INDIA AND THE NUCLEAR NON PROLIFERATION TREATY

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INTRODUCTION

India's first nuclear explosion, (and perhaps the last), in 1974, not only took the big powers by surprise but also invited their indignation. In it they saw a serious threat of nuclear weapons proliferation beyond their circle and thereby losing their sanctity so to say. India's repeated assurances to the effect that she has no intentions of making nuclear weapons and that the explosion was made for utilisation of nuclear energy for peaceful purposes has done little to lessen the near panic that the explosion has created. Probably the big powers are judging the Indian declarations and professions by their own standards of international morality. What is pertinent to our subject, however, is that, ever since the explosion, the big powers have been increasingly mounting pressures on India to compel her to sign the nuclear Non-proliferation Treaty (NPT) which India has been resisting all these years. The pressure is being exerted primarily by the United States, whatever be the reasons and is in the form of constraints on the supply of fuel to India's nuclear power plants. Indian on the other hand is showing no signs of submission, not even under the threat of her prestigious Tarapur Atomic Power Plant facing a shut down for want of nuclear fuel from America. Any expectations which may have been aroused in the United States after the 1977 General Elections in India must have been set at rest ultimately when President Carter came face to face with India's strongman Morarji Desai during his visit to in January 1978. The Janata Party Government proved to be even a harder nut to crack that its predecessor in this regard.

In spite of her refusal to sign the NPT, India has repeatedly pledged not going for nuclear weapons. This policy which was first initiated by Prime Minister Nehru on gaining Independence has continued through the 30 years of Congress rule and is now being carried forward by the Janata Party. The nuclear explosion conducted in between could hardly be termed as a deviation from this policy. With the little or so traces of any follow up action one is inclined to even doubt that the test was conducted under any well thought out plan for the peaceful utilisation of nuclear energy let alone believe that it is a precursor of a weapons development programme. With the advantage of the hind sight we may now even suspect that the whole drama was enacted for political purposes – to give a fillip to the tottering government of Indira Gandhi. The daringness with which she had the tests conducted against the wishes of the Super Powers certainly made a heroine of her and greatly furbished her personal image, but coming at a stage, as it did, when we were so dependent on others for the supply of nuclear fuel, technology and material to the various nuclear power and research projects, the explosion has done more harm than good to our national interests.

It has put the nuclear powers on the alert, who are now straining every nerve to halt India's further progress in the nuclear field except under safeguards of the International Atomic Energy Agency (IAEA), as envisaged in the Nuclear Non-proliferation Treaty.

It is, perhaps, to retrieve lost ground that the Prime Minister Morarji Desai has had to take the step of surrendering India's right to exploiting nuclear energy for peaceful purposes by pledging not to conduct any more Peaceful Nuclear Explosion (PNE). This may help to an extent in obtaining some nuclear fuel from the United States for our Tarapur Atomic Power Station

under the existing agreements but the Carter administration in now irrevocably committed not to export any nuclear material to non-nuclear countries which do not submit to its "full scope safeguards" (application of IAEA safeguards upon all peaceful nuclear facilities existing in a country including those indigenously constructed).

What are the salient provisions of the Nuclear Non-Proliferation Treaty, why is India adamant in not signing it, how far will India be able to resist outside pressures and how far does India's nuclear policy serve its defence interests are some of the questions that are being attempted to be answered in this paper.

THE PROBLEM OF PROLIFERATION

The problem of proliferation of nuclear weapons arises from the fact that in the course of working of conventional atomic energy plant, plutonium is produced as a by-product. This plutonium, being a fissionable material can, in turn, be used for making nuclear weapons. In fact plutonium was the fissionable material used to make the atomic bomb dropped over Japan. With the rapid development of trade in nuclear materials, equipment and technology potentiality of making atomic weapons is bound to grow in many more countries of the world. By the end of 1975, nineteen countries had 168 nuclear reactors with an installed capacity of over 73 million kilo watts. By the end of 1980 the number of such reactors is expected to be about 345 spread over 29 countries, with installed capacity reaching the figure of 220 million kilo watts. Consequently the production of plutonium has also been increasing rapidly. It is estimated that in 1980 the world output of plutonium would be about 100 tons. By that time all the reactors of the world would have produced between 300 and 450 tons of plutonium. The weapon making capacity of countries operating nuclear reactors may be judged by the fact that only 8 Kg of plutonium are required to make a 20 kilo ton nuclear war-head.

Hardly anyone could fail to see the tremendous danger latent in the uncontrolled development of the nuclear power industry. And yet the economic advantages of the nuclear power stations over the power stations working on conventional fuel such as oil, coal and gas are so great that in spite of the potential danger of proliferation of nuclear weapons, mankind cannot afford to forego this great boon of science. No doubt the answer lies only in a proper international control over the world production of plutonium.

