (VI) of NPT.

Maximise benefits

Support actively G-21 and other proposals of South Africa, five NATO Countries for time-bound disarmament.

Minimise risks

Avoid last minute changes but evolve a clear strategy right from the start of negotiations. It is recognised that dynamics of negotiation can force new directions but solutions to various postulations must be worked out in advance.

(c) Limited Scope

Non-discriminatory safeguards will be one of the important requirements of the FMCT regime. Obviously, this will relate to processes that lead to the production of fissile materials. There has been a debate as to the moment at which the safeguards should apply in the nuclear fuel cycle chain. With regard to facilities, safeguards can either be focused or broad-based. The former would restrict the safeguards to reprocessing and enrichment plants while the later would include reactors, fuel fabrication facilities etc. Since what is to be safeguarded and controlled are the fissile materials, there would be no useful purpose served in including the reactors etc. unless clandestine diversion of spent fuel and clandestine downstream processing facilities are postulated which is far-fetched. It is necessary to use such a "language" in the Treaty which will not limit safeguards to just reprocessing and enrichment plants, but also include laser separation facilities or any future developments that could lead to fissile material production for weapons purpose. The safeguards regime under FMCT would be quite complicated, exhaustive and costly due to :

1. Reprocessing/Enrichment facilities operate in several countries [figure-2 (a) & (b)] and are spread out.
2. Fissile material for peaceful uses like power generation would still be permitted.
3. Fissile material for naval propulsion and research reactors would also be permitted.

Perhaps it would be possible to bring under international control all fissile material production units but this can only be a long-term measure after establishing sufficient confidence that the world is moving towards a non-reversible disarmament regime. India has facility safeguards (INFCIRC/66) and hence becoming a party to FMCT would attract an enhanced verification system, if the same is broad- based.

Benefits

This would ensure that inspection and verification would be restricted to reprocessing and enrichment facilities, thus providing certain freedom and flexibility in the operation of reactors and other facilities. In effect, this will prevent the back door entry of full scope safeguards.

Risks

Restricting inspection and verification to reprocessing and enrichment plants only will leave out other process like laser separation etc. which needs to be addressed.

Maximise benefits

India has declared herself as a weapon state. Hence certain facilities can be declared as for military purposes which will lead to these being treated similar to those of P5.

Minimise risks

The Treaty language should be such that it not only addresses reprocessing and enrichment facilities but also any further developments that could lead to fissile material production for weapons (example: Laser).

(d) Discharged Spent Fuel to be treated as stockpile

Spent fuel is the source for plutonium both for power generation and possible weapons use. The necessity for India to reprocess spent fuel discharged from its first phase power programme needs no explanation, considering the fact that the Pu so produced is an essential input for the second phase (fast breeder) and the third phase (thorium utilisation) power programmes. All this would be permitted under FMCT regime.

There is a great concern that the Pu from civilian programmes will greatly exceed weapons Pu by the year 2010 [figure-1 (a)]. Due to proliferation possibility, the U.S. prefers "once through" cycle i.e. not to recycle but to store spent fuel without reprocessing. Recently, due to pressure from a section of scientists arguing for converting weapons Pu to MOX fuel for use in operating power reactors, there has been an interim decision to convert part of the weapon stockpile into MOX fuel and immobilise the remaining Pu as waste after mixing with high level wastes. If predictions hold true, there would be a revival of nuclear power from its present slow down in

western countries, and reprocessing of spent fuel will be a continuing activity. U.K. and France presently operate plants for commercial reprocessing purposes. While it is prudent to be cautious, it is neither scientific nor sensible to treat Pu as a waste with so much of hidden energy which can be exploited for power generation. An effective safeguards system in position should be able to address the proliferation concerns adequately. Another debatable point on the use of Pu for power production is economics. At today's cost of natural uranium and availability, many consider recycling Pu to be uneconomical. This does not, however, apply to India which has been denied access to global natural uranium. Moreover, there is a need for India to exploit its abundant thorium resources for power production especially when its oil and gas reserves are poor.

