CHAPTER - FIVE
Chapter V

POLITICS OF THE NWFZ

In this chapter, a brief background of the nuclear non-proliferation regime, meaning of nuclear-weapon free, peaceful nuclear energy and the connection, verification system, concerns of the states within the established zones, existing nuclear arms, infrastructures and NWFZ, third world and NWFZ, and Sea and Outer Space connection are discussed.

Background:

International action to prevent the spread of nuclear weapons was started by the treaty of non-proliferation of nuclear weapons (NPT). This is the first step taken towards the creation of nuclear non-proliferation regime. In addition to NPT, there are many other treaties for the creation of non-proliferation regime.¹ For

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¹ Nuclear non-proliferation treaty was signed in 1968. According to the treaty, non-nuclear-weapon states agree neither to seek nor to acquire technology or materials for nuclear weapons production, while weapon states pledge not to transfer same to non-weapons states .... Parties to the treaty include Egypt, Iran, Iraq, Libya, Syria, but not Argentina, Brazil, Chile, Cuba, France, China, India, Israel, Pakistan, Saudi Arabia .... Non-proliferation regime or system is a set of rules, regulations, norms, understanding, procedures and institutions that attempt to regulate the international spread of nuclear technology and to constrain the ability of states to acquire a nuclear-weapons capability.
example, the treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (commonly known as the partial Test Ban Treaty or PTBT) and the Treaties of Tlatelolco and Rarotonga can be noted. However, the NPT is the centre of all these treaties. It can be understood by the basic provisions of the treaty which set out the fundamental obligations for the creation of non-proliferation regime. Article I reads as follows: "Each nuclear-weapon state party to this treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly, and not in any way to assist, encourage, or induce any non-nuclear weapon state to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices". And the Article II reads: "Each non-nuclear-weapon state party to this treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly, not to manufacture or otherwise

Footnote 1 cont'd ...

acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in
the manufacture of nuclear explosive devices. For maintaining these fundamental obligations, both the
nuclear and non-nuclear weapon states have accepted four important points. They are:

(1) non-nuclear weapon states ratifying the treaty pledge not to manufacture or receive
weapons and peaceful nuclear explosives. (Both nuclear weapons and peaceful nuclear explosi-
ves are prohibited); (2) to verify that they are living up to this pledge, non-nuclear-
weapon states also agree to accept International Atomic Energy Agency safeguards on all their
peaceful nuclear activities (an arrangement known as "full-scope" safeguards); (3) all
countries accepting the treaty agree not to export nuclear equipment or material to non-
nuclear weapon states except under IAEA safeguards and nuclear weapon states agree
not to assist non-nuclear weapon states in obtaining nuclear arms; (4) all countries
accepting the treaty agree to facilitate the fullest possible sharing of peaceful nuclear
energy. (In practice this is a pledge by the advanced nations to help less developed
countries build peaceful nuclear programme). (5) All countries accepting the treaty agree
to pursue negotiations in good faith to end
the nuclear arms race, and achieve nuclear
disarmament under international control. (In
practice this applies to the United States and the Soviet Union).

However, the treaty does not prohibit parties
from accumulating nuclear weapons material (highly enriched
or plutonium) as part of their peaceful nuclear energy or

2 See the Text of the NPT in Appendix G.

3 Ibid.
research programmes as long as the material is subject to IAEA inspection. This means parties to the treaty can become capable of producing nuclear arms without violating the terms of the treaty. If an interested party desire to make nuclear sales to countries that are not parties, such as India or Argentina (even if these countries have unsafeguarded nuclear facilities), it can

4 Natural uranium contains less than one per cent of U-235, the isotope which is readily fissionable. Most of natural uranium is comprised of U-238, which is not readily fissionable. In order to be usable in nuclear weapons as well as in most power reactors, uranium must be "enriched" to obtain a higher concentration of U-235. For use in a nuclear power reactor, uranium must be enriched to about 3 per cent U-235; for weapons use, uranium must be 90 per cent U-235 or greater. Enrichment plants are large, very expensive and require huge amounts of electricity. Only a handful of countries now have enrichment plants.