There are no two opinions in the world today over the necessity for checking further proliferation of nuclear weapons with the ultimate aim of eliminating them altogether. The difference lies only in the interpretation of the term proliferation. The nuclear powers interpret it to mean only the spread of nuclear weapons beyond their group of five (lateral proliferation). The non-nuclear countries, on the other hand, interpret it to also include the increase in the number of nuclear weapons within the nuclear powers themselves (vertical proliferation). It only stands to reason that in order to consider the problem of proliferation in its totality both its aspects – lateral and vertical – must be considered. Besides the fact that international security is threatened equally by both these aspects of proliferation, the one complements the other and neither can, therefore, be considered in isolation. The crux of the problem of proliferation of nuclear weapons today is that while much hue and cry is being raised over lateral proliferation, little or nothing is being done to check vertical proliferation. The reason is that while the nuclear powers have the strength enough to promote their interests that lie primarily in checking lateral proliferation of nuclear weapons, the non-nuclear states do not have the strength to enforce even

what is just, fair, and for the common good of mankind. But of this we shall have more to say later.

ORIGIN OF NUCLEAR NON-PROLIFERATION TREATY

No sooner had the two Japanese cities been destroyed by the first use of the atomic bomb, than efforts began to be made by the international community to contain the demon that had been unleashed. The heads of state from the United states, Great Britain, and Canada, the countries which had collaborated during the war in the development of the atomic bomb, met in November 1945 and issued an agreed declaration for the control of atomic energy by the United Nations. At its first session in 1946, the United Nations General Assembly established an Atomic Energy Commission and as control of atomic energy could not be divorced from the control of conventional armament, a commission on conventional armament was formed in 1947. In 1952 these two commissions were merged into a single Disarmament Commission, which has since been the main forum for disarmament arms control negotiation. None of these efforts, however, bore much fruit because the two Super Powers – the Soviet Union and the United States – could not agree on the basic issues involved such as, (a), the general operation of the control system; (b), the timing of inspection and control as regards the destruction of existing stockpiles; (c), other inspection procedures; and, (d), the use of veto in enforcement actions. There is a fundamental difference of approach of the two sides. The position of the USSR has been that immediate reduction in armament was the first and indispensable step in restoring lost confidence and the proposals for the prohibition of atomic weapons should also be considered. The position of the United States has on the other hand been that "a workable system for the regulation of armament cannot be put into operation until conditions of international confidence prevail". These two different approaches are obviously the outcome of the differences in the national interests of the two Super Powers.

In 1953 Russia exploded her hydrogen bomb, which brought in its wake new dangers for the western world. Efforts to reach an agreement on disarmament and control of nuclear weapons were, therefore, renewed. With a view to limit armament and to affect international control of atomic energy with adequate safeguards, including a practical system of inspection under the United Nations, the United States came out with an "Atom for peace" plan. The plan, however, got stalled on the question of inspections.

The only substantial result of nearly 20 years of negotiations has been the signing of the Partial Nuclear Test Ban Treaty (PNTBT) on 5 August 1963 and an agreement between the Soviet Union and the United States on 20 April 1964 to reduce their production of fissionable material used in nuclear weapons. France and China, however, refused to sign the PNTBT and thus nullified whatever little benefit of the Treaty that there may have been. Both these countries continued to develop their nuclear weapon capabilities. China exploded her first nuclear device in 1964 and tested a hydrogen bomb three years later.

While these efforts to check vertical proliferation of nuclear weapons were going on, the world became increasingly aware of the dangers of lateral proliferation generated by the increased production of plutonium as a result of the development of nuclear power industry and its spread to a large number of nations. Late in 1966, the United Nations General Assembly adopted a series of resolutions on disarmament, appealing to all states to conclude a treaty on non-proliferation of nuclear weapons. Consequently a treaty on non-proliferation of nuclear weapons was drafted on 1 July 1968, which was signed immediately by sixty one countries. By 1977 the number of the signatories had risen to more than 100. It would, however, appear that

most of the countries that have signed the Treaty to date are either those that have security pacts with the Soviet Union or the United States, or those that do not have the resources to even think of the nuclear weapon programme. Most of the countries that have the potential for going nuclear have not signed the NPT. India, Japan, Federal Republic of Germany and Brazil are among those that have not signed the Treaty in spite of pressures from the two Super Powers. The two weaker partners among the big five – France and China – have also not signed the NPT. It would have, probably, hampered them in their race for catching up with the Super Powers, and thereby doomed them to a second rate power status for ever.

With so many countries keeping themselves out of it, the Treaty cannot be expected to serve its purpose; not even the limited one of checking lateral proliferation. But one could hardly blame the non-signatories for the failure of the Treaty. It is the framers of the Treaty – the two Super Powers – who have, by disregarding all cannons of International law and justice doomed the Treaty to its death.

PROVISIONS OF THE TREATY

The salient provisions of the Nuclear Non-Proliferation Treaty may be summed up as under: -

(a) The states in possession of nuclear weapons have pledged not to transfer nuclear weapons or other nuclear devices to any one at all.