India has declared herself as a weapon-state, thereby implying weaponisation. To have an effective minimum deterrence in place, stockpiling Pu is essential. India is presently constrained by limited reprocessing capacity. There is a need to augment this capacity quickly to hold enough Pu stockpile though this can reach no where near the weapon states stockpile. India had been successful in not classifying spent fuel as waste under the Nuclear Waste Convention, foiling an attempt of the P5. This position should not be changed until there is evidence of true disarmament and global access for India to sources of natural uranium is made possible without unacceptable conditions.

Benefits

India has a large stock of weapons usable reactor produced fissile material. Spent fuel being classified as stockpile would result in its coming out of accounting under the Treaty and add to the stockpile which is not addressed by the Treaty.

Maximise benefits

Accelerate the reprocessing and enrichment activities and improve performance.

Minimise risks

The risk is minimum since accumulation of spent fuel in China and Pakistan is not significant (Refer to Table-3).

(e) Tritium to be included

Tritium is used in the nuclear weapons as a booster in the fission devices and also in the thermo-nuclear devices. Tritium has a half life of 12.3 years which necessitates replenishment in nuclear weapons at periodic intervals. Though a nuclear weapon can function without tritium, its inclusion in the Treaty would result in lesser confidence and lead to obsolescence of existing arsenals.[27] Banning tritium production for weapons purposes will send the right signal of moving towards disarmament. The arms reduction process that is in progress is bound to result in release of tritium, which can be recycled if at all found necessary, as it has happened with Pu though

not on the same scale. The released tritium could be adequate to support the existing stockpile without any new plants being brought in. It is also to be noted that the tritium producing reactors also produce Pu. The U.S. government's recent proposal to use Tennessee Valley Authority (TVA) reactors is definitely a step in the wrong direction at a time when FMCT is hotly pursued at the CD. It is also a serious deviation from the U.S. policy of not using civilian reactors for military purposes. Some eminent U.S. scientists believe that fresh tritium production can be post-poned by several decades if the START process is implemented seriously which will ultimately result in near nuclear weapon states holding weapons in hundreds before total elimination.[28]

Benefits

Will render P5 stockpile weapons less reliable in terms of performance and lead to obsolescence.

Risks

India will also be facing the problem of sustaining the weapons which need regular replenishment of tritium.

Minimise risks

The number of weapons held by India being definitely limited, a strategy should be evolved to ensure that a tritium ban does not adversely affect the Indian stockpile. Alternatively, it can be argued that the tritium ban would apply only from the time

the States join FMCT, the timing being decided depending on the stockpile of the state concerned vis-a-vis the P5.

(f) Use of stockpile for Military purposes to be banned

While the FMCT regime would prohibit production of fissile material for weapons purposes, it would permit use of fissile material for military purposes like for example in nuclear submarines. While there is sense in permitting use of Pu for peaceful purposes like power production, it is necessary to prohibit any military use if the Treaty is to be more comprehensive in nature. HEU is also used in research reactors but this problem is being resolved by converting the reactors for use of LEU as fuel. A similar change is possible also in the case of nuclear submarines.

Benefits

It will simplify safeguards activity since no HEU will be permitted for use in submarines, and this to certain extent may ensure balance between P5 capability and others.

Risks

This could impact India which is on its route to building nuclear submarines.

Maximise benefits

India should push for a Indian Ocean regime which will effectively keep out or limit outside powers in the Indian Ocean.

Minimise risks

India needs state-of-the-art Technology R&D in submarine building and alternative technologies.

(g) Non-discriminatory verification and safeguards regime

Verification is an important element of FMCT. By definition, "it is a process in which data are collected, collated and analysed to make an informed judgement as to whether a party is complying with the committed obligations"[29] whereas the primary objective of the safeguards (under NPT) is to take such measures as necessary to ensure that no clandestine diversion of declared nuclear material of concern takes place.

The verification function under FMCT is most likely to be carried out by IAEA who have been implementing the NPT safeguards. The verification regime under FMCT would fall into two basic categories:

(1) Stockpile
(2) Future production

While the stockpile verification still remains unresolved, there appears to be some consensus of what is to be done in the case of future production namely that the verification regime should be non-discriminatory among all participating states.

In 1993 after the Iraq problems, IAEA initiated actions towards strengthening safeguards to enhance the ability to detect any undeclared nuclear activity by increased access to sites and information. The direct efforts were also towards utilising the technological developments that had taken place over a period of time. These include environmental monitoring, greater access to sites by resorting to no notice inspections and possible use of commercial satellite imagery.