Plutonium is the other material that can be used to make a nuclear explosive. It can also be mixed with uranium to fuel some types of power reactors. Plutonium is a man-made material -- it does not occur in nature. It is formed in a nuclear reactor when U-238 atoms capture a neutron. However, for the plutonium formed first be separated from residual uranium and fission products by chemical "reprocessing". This involves chopping up the irradiated uranium, dissolving it in strong acid, and separating out the plutonium. Like enrichment plants, reprocessing plants are expensive and difficult to build, and only a few countries in world have them. See, Warren Donnelly, *Pakistan and Nuclear Weapons* (Washington: Environment and Natural Resources Policy Division, Congressional Service, 1987), pp. 889-90.

be interpreted that the treaty permits this activity too. However, the items exported by any parties should be placed under IAEA safeguards. For example, U.S. sales of nuclear fuel to South Africa, which has at least one unsafeguarded nuclear installation, are permissible under the treaty as long as the fuel were placed under safeguards in South Africa. In the late 1970s and early 1980s, China also sold nuclear materials to Argentina, India, Pakistan and South Africa without requiring the application of IAEA safeguards. The non-nuclear weapon states -- Argentina, Brazil, India, Israel, Pakistan and South Africa -- are not party to the treaty. They have unsafeguarded nuclear activities. Libya and Iraq, two additional potential nuclear weapon states are parties to the NPT.

In the NPT review conferences held in 1975, 1980 and 1985, the complaints of non-nuclear weapon states were focussed on two important elements of the treaty:

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6 See Dan Smith, *Africa's Nuclear Capability* (London; World Campaign Against Military and Nuclear Collaboration with South Africa, 1980), pp. 9-11; IAEA safeguards and related issues are discussed in a section of this chapter entitled "Verification System".

Article IV, which calls for the fullest possible transfer of nuclear technology for peaceful purposes, and Article VI, which, along with the treaty's preamble, obligates nuclear weapon-state parties to "pursue negotiations in good faith" toward the cessation of the nuclear arms race and calls upon them to continue negotiations to achieve a comprehensive nuclear test ban. However, these problems are not completely solved.

Meaning of Nuclear Weapon Free:

At present, there are three treaties which are concerned with the definition of nuclear weapon. They are: NPT, Tlatelolco and Rarotonga. Article IX of the NPT says: "For the purpose of this treaty, a nuclear-weapon state is one which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to January 1, 1967". Therefore, according to the NPT, there is no other nuclear weapon state except the five. That means the explosive devices relating to the weapon production are not spread and therefore the states without these devices can be considered as a nuclear


9 Article IX of the NPT.
weapon free states. This definition, thus, invalids the argument that 'horizontal proliferation' or the spread of nuclear weapons to the third world/non-nuclear countries, especially to Argentina, Brazil, India, and Pakistan are destabilising the non-proliferation regime. According to Tlatelolco treaty "a nuclear weapon is any device which is capable of releasing nuclear energy in an uncontrolled manner and which has a group of characteristics that are appropriate for use for warlike purposes".10 This definition is not clear about what does it mean by 'uncontrolled manner' and 'group of characteristics'. However, it recognises the importance of the 'link' between both the peaceful as well as nuclear explosive of a device, as the type of devices is not explained in the treaty. The treaty of Rarotonga explains, "... any nuclear weapon or other explosive device capable of releasing nuclear energy, irrespective of the purpose for which it could be used".11 It is not clear, however, in the Rarotonga treaty whether treaty really means of covering all types of devices. Thus, these treaties are failed to define exactly what do they mean by nuclear weapon. But the interest of nuclear free is recognised by all the treaties on the basis of the principles of the UN, as seen in the

10 Article V of the Tlatelolco Treaty.
11 Article I of the Rarotonga Treaty.
first chapter. Since they depend upon the UN principle for nuclear free status, they are also abide by the UN definition of nuclear weapon. According to the UN, 'nuclear weapon usually means nuclear bombs and warheads'.

Therefore, the 'nuclear free' efforts of both the Tlatelolco and Rarotonga can be stated as the efforts for making their region free of nuclear bombs and warheads. Thus, these two 'nuclear free' or 'nuclear weapon free zones' are recognised by the UN as the efforts of strengthening the non-proliferation regime.