(b) States not in possession of nuclear weapons have on the other hand pledged not to make or acquire nuclear weapons or other nuclear explosive devices.

(c) For the purposes of fulfilling the provisions at (b) above, the non-nuclear signatories of the treaty have undertaken to conclude agreements with the International Atomic Energy Agency (IAEA) on guarantees under which the IAEA establishes control over all nuclear activity on these countries territories. Such control would be applied in such a manner as to keep a track of the flow of fissionable materials and to prevent them from being switched from peaceful production to making of nuclear weapons or other nuclear devices. Control is to be exercised through an analysis of the records on the movement of nuclear materials, supervision over the work of operators at nuclear installations and monitoring by the Agency's inspectors at "key points" and strategic spots at the installations. If these checks bring to light any impermissible leakage of nuclear material, the matter may be reported to the Security Council and the UN General Assembly which may take action as may be considered appropriate. In accordance with article XIX of the Statute, the Agency may also temporarily deprive the defaulting state of the rights and privileges accruing to it from membership of the Agency.

(d) Under the provisions of the Treaty the big powers are totally exempted from any sort of control and inspection of the IAEA. Also its provisions do not forbid the nuclear powers to carry out nuclear tests and leaves them to continue development of nuclear weapons and add to their existing stockpiles.

(e) The nuclear powers have undertaken to provide collective security to the non-nuclear states against a threat from any quarter.

(f) The nuclear powers have also undertaken to carry out peaceful explosions on behalf of non-nuclear states as and when required.

Even a cursory study of the provisions of the Treaty would show that the Treaty is most unequal and blatantly discriminatory in nature. While it expects the non-nuclear states to

sacrifice their national interests and even their sovereignty (through the system of controls by the IAEA), for the sake of world peace, it demands nothing of the nuclear states. Obviously it is a Treaty dictated by the nuclear powers – or more appropriately the Super powers. Little wonder that the countries are be coerced into acceptance through political and economic pressures being exerted by the Super Powers.

THE HOAX

It would appear that the NPT is nothing but a hoax being played by the nuclear powers on the non-nuclear. Feigning concern for international security, the treaty has in fact been designed by the big powers to legalise and perpetuate their nuclear monopoly. The big powers know too well that while in the past the political power grew out of the barrel of the gun, to day it grows out of the atomic bomb. Through the NPT the big powers are, evidently, aiming at preserving the political power that accrues to them from their existing nuclear weapons as envisaged in the NPT, which is otherwise untenable.

The tallest claim of the framers of the NPT is that the Treaty aims at ensuring international security. It has been made out that any further increase in the number of nuclear weapon states would set off a chain reaction which would be impossible to control. The infinite increase in the nuclear weapon states, it is feared, would in turn increase the chances of indiscriminate use of nuclear weapons and consequently the chances of an all out nuclear world war. While none can deny the existence of such dangers, one finds little in the NPT that goes to mitigate them. The chain reaction which is now being sought to be prevented was in fact set off when the first country in the world decided to arm itself with nuclear weapons. So when the United States did it, it was but natural that the USSR should have done the same as a matter of self defence. With the USSR acquiring them, the West European countries felt threatened and were compelled to buy American nuclear protection at the cost of political subjugation. To shake themselves out of American dominance and to rise above the second rate power status, to which they had been reduced, Britain and France had to acquire independent nuclear deterrents. On the other side of the fence, China felt strangulated under the Russian nuclear umbrella and she too decided to go nuclear, raising the membership of the nuclear club to five. At present India, vowed to the peaceful use of nuclear energy as she is, cannot be considered as the sixth member but she has the potential to become so and with the nuclear power China threateningly poised against her it would be little wonder if she does, ultimately, go nuclear. If she does then, perhaps, Pakistan and Iran might also want to turn nuclear and so the process may continue. The chain reaction there certainly is but who is to blame for it, India or the Super Powers themselves. India, if at all she turns nuclear would do so as a victim of the chain reaction rather than as its initiator. In any case chain reaction can be prevented only if its source is destroyed. As long as even a single country in the world – let alone five – insists on retaining its right to possess nuclear weapons, the chain reaction would be impossible to stop. By trying to control the chain reaction by cutting the chain in the middle the NPT is trying to attain the impossible.

The danger of indiscriminate use of nuclear weapons by some states which might set off a nuclear world war also no doubt exists. But this danger would remain even if five countries are allowed to possess nuclear weapons. The fear that proliferation of nuclear weapons would increase the chances of their indiscriminate use and, consequently, those of a world war, is being aired now when proliferation beyond the circle of ‘big five’ is threatened by India. Obviously these fears are based on the assumption that the ‘big five’ are the only responsible governments that could be trusted with the safe custody of nuclear weapons. This may be what the big powers

feel about themselves but there has been nothing in their conduct so far which would give them the right to this self-flattery. All the tension that exists in the world has been generated by these big powers. Their standard of morality, as exposed by their use of the atom bomb against the defenceless Japanese civilians, is also not worth emulating. It would, in fact, be more correct to say that if the nuclear weapons are unsafe any where, it is in the hands of the big powers.