The methods and technologies used in verifying compliance to CTBT are much more complicated and involved, whereas in the case of FMCT, it could be the presently operated safeguard (Annex-3) mechanism with additions and up-gradation to strengthen safeguards (INFCIRC/540). The strengthened safeguards would result in more intrusive inspection.

It is expected that the technical details of the verification regime would be discussed by a Group of Scientific Experts (GSE) similar to the procedure followed in the case of CTBT. It has to be ensured that the techniques designed to provide effective verification will be protecting sensitive installations and information of proprietary in nature.

FMCT would allow use of fissile material for peaceful purposes like power generation. It has to be ensured that the verification regime would not result in cumbersome procedures leading to delay and irritation. The potential diversion scenarios will have to be examined in great detail and techniques tailor-made to ensure that such diversions are not possible.

Since asymmetric capabilites in understanding and absorbing technologies relating to verification exist, there has to be transparency and an organised effort at training member states in interpretation and analysis of raw data such as imageries etc.[30] Similarly, as a confidence building measure U.N. satellite networks providing imageries could be put in place instead of relying on informations from NTM only.

American attitude with respect to verification is revealed in a recent statement made by John Holum at the CD. While in the case of stockpile of P5 the safeguards would be voluntary, it will continue to be full scope in the case of non-nuclear weapon states and “the FMCT will comprise its own unique set of obligations involving some states that have unsafeguarded fissile material and may very well have such material on hand.”[31] If the Treaty is prospective, a discriminatory safeguards regime for the stockpile may not pose any problem and would be of benefit to India as well since it can continue with the present facility safeguards arrangement (INFIRC/66).

It has to be anyhow ensured that for the prospective production of fissile material, the safeguard regime is non-discriminatory.

Benefits

It is clear that the Treaty can only be prospective, as revealed in the statement of John Holum at CD in January 1999. It is then obvious that stockpile verification and control will have to be different from future production in the sense that non-discriminatory safeguards can apply in the later case. Since India has declared herself as a nuclear weapon state the verification regime for stockpile will have to be the same as that for the P5.

Risks

For verification and control of future production a non-discriminatory regime could lead to imposition of full scope safeguards which India has not accepted so far.

Maximise benefits

Having weaponised, it would impact India as much as P5. Of course, one thing India might have to negotiate on is to be "accepted as a weapon-state, at least for these purposes."

Minimise risks

In Treaty language, consider ways to reduce the type of inspections such as "challenge" and other unannounced inspections. India should try to be on whatever authority which

is set up to oversee the decision for inspections which would give India some say in the decisions and ensure Indian interests are protected.

Option Three: Sign FMCT with Quid Pro Quo

This option is based on the assumption that India is not going to give up its future production of fissile material for weapon purposes without gaining something concrete in return. There were a variety of quid pro quo proposals that India could have made relating to both technical and political matters. However, after India tested its nuclear devices in May 1998, it is uncertain whether quid pro quo would work at the moment. Nonetheless, the damage control exercise which India undertook after the tests has certainly helped India in engaging United States in meaningful discussions on issues on which both the countries have converging interests and can work together. India has already explained to the international community in general and the U.S. in particular about the rationale behind conducting the nuclear tests.

The Council on Foreign Relations (CFR) and the Brookings Institution in their recent report entitled "***After the tests: U.S. Policy towards India and Pakistan***" envisage and call for intensified diplomacy to nudge the two sides toward bilateral understandings and acceptance of international arms control protocols. The report also urges an easing of controls on dual

use technology exports and promoting conventional arms sales on a case-by-case basis. It is generally argued that the U.S. resumption of economic assistance, military aid and defence co-operation should not hinge on non-proliferation milestones. This is a clear indication of the opinion of the experts.

The eight rounds of talks between the U.S. and India (Strobe Talbott - Jaswant Singh) held until now after the May 1998 nuclear tests have in stark reality produced nothing tangible excepting perhaps a softer approach on sanctions, which could be more to ensure that the commercial interests of U.S. companies are not hurt. Both the countries are trying their best to protect their positions. Nevertheless, these talks in a way reveal that the bargaining route is not shut with the United States while dealing with nuclear issues and national and international security, subject to the condition that India is able to convincingly argue its cause.