However, for the purpose of the study, it is important to know the other components of nuclear weapon systems. Because these components are part and parcel of weapon system without which the nuclear explosive power is useless. For example, in Australia, there are several installations such as navigation aids for submarines, communications-intercept and direction-finding antenna that can be used for target acquisition and sonar arrays. Especially, they can be used in connection with maritime patrol aircraft carrying nuclear depth charges, and by attack submarines. Thus, in general, they serve for carrying out a nuclear war in the Pacific. Although the South Pacific is declared as nuclear free zone, according to nuclear war strategy, these installations

would be targeted by the Soviet Union.\textsuperscript{13} Also, in Latin America NWFZ, there are nuclear weapon related installations. Therefore, the definition of NWFZ covering only bombs and warheads is not acceptable to many third world countries.\textsuperscript{14} But the supporters of this definition are in view that the bombs and warheads are only made for war purpose and therefore it should be considered first rather than all other components. Till the time the zone which is not having, according to them, the bombs and warheads, and which is having all other components can be considered as a NWFZ. They hold the view further that it is very difficult to define the "nuclear free" concept, therefore one should accept the most dangerous element like bomb and warheads first to be controlled in the zone and the rest should be put under the IAEA control. According to them, if a member country of NWFZ wants to abolish the installation of all components which may be used in nuclear warfare and which may therefore become nuclear target in war, it should raise this question bilaterally with the nuclear state concerned. Many South Pacific countries have raised the issue of American installations in Australia. Some argue that

\textsuperscript{13} Desmond Ball and R.H. Mathams, "The Nuclear Threat to Australia", in \textit{Australia and Nuclear War} (Sydney: Croom Helm, 1983), pp. 38-54.

since the installations are difficult to be defined and their uses are much interrelated, the components which are deployed only for the purpose of war, for example delivery vehicles, should be scrapped.\textsuperscript{15} Thus, the definition of nuclear weapon free zone is not clear, as the nuclear weapon itself is not defined properly.

\textit{Peaceful Nuclear Energy and the Connection:}

The peaceful nuclear explosive programme was started at the Lawrence Radiation Laboratory, University of California during 1956-1957. This is called "Plowshare" programme in US.\textsuperscript{16} The same peaceful nuclear explosive programme was also carried out by the Soviet Union in late 1950s. This is called in the Soviet Union as "the programme of the use of commercial underground nuclear explosion".\textsuperscript{17} It was believed in both US and Soviet Union that the peaceful nuclear explosion might lead any country to produce nuclear weapons. Therefore, the NPT which was sponsored by nuclear weapon states -- US, Soviet Union and UK -- is very restrictive. However, the

\begin{itemize}
  \item \textsuperscript{15} Albert Wholsetter, n. 5, pp. 36-56.
  \item \textsuperscript{16} Gerald Johnson, "Plowshare at Cross Roads", \textit{Bulletin of the Atomic Scientist} (Chicago), vol. 26, no. 6, June 1970, p. 83.
\end{itemize}
The Tlatelolco Treaty gives the non-nuclear states the right to use nuclear energy for peaceful purposes, in particular for their economic development and social progress. Article 18 says: "the contracting parties may carry out explosions of nuclear devices similar to those used in nuclear weapons." This recognises the fact that there is a close relation between the nuclear explosion for peaceful purposes and the nuclear explosions for weapon programme.

However, the peaceful nuclear explosions could be divided into two categories:

1. Mining operations for the recovery of natural resources. Among the various uses were envisaged: the fracturing of oil and gas bearing rock in order to stimulate oil and gas recovery; the blasting out of cavities to store gas or oil or nuclear waste from spent fuel; the leaching of copper and other minerals from ore-bearing rock; the crushing and fracturing of ore; the removal of overburden and uncovering of mineral rock for strip mining; and putting out run-away oil- and gas- well fires by sealing them off with an underground explosion.
2. Excavation operations and earth moving by cratering explosions. Among the operations envisaged here were the excavation of canals, harbors, mountain passes and highways; the diversion of rivers; and the building of dams and water reservoirs.

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18 Article 18 of the Treaty of Tlatelolco.

The non-nuclear weapon states which are bound with IAEA safeguard system face problem to get these peaceful nuclear technology for their social progress. Especially, it is believed by the countries which are not agreeing with the NWFZ concept that once an individual state or a region declares itself as a nuclear free zone, it implies that they lose their right of using nuclear technology for any purposes. For example, the Latin American countries which are committed to the concept of NWFZ lag to get the nuclear technology whereas the countries in the same zone, Brazil, Argentina and Mexico, which are not satisfied with the concept get more support for their peaceful nuclear activities. According to these countries, the NWFZ is a control mechanism which will affect the zone countries' economic development. Because of this reason, many countries, especially countries those who are not signatories to both the NPT and NWFZ seek to develop nuclear device for commercial purposes. However, the connection between peaceful nuclear power and nuclear weapons can be understood as