Every government would be smart enough to understand the implications of the use of nuclear weapons. Least of all need the world feel concerned about the nuclear weapons proliferating to India. If they at all do, they would be the safest here. India is by far the most "trigger unhappy" country in the world. So "trigger unhappy", in fact, that on numerous occasions she has been guilty of neglecting her national interests for the sake of international peace. India is, perhaps, the only country in the world that attempted unilateral disarmament as one of the first actions on gaining Independence, hoping to settle disputes with her neighbours on the basis of "Panch Sheel". She has been most reluctant to develop militarily ever since and has been pushed by circumstances into becoming the military power of the present standing. That the wars that she has had to fight have not been of her choosing is borne out by the fact that she has not tried to gain any political advantage even out of the three wars that she has won against Pakistan. Even in Bangladesh, which was liberated at the cost of thousands of Indian lives, India made no attempt at gaining any more advantage than sending the refugees back home. Nuclear weapons would, therefore, be safer in the hands of India than any of the countries holding them at present. And yet, while no notice was taken of nuclear weapons proliferating to UK, France and China, the world is piqued at the prospects of such proliferation to India.

The threat to world peace posed by the likely increase in the number of nuclear weapon states (lateral proliferation) is, indeed, a future one. The immediate threat comes from the process of further development of nuclear weapons to their deadliest form and the increase in the holdings of such weapons with the existing nuclear weapon states (vertical proliferation). The fact that the NPT tackles only the future threat and takes no notice of the present one makes one to suspect the sincerity of purpose of its initiators. Knowing that the sources of the present nuclear threat to the world are the big powers themselves, who would be taken in by their promise of providing collective security to the non nuclear states? It would be like a potential thief promising to guard your house. Clearly the *de facto* originators of the Treaty, the Super Powers, in floating the NPT, have been motivated b reasons that have nothing or little to do with the security of mankind. National interests are obviously being served under the garb of common good.

INDIAN INTERESTS

It appears ironical that India, which has been advocating the cause of international peace more than any one else and which took an active part in the various deliberations on disarmament and control of nuclear energy as a member of the eighteen Nations Disarmament Committee, should have refused to sign the NPT which has been the result of such deliberations. The fact is that the NPT that emerged out of the years of wrangling bore no resemblance to the treaty that India had been striving for – a treaty that would have not only completely banned the further development and manufacture of nuclear weapons but also ensured destruction of existing stockpiles. We have already seen that with the vertical proliferation of nuclear weapons proceeding unchecked, the present NPT, even if signed by all nations, would not make the world any safer to live in and would serve little purpose other than legalising the possession of nuclear weapons by the big powers. By signing the Treaty India would not only be playing into the hands

of the big powers but also be foreclosing her nuclear option for ever. Such a step must be considered in relation to her national interests which are dealt with in succeeding paragraphs.

Power Generation

Calculations have shown that a nuclear power station using uranium fuel will, in the long run, be cheaper than a conventional power station located away from deposits of coal by more than 800 Km. The importance of nuclear power stations for India can be gauged by the fact that 35 percent of India's land areas, populated by about 175 million, are situated in such regions away from coal deposits. These regions also include some of India's major industrial areas. Little wonder that India is paying so much attention to the utilisation of nuclear energy for power generation.

India commissioned its nuclear power station, the Tara pore power plant, in January 1970. Since then another nuclear power station has been commissioned in Rajasthan and two others are under construction, one each in Tamil Nadu and Uttar Pradesh. In addition to these, three more such power stations have been planned for the near future. Altogether the seven stations would have a capacity of 2700 megawatts i.e. about 8 percent of the total generated electric power in India. There have, however, been snags in the implementation of this plan which is now running much behind schedule.

Both the power plants presently functioning are, however, dependent on an imported supply of nuclear materials. On the face of it, therefore, the signing of the NPT, which would ensure an uninterrupted supply of such nuclear materials, holds out prospects for an accelerated development of the nuclear power industry in the country. A careful examination and a long term view would, however, show that by signing the NPT we would be surrendering complete control of our nuclear power programme to the United Nations and thus making ourselves vulnerable to political arm twisting by the super power who de facto control the United Nations. It would also make us for ever dependent on the nuclear power for nuclear fuel supply and permanently close the door to self reliance in the nuclear field. India's refusal to sign the Treaty has certainly created a crisis for the nuclear power industry for the present but in may prove to be a blessing in disguise for the future. The external pressures that are being applied to force us into submission may touch our national dignity which may in turn make us move ever more resolutely towards self reliance as has been hinted at by Prime Minister Morarji Desai.