Since the end of the cold war, the main objective of the arms control policies appear to be to prevent the development of military capabilities by non-western societies that could threaten Western commercial interests. The West has attempted to do this through international agreements, economic pressures and controls on the transfer of arms and weapons technologies. While the NPT, CTBT, FMCT, MTCR and Wassenaar Arrangement establish non-proliferation and technology control

regimes, international financial institutions like the World Bank and the IMF exert economic pressures.

Viewed in this context, India can make some quid pro quo proposals with the U.S. though U.S. has been saying that India should sign the NPT and CTBT without any conditions.
(a) Dismantle sanctions and Embargo regimes.
(b) S&T Information Exchange.

(a) Dismantle Sanctions and Embargo Regimes

First and foremost, the economic sanctions applied by the U.S. should be withdrawn completely and not in a limited way as is being done. This certainly should not be seen as a concession but something which follows logically from India's willingness to co-operate in non-proliferation measures and its impeccable record of self imposed compliance.

India certainly needs to develop the critical technologies. The essential requirements for the development of these technologies comprise the need to have a sound scientific base, necessary technical knowledge and skills, infrastructure and facilities, certain material inputs (raw materials, components, devices etc.) and adequate funding. These requirements are rather difficult to meet for a developing country, especially when there are many other competing demands. Hence to accelerate the pace of development in

general and promote economic strength in particular, it is essential that India has free access to state-of-the-art technologies, the advantage being saving in cost and time. As a recipient, it is necessary that expertise available within the country is adequate to judge the viability of the transferred technologies in terms of not only absorbing and putting to use but improving on them. Fortunately, having gone through the difficult phase of development under various Embargo & Control Regimes [Annex-2(a)], India is in a position to selectively choose what is needed rather than accept dumped redundant technologies, as it normally happens when a developing country seeks help from a developed country. The fall out of the "no embargoes and controls" could be free flow of technology and capital in all areas including Space, Defence and Atomic Energy.

(b) S&T Information Exchange

India's falling in line with the non-proliferation objectives of the United States and its western allies should encourage U.S. to exchange with India necessary information (data and computer codes) for keeping its technologies updated. It should be recalled that the former U.S. Defence Secretary, William Perry had made this offer to China during his visit to Beijing in October 1994. There is no reason why this cannot be extended to India, especially when U.S. now recognizes the genuineness of India's concern and the rationale behind its recent tests.

Benefits of Conditions (a) and (b)

(i) Although embargoes and controls have strengthened self-reliance and by that process boosted India's capabilities in the areas of defence, space and atomic energy, it has to be stressed that this has been achieved with an avoidable cost and time. With the growing needs of the increasing population, and the increasing economic penalty in terms of cost and time, moving on to a regime of "No Embargoes & Controls" is bound to accelerate the pace of attaining economic strength, strengthen all areas of Indo-U.S. co-operation and move India to a comparable position vis-a-vis China.

(ii) The sharing of information between the P5 and India would certainly help in reviving the relationship in a positive way. The strategic and nuclear co-operation would introduce certain transparency resulting in enhanced confidence building.

Risks of Conditions (a) and (b)

(i) The risk which India may face would possibly be a set back on selfreliance. There could be technological dependency and the development of indigenous technologies could be hampered.

(ii) Assuming Pakistan will receive similar treatment, it would be able to obtain sensitive nuclear technologies. The implications for India could then be negative.

Maximise benefits and minimise risks of conditions (a) and (b)

India should develop a clear cut strategy for continuing with the indigenous development in the high-tech areas as a fall back position and not slow down or give up its declared policy of selfreliance and indigenisation.

Option Four: Declare Moratorium on Fissile Material Production

India has made it clear that it would not sign NPT though confusing statements are being made in the case of signing CTBT after declaring a moratorium. There have been declarations from scientists both from the Department of Atomic Energy and Defence Research and Development Organisation that the present tests have provided the capability to meet minimum deterrence demands. The Government of India has also made a categorical declaration of "No First Use." While an influential section is for signing CTBT after the tests, there is also a vociferous group against signing CTBT for the following reasons:

1. The disarmament process is not proceeding satisfactorily. START II has not been ratified yet by Duma.
2. Statements by U.S. and Russia indicate that Nuclear Deterrence is still an active component of their security strategy and policy.