21 For a good study on the economics of nuclear power, see, William C. Potter, *Nuclear Power and Non-Proliferation: An Inter-disciplinary Perspective* (Oelgeschlager, Gunn and Hain Publishers, 1982), pp. 99-130.
Warren Donnelly explains "that both utilize the energy produced by the fission of uranium or plutonium atoms. The difference is that in a power reactor the concentration of fissionable material in the nuclear fuel is low and the reactor is designed to produce a slow, sustained reaction to make steam, turn a turbine, and generate electricity, while a nuclear weapon utilises material with a much higher concentration of fissionable material, and is designed to produce an uncontrolled, explosive reaction". He continues: "uranium enriched to 3 per cent U-235 is sufficient to fuel a nuclear power reactor; weapons require either uranium enriched to 90 per cent U-235 or relatively pure plutonium separated from the spent fuel of a reactor". Thus he points out that "it is generally accepted today that the conceptual design of a nuclear bomb is within the capabilities of most nations". If a country has either uranium-235 or plutonium-239, it can go for nuclear weapon programme (see the following diagram).

Diagram 1

Routes to Nuclear Weapons

1 Direct Routes:

All these operations may be done under military

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22 Warren Donnelly, n. 4, p. 890.
control on a small scale and secretly at a cost of about 1 million per atomic bomb, for a couple of dozen bombs.

2 Indirect Routes:

The nuclear explosives may be produced as by-products of a peaceful power programme. The marginal cost of so producing a nuclear explosive device may be no more than a few hundred thousand American dollars.

Verification System:

IAEA and regional organizations are responsible for the verification of NWFZ. Regional verification set-up is made by both the Tlatelolco and Rarotonga treaties. They are the Agency for the Prohibition of Nuclear Weapons in Latin America (OPANAL) and the South Pacific Bureau for Economic Cooperation. IAEA, which was founded in 1957, has established a programme of on-site inspections, audits and inventory controls known as "safeguards". It verifies the transfers of nuclear materials from one country to another country based on certain agreements designed to ensure that they will be used only for peaceful purposes. The objective of IAEA is set out in Article II of the IAEA's statutes. It says: "The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it at its request or under its supervision or control is not used in such a way as to further any military purpose". 23

23 *Arms Control and Disarmament Agency (ACDA), Arms Control and Disarmament Agreements* (Washington: Government Printing Office, 1980), pp. 83-88. "Safeguards, agreements required by the NPT have entered into force for 68 countries. For 44 non-nuclear weapon states party to the treaty, the relevant safeguards agreements have not yet entered into force; however, none of these states has significant nuclear activities", ibid., p. 88.
Article III, A, 5 gives the right to the agency "to establish and administer safeguards designed to ensure that special fissionable and other materials, services, equipment, facilities and information made available by the Agency or at its request or under its supervision or control are not used in such a way as to further any military purpose; and to apply safeguards, at the request of the parties, to any bilateral or multilateral arrangement, or at the request of a State, to any of that State's activities in the field of atomic energy". Thus, the IAEA does two jobs: cooperating for peaceful nuclear energy and verifying the materials in order to stop the weapon programme of the country which uses the materials for peaceful uses. Therefore, it can be stated that the IAEA also recognize the close connection that the materials used for peaceful purposes can also be used for weapon production. Technically it is feasible to divert nuclear materials even from closely guarded facilities, and the IAEA might well not even be able to detect their disappearance.25

24 Ibid.

However, the problem that the Agency face can be noted as follows: (1) it uses seals and cameras in the installation of particular country which uses the materials under safeguard agreement; (2) IAEA inspectors are not present in the installation; (3) enrichment and reprocessing facilities are not under the IAEA system; (4) certain types of facilities such as fuel fabrication, reprocessing and enrichment installations which uses materials in the form of powders, liquids or gases are difficult to safeguard; (5) it conducts only fewer inspections at safeguard installation; (6) IAEA inspector cannot make unannounced visits to the installation of the country which uses the materials under safeguard agreement; and (7) the country which uses the material under safeguard agreement can also reject particular IAEA inspectors.26

Regional Agencies: the Agency for the Prohibition of Nuclear Weapons in Latin America (OPANAL) and the South Pacific Bureau for Economic Cooperation. They work towards the objective of preventing the member countries of the zone from violating the treaties.27 For, both agencies agree to a 'full-scope' safeguards (i.e. IAEA


27 See the Text of the Treaties in Appendices D and E.
accounting and inspection measures on all of a nation's nuclear activities. They also face problems like the IAEA. OPANAL, for example, has not solved any problem, although there are reports by zone countries against the nuclear activities of other countries. Especially the British involvement in the Falkland war can be noted.\textsuperscript{28} This issue is discussed already in the third chapter.