Peaceful Nuclear Explosions

Soon after the first use the Atom for destructive purposes over Hiroshima and Nagasaki, research began to be conducted by the United States and later by the USSR in the peaceful uses of atomic energy. These efforts were, however, discussed in an international forum only in 1955, when as a result of the "Atom for Peace" Plan sponsored by President Eisenhower in 1953, an international conference on peaceful uses of atomic energy was convened. It was at this conference that the Soviet Union and the United States revealed to the rest of the world many secrets of their progress in the field of atomic sources of energy. At present both the Soviet Union and the United States are well advanced in their programmes for the utilisation of this enormous source of energy for peaceful purposes. One is the generation of electricity, reference to which has already been made in the preceding paragraphs, and the other is by making use of nuclear explosions for engineering applications.

The application of the peaceful nuclear explosion (PNE) technique for economic development is now a well established phenomenon. In the United States the PNE programme is

called “Plowshare”. The Soviet Union also has a similar programme called “The programme for the use of Commercial Underground Explosions” The research and tests performed by the USSR and the United States have followed a similar trend of examining the possibilities of using nuclear explosions for recovering oil and gas, for opening up ore fields and for earth moving work in the construction of canals, dams etc. About 53 and 14 PNE experiments had been carried out by the United States and the Soviet Union respectively till the end of 1976 with very encouraging results – both as regards safety as well as economy. The experiments have shown that recovery of natural gas and oil by nuclear explosion stimulation is technically feasible and holds economic promise. There is also promise of economic extraction of copper from low grade ore. In view of what has been achieved so far and the great promise that they hold for the future, the PNE have special significance for India. Activation of near depleted oil fields, recovery of natural gas, extraction of copper from the large deposits of low grade copper ore that India possesses, excavation of canals and construction of artificial harbours (being deficient of natural ones) are for India matters of immediate concern for which PNE would be indispensable.

While generation of electricity from nuclear power plants does not by itself pose any problem other than producing plutonium as a by-product, (which could be used for making nuclear weapons), the PNE would substantially boost a nations actual potential for nuclear weapon making. This is, in fact, what caused the alarm when India carried out her first PNE test in 1974. Of course it turned out to be a false alarm. The mere conducting of a PNE does not automatically give one the capability of making nuclear weapons. Apart from categorical assurances by the then Prime Minister that India would never make nuclear weapons, there was no follow up action to suggest that the explosion was a fore-runner of any weapon development programme.

Whatever the world reaction, India cannot afford to forego the great benefits of the PNE in her economic development programme. The NPT would foreclose this option for ever. The provision in the NPT for the conduct of PNE by the nuclear powers on behalf of the non-nuclear powers only ads insult to injury. With the big powers today engaged in the bitterest world-wide power struggle how could they be trusted with carrying out this social service without attaching political strings to it.

The Security Aspect

The threat to India’s security comes mainly from China and China being a nuclear power, the threat automatically becomes nuclear. The permanency of the Chinese threat to India is evident from the following foreign policy objects of China: -

(a) Regaining lost territories.

(b) Removal of Russian and American influence from Asia.

(c)Export of Chinese Revolution first to the countries of Asia and ultimately to all the countries of the world.

What is pertinent to our security problem is firstly that China treats large portions of Indian Territory as her own “lost territory” and is bound to “regain” it in accordance with her policy objectives. Secondly, after the removal of the Russian and American influence from Asia, India would still remain a major hurdle in the way of the implementation of her policy objective of exporting the Chinese Revolution to the countries of Asia. Until India is subjugated either militarily or politically no policy of China aiming at establishing her hegemony in Asia can ever

succeed. The threat to India's security from China is not, therefore, just a temporary phenomenon related to a border adjustment between the two countries which could be sorted out across a conference table.

Initially when China decided to turn nuclear it was, probably, for reasons of her national security. The threat to China's security comes mainly from the Soviet Union and the United States of America. Both these powers being nuclear China had to turn nuclear as a matter of self defence. For this a mere retaliatory capability, enough to deter a Super Power from making a nuclear attack on China, would have sufficed. But as indicated by her policy objective, China has aims much higher than just looking after her security through a nuclear weapons programme matching that of the Super Powers. China today seeks to neutralise the only superiority that the Super Powers have over her and thereby fulfil her imperialistic policy objectives. After China has developed a retaliatory second strike capability and thereby established a deterrent to Soviet and American intervention, would she not in a position to threaten India with the use of nuclear weapons?

India has grown militarily many fold since the fateful days of 1962 and is likely to grow further, even though reluctantly, if the threats to her security continue. A stage may come when a confrontation with a conventionally powerful India may lead China to a state of desperation and impatience and with no fear of retaliation she may be tempted to make short work of the war through the use of her nuclear weapons. We cannot afford to be found wanting in this respect then. Nor will it be possible for us to take the bomb and its delivery system out of the hat. Our growth in the nuclear field must, therefore, keep pace with our growth in the conventional military field as a normal course even when there is no immediate nuclear threat to the country.