3. Some in India consider that the CTBT is discriminatory in nature viewed from the point of view of the veto power enjoyed by the P5 (one of them could become a violator) and the superior technology status of U.S. and Russia, especially U.S., in putting to use National Technical Means (NTM) which is one of the important components of CTBT.
4. U.S. is pursuing actively research in many areas which have dual use, in terms of developing newer and more powerful weapons, for example conducting sub-critical and laser induced direct fusion experiments.
5. Treaty "coming into force" is conditional to signing and ratification by 44 countries which includes India.

Benefits

(i) Moratorium on Fissile Material Production (FMP) would go at least half way in meeting the requirements of the P5 and at the same time provide an opportunity in a more moderate fashion for India to press for progress towards disarmament. India could watch carefully any developments relating to newer and more powerful nuclear weapons and initiate promptly necessary steps to mitigate the fall out of such actions. Pakistan has been shifting its position on signing CTBT. A moratorium on FMP by India would also pressure Pakistan to follow at a minimum.

(ii) Moratorium gives flexibility in the sense that withdrawal is a simple procedure versus withdrawal after formally signing the Treaty.

(iii) U.S. could view the moratorium as a significant concession befitting a reciprocal gesture which could result in breaking the current Indo-U.S. impasse. Moratorium would be seen as a middle position both by U.S. and G-21.

(iv) Moratorium would result in India being capped above Pakistan under the assumption that Pakistan would also follow suit. Anyhow, considering China-Pak axis, this may not be a significant benefit.

Risks

(i) Limits the stockpile and caps India inferior to China. The opportunity to produce fissile material during the intervening period between declaring a moratorium and actual signing of the Treaty, which could take several years, would be lost, which will have a very serious impact considering the points 1 to 5 of option four.

(ii) Moratorium on CTBT without signature could result only in a symbolic gain signaling tough Indian posture, but in real terms there would be no gain since the sanctions could remain.

(iii) India may be seen as a soft state which can cancel the credibility gains from the nuclear tests.

Maximise benefits

(i) Allowing G-21 to take the lead on disarmament issues and similarly the P5 to take the lead on prospective Treaty without India directly getting involved would be a good strategy.

(ii) Declaring a moratorium on Fissile Material Production (FMP) should be postponed till negotiations are complete and final decision is imminent since this would provide enough time to increase the stockpile.

Minimise risks

(i) The reprocessing as well as enrichment plants should be run at optimal efficiency. There should be a crash programme to build new reprocessing plants and commission them to increase reprocessing capacity.

(ii) The present moratorium on CTBT can be converted to signature which could result in lifting of sanctions.

Option Five : Sign CTBT, Declare Moratorium on Fissile Material Production

This option figures prominently in the U.S. agenda and is one of the subjects discussed during the Jaswant Singh-Strobe Talbott meetings. Moratorium on fissile material production even before the precise scope of the Treaty is known, is a step India should not take at all. The intention in such a step is clearly to cap India at the lowest possible inventory of fissile materials. It is also to be kept in mind that huge amounts of money are being spent on so called Science-based Stewardship Programme under the pretext of ensuring safety, security and reliability of the weapon stockpile. Both U.S. and Russia are conducting Sub-critical Experiments (SCE) claiming that they are out of the scope of CTBT.

Benefits

(i) Signing CTBT could result in an improved environment and provide a jump start to Indo-U.S. talks. Further, it would put the burden on U.S. to come up with some overture. Psychologically, pressure would be off India and shift to U.S.

(ii) It could provide Clinton administration some better bargaining position with U.S. Congress to take a softer attitude. Congressmen seem to ask as to what India has conceded since the tests to qualify for concessions.

(iii) India signing CTBT could push U.S. to ratify the Treaty.

(iv) It will send a stronger signal to G-21 that India is serious regarding minimum deterrence though this could result in a qualitative cap of weapons development in some form. The move would also signal that India is willing to go along with international sentiment. Additionally, this step would lead to greater transparency leaving no ambiguity regarding India's real intentions.