In the case of South Pacific nuclear free zone, the South Pacific Bureau for Economic Cooperation is yet to establish its credibility. Apart from the IAEA and the regional agencies, there is a group known as nuclear suppliers group (NSG) which is also part of the verification system established by the present proliferation regime. The US, Soviet Union, Australia, Canada and West Germany, France, Japan, the UK, held a meeting in London in 1975. The London meeting focussed on two important issues. The first was, if and under what conditions technology and equipment for enrichment and reprocessing (the most sensitive parts of the nuclear fuel cycle from a weapon proliferation perspective), shall be transferred to non-nuclear states. The second issue was whether transfers should be made to states which do not agree for IAEA

safeguards. France, and West Germany opposed this move, as they had already contracts with some countries (Pakistan and South Korea in the case of France, and Brazil in the case of West Germany). However, the London meeting adopted a "Trigger List" which enlisted the material which can be transferred. These materials, according to the NSG agreement, should be transferred based on understandings of the recipient countries that they would not use the material for weapon production. These guidelines are adopted by supplier countries. However, the effort to control the sensitive materials is not very effective. For the purpose of the study, it is important to know the world nuclear facilities. The following table shows this.

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<tr>
<th>Country</th>
<th>NPT signer</th>
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<th>Reprocessing Plant</th>
<th>Breeder Reactor</th>
<th>Unsafer-guards nuclear facility</th>
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S - denotes 'Yes' and X - denotes 'No'.
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Name of the unsafeguarded nuclear reactors are: Egypt: Inshas; India: Apsara, Cirus, Purnima, Trombay fuel fabrication plant, Hyderabad fuel fabrication plant, Trombay reprocessing plant, Tarapur reprocessing plant; Israel: Dimona; Pakistan: Chasma fuel fabrication plant; South Africa: Valindaba enrichment plant; Spain: Vandelllos power reactor.

Concerns of the States Within the Established Zones:

According to the Treaties of Tlatelolco and Raratonga, there should be total absence of nuclear weapons in the zone. For, the state within the zone to the treaty share more responsibility than the states outside the zone. Therefore, they undertake the obligations that they will
not develop, test, produce, possess, or acquire nuclear weapons in the territory under their jurisdiction and that they will not permit anybody to store, install, or deploy such weapons in their territories. In addition, they should agree not to give, seek, or receive any assistance in the development or production of nuclear weapons. Also, they agree to renounce all military uses of nuclear energy. Although Argentina and Brazil have accepted the Tlatelolco Treaty and the IAEA safeguards, they have been increasingly involving in accumulating plutonium. They are having uranium too (see Chapter III). It should be understood that the Alamogordo and Nagasaki bombs were plutonium bombs while the one at Hiroshima was a uranium 235 (U-235) bomb. It is generally considered that 5 to 7 kilograms of Pu are needed for a small bomb of the Nagasaki size and 10 to 15 kilograms of U-235 for a small bomb of the Hiroshima size. The yield of each of these two bombs was in the 15- to 20-kiloton range, i.e. the equivalent of 15,000 to 20,000 tons of high explosive. If the countries located in the zone have acquired fissionable material and nuclear explosive,

30 See the Preamble of the Treaty.

the NWFZ is impracticable. In the case of South Pacific nuclear free zone, Australia can be noted. Australia has nuclear weapon related infrastructures deployed by the US (see Chapter IV).

Thus, the existence of the NWFZ depends upon each and every member of the zone. If any one of the states is not cooperating the objective of the Treaty for a total absence of nuclear weapons, the NWFZ cannot be achieved. Moreover, it should be understood that the states either outside or inside zone have nuclear weapons, there will be an impact on any NWFZ in the world because of the incalculable destructive power of nuclear weapons. 32

For instance, the Preamble of the Tlatelolco Treaty says:

"In the name of their peoples and faithfully interpreting their desires and aspirations, the Governments of the States which sign the Treaty for the Prohibition of Nuclear Weapon in Latin America ... convinced that nuclear weapons, whose terrible effects are suffered, indiscriminately and inexorably, by military forces and civilian population alike, constitute, through the persistence of the radioactivity they release, an attack on the integrity of the human species and ultimately may even render the whole

Although all Latin American countries and South Pacific countries are convinced about the danger of nuclear weapons in general, they have failed to have any provision in the Tlatelolco treaty or Rarotonga for reducing outside nuclear weapons. Both the main articles and the protocols of the Treaties say nothing about the existence of nuclear weapons. (See the Map Y).