The nuclear threat to our country may be considered under the following heads: -

(a) Threat from strategical nuclear weapons.
(b) Threat from tactical nuclear weapons.
(c) Threat of political black mail

Threat from Strategical Nuclear Weapons

Use of strategical nuclear weapons by China against India appears unlikely even when there is no danger of retaliation. The main reason being that a strategic strike would have to be made amid civil population and a nuclear war-head would not be able to distinguish the "bourgeoisie" and the "reactionary" from the "proletariat" on landing in such areas. If China is to fulfil her policy objective of fomenting Revolution, she cannot afford to turn the Indian masses against herself. However we cannot take the risk of basing our security on such an assumption. The communists have a great knack for distracting their victim's attention from the real issues. If they would work against the creation of Bangladesh and yet keep the bulk of its population on their side, the Chinese could also, probably, kill a few thousand Indians without shaking the loyalty of the pro-Chinese Indian Communists who are ultimately to guide the Chinese Revolution into India. India cannot afford to take chances and must be prepared to meet this threat.

The very thought of the destruction that would be caused by a strategical nuclear war-head would be so dreadful that no country would risk receiving one on itself, even it possessed the capability of landing many more on its opponent. The Chinese threat from such weapons can, therefore, be met by just developing a retaliatory capability. We do not require parity but just a second strike capability after being able to stand up to a possible disarming first strike by China,

which would constitute a deterrent credible enough to dissuade her from using such weapons against us.

Threat from Tactical Nuclear Weapons

China has not yet developed her tactical nuclear weapons but there could be no reason to believe that she would not be doing so. No nuclear power would halt the process of weapons making after just developing strategic weapons. As a matter of fact while strategic weapons have only a deterrence value, tactical weapons could actually be used. There was a time when it was universally accepted that any use of tactical nuclear weapons would inevitably escalate into a large scale thermonuclear war (the nuclear fire-break theory). However, with the advancement in the nuclear tactical weapons technology, which has been able to develop "clean" (guaranteed free of residual contamination and nuclear debris), tactical weapons of yields as low as the fraction of a kilo ton and suitable for targeting against a platoon of the infantry, there has been, of late, much re-thinking on the subject. An increasing war-fighting role for the tactical nuclear weapons is now foreseen. In any case tactical nuclear weapons would be necessary for any nuclear power, if only for their deterrence value. Strategic deterrence is not automatically deterrence against tactical weapons. Purely for reasons of self interest no country would want to raise the level of violence by using strategic weapons in retaliation to the use of tactical weapons by its opponent.

For China tactical nuclear weapons have a special utility against India. The terrain over which she would have to fight with India is ideally suited for use of tactical nuclear weapons even in their present state of development. The area (Arunachal and Ladakh is under developed and sparsely populated affording opportunities for dealing with military targets in isolation and without giving cause for protest to the rest of the world. There is no reason why China should not use these weapons when India does not possess a retaliatory capability.

As tactical nuclear weapons have a limited destructive capability and would in any case be used only against the armed forces who could be trained and equipped to protect themselves against a tactical nuclear attack, use of tactical nuclear weapons would not have the same implications as the use of strategical nuclear weapons and a mere retaliatory capability would not ensure security against their use. The only credible deterrent in this case would be proper balance of power with China, not only matching weapon with weapon but also by matching offensive and defensive nuclear tactics.

Political Black Mail

During peace a country's national interests are promoted through diplomacy. For fulfilling this task diplomacy has three means at its disposal: persuasion, compromise and the threat of force. Diplomacy based on persuasion and compromise alone would of course be an ideal instrument for promoting international peace but under the present system of nationalistic fanaticism resulting in the rigidity of postures adopted by opposing countries, force is the language that is better understood in international relations. Diplomacy through persuasion and compromise must, therefore, be backed by the threat of use of force for it be successful. The greater the imbalance of military power in a country's favour vis-à-vis its opponent the greater will be the credibility of its threat of force and consequently the effectiveness of its diplomacy. This is what Mao Tse Tung had in mind when he said that "military power grows out of the barrel of the gun". Military strength is, therefore, as important during peace as it is during war.

The NPT would prevent us from becoming a nuclear power and thereby perpetuate the military imbalance between us and the Chinese. With Chinese diplomacy base on military strength and our purely on persuasion and compromise we would be miserably exposed to the

worst type of political black mail. What chance would we even have of judicious settlement of our disputes with china? There would probably be peace but for us a dictated and a humiliating peace.

The threat from political black mail being psychological a mere nuclear weapons capability would go a long way in meeting this threat. Of course there would still remain the imbalance in the conventional military strengths of the two countries, but a nuclear power status alone would enable India to speak from a position of some sort of parity, if not that of strength, during dialogues with China. We know how a mere nuclear explosion of 1974 has greatly boosted up the morale of the Nation even though we are still quite a distance away from the nuclear weapons capability.

INDIA'S NUCLEAR POLICY

Having analysed our national interests, let us now see how our present nuclear policy serves these interests. Our nuclear policy under the Janata Government may be summed up as under: -

(a) The resolve not to make nuclear weapons, not to conduct PNE and not to sign the NPT in its present form.
(b) Maximum utilisation of nuclear energy for generating power.
(c) Attaining self sufficiency in nuclear materials technical know-how and equipment required for functioning the nuclear reactors now in existence and also the construction and functioning of future reactors.