(v) An internal benefit is that signing the Treaty gets rid of the possible politically motivated debates which can otherwise debilitate Indian policy making. Oddly enough, if CTBT is left only as a moratorium, there is a risk that it will be exploited as a political game with constant source of friction between the party in power and others i.e. "CTBT to sign or not" can become a political ping-pong game.

(vi) The biggest advantage of a moratorium on FMP could be lifting of sanctions.

(vii) It would force Pakistan to follow suit, and may put pressure on U.S. to persuade/pressurise China to do likewise.

(viii) Moratorium can always be reversed if there is no significant progress towards disarmament.

Risks

(i) The greatest risk is a possible qualitative and quantitative cap on weapons development assuming the disarmament process is not taken seriously by the P5 or the process is slow. The extent of impact can be best judged by the Department of Atomic Energy and Defence Research and Development Organisation.

(ii) Internally, the Government could run the risk of losing out, if convincing arguments are not made for signing CTBT.

Maximise benefits

The moratorium on FMP should not be linked to signing CTBT. This would provide additional time in which the stockpile could be augmented.

Minimise risks

Conducting SCE would send a signal that India has the capability and signing the Treaty will not result in a qualitative cap. This will also discourage U.S. from conducting any more tests, specially in the context of many U.S. scientists declaring that such tests, even if not a violation of CTBT, are morally wrong.

Option Six: Reject FMCT

This option is based on the premise that:

1. India will continue to hold on to the moratorium or may even sign the CTBT.
2. India need not have to conduct further tests including fusion devices.
3. The present stockpile may not be adequate or does not have enough margin to meet the immediate needs of minimum deterrence.
4. The disarmament process is shaky and irreversibility appears uncertain at this point of time.
5. The corner stone of the non-proliferation objective is the NPT. It is a bargain struck between 'haves' and 'have-nots' on the possession of nuclear weapons in which NNWS adhered to their commitment but NWS paid lip service, indulged in arms race [figure-3 (a) & (b)] and took the world to the brink of near catastrophe. NPT should be seen in the light of the P5 commitment under Article VI and its blatant violation by them.

The next important Treaty is the CTBT. Even before the Treaty comes into force, signs of violations are apparent, like justifying SCEs, spending huge amounts of money on fusion ignition experiments and planning for fairly large tritium production facilities. There is no guarantee that the P5 will not behave the same way as they have done in the case of NPT once the Treaty was signed.

The FMCT is again a non-proliferation measure to cap stockpiles at unequal levels targeting India, Pakistan and Israel, more particularly India. The argument that FMCT will freeze weapons can only apply to weapons capable states since the P5 stockpile of weapons and fissile material is so huge that they will be least affected. Whenever the issue of disarmament is raised, the standard answer is that these treaties are steps towards disarmament. However, it can be easily seen from the track record which is so poor, that there is a risk that the P5 may not adhere to their commitments once the Treaty is signed. Placed in a situation wherein the credibility of the P5 is in question and the disarmament objective is a far cry, India should reject FMCT to protect its national interests.

Benefits

(i) It will not freeze weapons in terms of numbers and would help increasing the stockpile of fissile material.

(ii) It will be seen as a strong nation pursuing an independent policy towards ensuring its security needs.

Risks

It **c**ould lead to further tightening of sanctions leading to technological isolation. This could result in greater resource demand and affect economic stability when there are several competing demands on limited resources. Developmental activities can also get hampered.

Maximise benefits

There has to be concerted efforts towards more efficient performance of reprocessing plants and production of launchers. There should be political stability and consensus on issues related to security.

Minimise risks

(i) Instead of indulging in rhetoric, there should be a clear strategy towards greater indigenisation in core sectors.

(ii) Pace of reforms must be accelerated so that the foreign investments would grow and business community will exert pressure on Governments to relax trade curbs. India's big market is the key and more effort should be placed on formulating good economic statecraft.

Conclusion

This study has proceeded from the assumption that India's decision on the FMCT will ultimately have to strike a balance between security, economics, international conditions, and principle. We have attempted to consider the Indian situation and circumstances after the May 1998 tests, while at the same time keeping in mind the earlier and broader contexts.

Post Test Circumstances

In a fairly strong departure from the past, open and forceful

debates on issues of national security are currently underway and will clearly influence the final shape of any decision to be taken. The CTBT negotiations appear to have been instrumental in bringing the debate in India closer to a more realpolitik perspective in contrast to the earlier normative mode in the past. At the same time, it is important to anticipate developments and offer possible alternative options which would be relevant under different outcomes.

The idea of deterrence and its meaning has taken on much more importance in the post testing period for India. In attempting to develop the most suitable definition of minimum deterrence, one question which needs to be considered is whether opacity or transparency serves interests better. Ambiguity as in the past does allow the country to maintain credibility at undetermined levels of weaponization, thereby avoiding a 'tit-for-tat' response/counter-response. On the other hand, ironically, as a weaponised state India is coming under increasing pressure from the U.S. to openly articulate its strategic doctrine. It will be necessary for India to formulate its own, perhaps unique strategic doctrine and style in the new environment. This would not be unlike China, which from the beginning of its weaponisation adopted a very different strategic posture than the U.S./Russian posture. When considered against U.S. and Russia, the Chinese are the orginators of the "minimum deterrence" stand. India's approach may have to mirror the Chinese innovation in some fashion. In this

connection, the government seems to have indicated that India does not intend to match Chinese military capability. The tests and especially the vitriolic Chinese reaction itself may have gone some distance in convincing skeptics about the Indian concern regarding China over Pakistan.

Assessing the Options

None of the options considered in this report is entirely positive or negative. The study has tried to consider the options from all angles to give a comprehensive treatment of benefits and risks. Without going into the details of the various options here, several conclusions may be drawn. Option one is unlikely to have much support in any quarter—political, scientific, strategic or even important economic communities. Among the few supporters may be the more internationally exposed economic agents and companies, and political activists against the nuclear programme.

Likewise with option five, which is likely to be the most politically attractive to international observers. It is currently the specific option promoted by the U.S. This option will be unpopular particularly with Indian scientists and strategic analysts, as well as most political parties, as it would amount to making two "unilateral" concessions without any quid pro quo. The moratorium on fissile production would be a huge step which would clearly restrict India's capability to the status quo/current levels. It would be difficult to reverse that step if necessary to do so in the future.

Option four suffers from some of the same problems as option five. Besides, the status quo on the NPT will be nothing new, and none expects it to be otherwise. On the CTBT, the consensus seems to be toward signing at this juncture, although there is some opposition. A question India has to answer is: should the CTBT be allowed to become an irritant once again in Indo-U.S. relations ? In other words, is this a battle India wants to continue to wage at this stage ? In any case, the policy has to become clear by September 1999 at least, but until then there is some room for sitting on the fence.

Option three would perhaps be the most welcome from India's interest, particularly if the quid pro quo was substantial, such as removing all dual use sanctions and recognition of India as a nuclear weapon state. Under current conditions, neither appears to be very likely, although some variant might evolve.

This leaves option two and option six as the most realistic possibilities. These two options are attractive for quite different reasons. Option two allows India to be engaged in negotiations on the FMCT without fettering Indian activities in the nuclear field in the interim. The conditions put forward by India may be such that while no other country's interests are likely to coincide with India's on all parameters, several countries' concerns may significantly converge on one or more conditions — allowing for potentially strong bargaining partners. Also, while India can enter the negotiations with a number of

conditions, it should be prepared to give away the least important ones to be able to engage in a give and take process. With the CTBT experience behind the country, the CD should be under no illusion that it can successfully pressure India on its most vital conditions. In the worst case, should it become clear that India's critical conditions are not going to be met, the option of withdrawing from FMCT negotiations is available, noting that good faith negotiations by India have become deadlocked. Option two allows India to pursue its own national interest and be consistent with the international movement and mood.

Option six is the one on which the P-5 will generate the greatest 'international' opprobrium. There are two ways of looking at this — one, given the post-testing sanctions regime, there is little else with which to target and hurt India, so an extreme position now is more tolerable from India's perspective than any other time. On the other hand, India also needs to try and navigate out of the current impasse (especially in Indo-U.S. relations) and "re-capture" non-proliferation/disarmament "credentials."