It may be mentioned here that the present nuclear policy is a continuation of the nuclear policy of the previous government. There may appear to be some difference in that the present government has seceded not to continue any PNE programme started by the previous government. But we have seen what the real motives behind the Pokhran explosion were. The Janata Government's resolve not to conduct PNE, cannot, therefore be treated as any serious deviation from the past policy. What is pertinent to our subject, however, is that in the formulation of this policy, both in the past and present, no thought appears to have been given to the country's security interests. The firm resolve not to make nuclear weapons and not even conduct PNE, which might encourage weapon making, would show that either no nuclear threat to the country is envisaged or India is depending on nuclear protection from sources other than her own. As it is unlikely that the nuclear threat has not been appreciated at all by the government let us examine the other alternative and see how far we can depend on external sources for our protection.

The main cause of lateral proliferation of nuclear weapons has been national security. In order to obviate the necessity for such proliferation the nuclear states have offered a nuclear "umbrella" to the non-nuclear states. This system of collective security has bee incorporated in the NPT. Under this system the nuclear states would collectively meet the nuclear threat to non-nuclear states. In theory this system may provide a good alternative to the non-nuclear states but in practice it would appear ridiculous. Firstly the nuclear powers being themselves at logger heads with each other it would be impossible for them to act in unison to the collective security system meaningful. Secondly a nuclear threat any where can originate only from the nuclear powers themselves. By asking them to ensure protection from a nuclear threat would be, as has been said earlier, like asking a potential thief to guard the house that he is to burgle.

The nuclear powers – particularly the super powers have also been individually offering nuclear protection to non-nuclear states, outside the NPT. This would probably be a more feasible solution to the problem of national security. But this system would have serious snags too. In the first instance, every non-nuclear country would have at least three if not five nuclear umbrellas to choose from. By accepting nuclear umbrella of one would not a non-nuclear country be antagonising and getting involved in the cold war, (if not the hot), which is being fought between the big powers. A country seeking protection would first be required to specify its enemy. Having joined a power block thus, the non-nuclear country, being the weaker partner, would lose its identity, diplomatic manoeuvrability and political freedom, making any other security so achieved meaningless and not worthwhile. A country like India, which, with its size, population and the particular position on the glove is destined to play an independent role in world politics, cannot be expected to accept the role of camp follower.

Even when a non-nuclear country surrenders itself completely to the nuclear power to buy its security, there will still be no guarantee of it receiving such protection in time of need. For it would be most unrealistic to expect any country to involve itself in a self destructive nuclear duel for the sake of another. So in the system of nuclear umbrellas in which the protector country would have exploited its protectorate country economically and politically during peace, it would most likely back out of its obligation for fear of the dangerous consequences of a "nuclear fire break". The only help that a victim country could then expect would be sympathy, mercy missions, financial help for reconstruction, and a general denunciation of the aggressor, who could also be warned to desist from such action in future. It would, indeed, be poor consolation for the victim country. In any case such help would be forthcoming even without having accepted a nuclear umbrella. Perhaps even the aggressor, after having achieved his objective would come out to help his victim, just as the Allies came out to help Japan. We cannot, therefore, subscribe to a system, wherein our security requirement would be conditional to the national interests of others. If vertical proliferation cannot be checked and China is to continue developing her nuclear weapon capability, India too would have to develop an independent nuclear deterrent so as to be able to look after her defence interests. It may, therefore, appear that India's present nuclear policy, vowed as it is to not making nuclear weapons, runs counter to the country's defence interests. It may not, however, be so in reality. It is well known that self sufficiency in nuclear materials, equipment and technology is a prerequisite for a nuclear weapons programme. Till such time that we attain such self reliance there is hardly any point in even talking about a nuclear weapon programme. Therefore, as long as our nuclear policy aims at keeping our weapons option open and maintains nuclear technological progress towards self sufficiency and self reliance, which it certainly does, it cannot be considered to be in conflict with our defence interests – not at least for the present when we are still far away from that state of self sufficiency.

It is possible that we have decided not to make nuclear weapons as a contribution towards international security and world peace through unilateral rejection of nuclear weapons. The moral pressure that we would be exerting on the rest of the world in general and the present day nuclear powers in particular would indeed be great. However, such a policy can carry weight only when it is backed by a nuclear weapons making capability i.e. when we can make them and still do not do so. Such a capability alone would provide India with the necessary leverage in dealing with nuclear powers in an effort to make them see reasons and bring about a total test ban and world disarmament in nuclear weapons.

ON THE ROAD TO SELF-SUFFICIENCY

The importance of development in the field of atomic energy was realised by the Indian leaders and scientists even before Independence. It was thus that an Atomic Energy Commission was established through one of the first enactments of Parliament of free India which eventually led to the formation of Bhaba Atomic Research Centre. The development in the atomic field has been placed under direct charge of the Prime Minister and has been receiving the Government's consistent attention. The greater stress of India's nuclear development policy has since been on self reliance and self sufficiency. With this in view research work has always been receiving top priority. The Tata Institute of Fundamental Research providing the base, six more research centres came into being. Today four research reactors are functioning. "Aspara" enables research in nuclear physics and production of radio isotopes, "Cirus" is designed for engineering experiments, while "Zerilina" and "Purnima" enables research in nuclear fuel and moderators.

Self sufficiency in the nuclear field will depend on the success of our research efforts. Research is a long and laborious process in which results come in a trickle and are not always visible. Over-all achievements in the nuclear field are, however, good reflectors of the success of a country's research effort. In India although foreign assistance has been vital for our nuclear development, much credit for our achievements must also go to our research effort. We have today two nuclear power stations functioning – the Tarapur Atomic Power Plant and the Rajasthan Atomic Power plant. Two more – one in Tamil Nadu and one in UP - are under construction, while three other such stations have been planned for the near future. Among the ancillary facilities that India has developed, or are in the process of being developed, the important ones are the mill for extracting uranium from ore and the fuel fabrication plants, four heavy water plants (HWP), and a plant to separate plutonium from the used uranium fuel. Unfortunately, there have been serious setbacks in most of these plants becoming operational on schedule. The four HWP plants have met the worst fate. The Baroda HWP was wrecked by an explosion on 3 December 1977. In an accident the heat exchanger for the Tuticoring HWP blew up on 24 January 1976. The Kotah HWP, built on Indian design ran into technical difficulties, which delayed its commissioning by at least three years, while the Talcher suffered a great setback when the ship bringing in its towers reportedly ran into rough weather and the two towers got thrown over-board. This delay in the indigenous production of heavy water has greatly affected the commissioning of the second unit of the Rajasthan Atomic Power Plant. Heavy water, which is used as coolant and moderator in the reactors of the type being built in India using natural uranium as fuel, has had to be imported from the Soviet Union for this unit. The Soviet Union is missing no opportunity in extracting the maximum amount of financial and, probably, political benefits through this deal.

The biggest hurdle on India's march towards self-sufficiency is, however, the problem of nuclear fuel. We made our first mistake when we decided to base the Tara pore Power Plant (TAPS) on enriched uranium as fuel. Owing to the prohibited cost and complex technology involved in enriching uranium only the United States and of late the Soviet Union can enrich uranium on a commercial scale. It is unlikely that India would be able to enrich uranium in the near future. Either we got taken in or probably we had no choice when we opted for enriched uranium base nuclear reactor but this has all the same made us dependent on imports of this fuel for a long time to come. We have already seen how we must lie at the mercy of the enriched uranium exporting countries if we are to keep the TAPS operational. We have no doubt learnt a lesson and all the other nuclear reactors which have been constructed, or are under construction, are being based on natural uranium for fuel. It is hoped that two units of the HWP alone will b

able to meet our present requirement of heavy water and the four units put together will be able to meet our future requirements. Efforts are also afoot, (if the Prime Minister's recent statements are any indication), to improvise other fuel for TAPS by recycling a Mixed Oxide (MOX) fuel of plutonium and uranium.

But the problem of fuel does not end here. Uranium itself has its limitations. The foremost being that India is poor in uranium. India's proved reserves of uranium are estimated at 35000 tons. This may appear quite a lot but natural uranium consists mainly of 'heavy' uranium (U-238). Its fissile content,U-235 is only 0.7 per cent. This would give the correct picture of what this uranium reserve actually means. Exploration in search for more uranium deposits is going on and chances are that much more will be found. However, with its ever increasing demand and a general short supply in the world a uranium crisis is bound to occur sooner than later, not only in India but also in other countries. For us the answer lies is using uranium whose fissile content is known as U-233 and which is found in fairly abundance in our country. It is believed that using the breeder principle thorium can last indefinitely and with appropriate methods it could give better results than uranium. By the breeder process more fuel is produced than consumed in the reactor. As a matter of fact breeder reactors are already functioning in some countries but they are all uranium based. In India too the breeder programme has been launched but with thorium as the fuel instead of uranium. A breakthrough in this field has already been made and a pilot plant for separating the fissile content of thorium (U-233) has already been set up. Indian scientists are handicapped by the fact that very little work in this regard (thorium based breeder) has been done in the rest of the world and they have had to start from the scratch. Still it is hoped that the breeder technology would be operative in the reactors by the 1980s.

It would, therefore, appear that India today is well advanced on the road to self sufficiency. The super powers are trying to check this progress through the NPT for reasons, which we have already discussed earlier. So far India has refused to yield to all the pressures that are being applied by the Super Powers to make her submit to the NPT and is forging ahead towards self sufficiency in the nuclear field. It is hoped that she will be able to continue her march till the goal is achieved. Weather she goes for nuclear weapons or not is another matter.