Views of Experts on the Options

As part of the project, a Workshop was held at NIAS, Bangalore on 17 December 1998, to deliberate on the various options identified in this report. Experts drawn from academia, scientists and researchers participated in this workshop. (report

to be published). Participants were informed of the options, and were requested well in advance of the Workshop to choose the one which they consider most appropriate for India. The outcome of the Workshop, after a presentation by various experts as to why they chose a particular option while discarding others, can be summarised as:

- Maximum support for option two
- Second in line support for options three and five, but with a recommendation against declaring a moratorium before the Treaty takes some definite shape.
- Some support for option six
- No support for options one and four

Options discussed above can be combined to enable greater benefits as well as to provide wider choice for negotiations. This is illustrated in Figure-4 which is self-explanatory.

The options discussed will generally fall under two categories. One relates to negotiating strategy at the CD, Geneva and the other for bilateral/multilateral negotiations outside CD. For example, option two would fall under the former category and option three under the latter. The options can also be packaged in such a way that it would maximise benefits for India and nothing is given up without a substantial gain. An example of this would be a combination of options two and three. Negotiation on option three with the State concerned could

commence at an appropriate time depending on the details of the content and progress of negotiations at CD.

Ultimately however, the FMCT decision has to be intimately linked with a realistic Indian 'strategic vision.' Whatever decision India takes will involve trade-offs, and this study's hope is that it will have contributed in making a more reasoned and informed trade-off in the end.

Endnotes

1. UNGA 48/75L Consensus Resolution, 16 December 1993
2. The Shannon Report & Mandate, CD/1299, 24 March 1995
3. PPNN News Brief, 3rd Quarter, 1998, p2.
4. Disarmament Diplomacy, No.33, December 1998-January 1999.
5. Ibid.
6. Ibid.
7. Ibid.
8. "The future of U.S. Nuclear Weapons Policy," National Academy of Sciences, 1997, Washington D.C.
9. Arundhati Ghose, "The Dynamics of Negotiating Nuclear Treaties," Talk at NIAS, September 1998.
10. Resolution 37/100A, 37th Session, U.N. General Assembly.
11. Resolution 44/117D, 44th Session, U.N. General Assembly.
12. Prof. Kenneth N. Waltz, "An American Perspective on Nuclear Strategy," a lecture at NIAS, 27 November 1996.
13. Amy Sands in Mitchell Reiss and Robert S. Litwak (eds), "*The Impact of New Technologies*," The Woodrow Wilson Center Press, Washington, D.C., 1994, p.264.
14. PPNN Newsbrief, Ist Quarter, 1999, No.45, p.3.
15. Frank von Hippel "The Fissile Cut-off: Is there a way Forward ?," May 1997, p.2.
16. General K. Sundarji "Blind Men of Hindoostan: Indo-Pak Nuclear War", UBS Publishers' Distributors Ltd, 1993.
17. Brahma Chellaney, *Technology Controls as Constraints on India's National Security,* paper presented in a Workshop on an Integrated, Long-Term Approach to National Security, 13-15 January, 1997.
18. Richard N. Haass and Morton H. Halperin, "*After the Tests: U.S. Policy Toward India and Pakistan,"* Brookings Institution and the Council on Foreign Relations, 1998.
19. Ibid, p.13.
20. Francine R. Frankel, "*Indo-US Relations: The Future is Now,"* Washington Quarterly, (Washington D.C.), Vol.19, n.4, p.133.
21. Lecture at the Center for Strategic and International Studies, Washington D.C., February 22, 1999.
22. Private communication with Rebecca Johnson, Executive Director, The Acronym Institute, November 29, 1997.
23. John D. Holum, "Acting Under Secretary of State for Arms Control and International Security Affairs," speech at CD, Geneva, 21 January 1999.
24. Ibid; n.4, p. 20.
25. New York Times, March 17, 1999.
26. Ibid; n.4, p.24.

27. Ibid; n.1
28. Charles D. Ferguson and Frank von Hippel, "What is the rush ?" Bulletin of Atomic Scientists, March/April 1999, p.13.
29. Verification in all its aspects, including the role of the United Nations in the field of verification, A United Nations Report, 1995.
30. Verification in a Global Context: The establishment and operation of a United Nations Center for Information, Training and Analysis, Arms Control Verification Studies No.7, Department of Foreign Affairs and International Trade, Canada.
31. Ibid; n.4, p.28.

ISBN 81-87663-01-4

ISBN 81-87663-01-4

ISBN 81-87663-02-2

ISBN 81-87663-02-2