Existing Nuclear Arms, Infrastructures
and NWFZ:

Nuclear arms and infrastructures are with nuclear weapon countries: US, Soviet Union, UK, France, and China. At the time of signing the NPT in 1970 (three years after the Tlatelolco treaty which was signed in 1967) the US had 1054 intercontinental ballistic missiles (ICBMs), 650 submarine-launched ballistic missiles (SLBMs), and 650 bombers -- 2360 strategic delivery vehicles in all. The Soviet Union had 850 intercontinental ballistic missiles (ICBMs) and 195 bombers -- 1045 strategic vehicles in all.

Both the NPT and NWFZ treaty could not do anything against these forces, although the NPT aimed for the complete absence of nuclear weapons and the NWFZ treaty called upon nuclear weapon states to pursue negotiations in

33 See the Preamble of the Treaty.

good faith on effective measures relating to cessation of the nuclear arms race.\textsuperscript{35} As a result, by the end of 1984, the US had 9,000 strategic nuclear warheads, 1,045 ICBMs, 568 SLBMs and 328 strategic bombers. New US strategic plan includes two new land-based ballistic missiles (MX and Midgetman), a new sea-launched ballistic missile (the Trident II or D-5), 3 version of low-flying cruise missiles (sea-, land-, and air-launched), 2 new bombers (B-1 and Stealth), a whole new generation of new nuclear warheads, and "star wars" anti-missile system in space. Soviet nuclear forces includes 7,000 strategic nuclear warheads, 1,400 ICBMs, 980 SLBMs, and 350 strategic bombers. And also, Soviet plans include at least two new ICBMs, (SS-X-24 - and 25), and a new SLBM (SS-NX-23), a new strategic bomber (Blackjack), cruise missiles, and hunter-killer satellites.\textsuperscript{36} Both the US and the Soviet nuclear warheads are ever increasing since 1984. The United Kingdom, France and China also have their own forces. The United Kingdom has an arsenal of between 200 to 5,00 warheads, China above 3,00 and France between 100 and 200. Their warheads are also increasing


Moreover, the Rapid Deployment Forces (RDF) of US
- navy; aircraft carrier battle groups (3), and amphibious
ready group (1) which is typically consists of three to
five amphibious ships including fighter wings (10) each
consists of approximately seventy-two aircraft; ground
forces: marine amphibious forces (2) each consists of a
ground combat division, a tactical fighter wing and
sustaining support and army combat divisions (5) each
division consists of 16,000 to 17,000 soldiers -- would
endanger the NWFZ. RDF, in a situation that will be
suggested by US, can be used against any part of the
world including NWFZ. RDF is composed of integrated
and "dual-capable" units equipped with tactical nuclear
as well as non-nuclear weapons. For example, B-52, the
nuclear capable US aircraft deployed in Diego Garcia
and the two aircraft carrier groups stationed in the
Arabian sea south of Pakistan's Makran coast would make
NWFZ concept meaningless for South Asia. 

Furthermore, nuclear infrastructures -- such as
scientific research, information gathering, and early

37 Jasjit Singh, Threat of Nuclear Weapons, in K.
Subramanyan, (ed.), India and the Nuclear Challenge
38 Ibid., p. 78.
warning surveillance -- are installed in many NWFZ countries. The NWFZ treaties (Tlatelolco and Rarotonga) ignored these all forces. William M. Arkin explains:

the main flaw in existing nuclear-free policies or nuclear free zone proposals is that they set up a system whereby non-nuclear means nothing, but the absence of nuclear warheads, while the infrastructure is ignored. In the 1950s and 1960s when nuclear weapons were large and difficult to transport or assemble, the mere restriction of warheads might have made sense as an arms control initiative. But today warheads are small and light weight and require minimal upkeep. Virtually every ship and airplane available to the nuclear powers can carry them anywhere on earth, as long as the intelligence, targeting, basing, training and communication infrastructure is in place to support them.

The nuclear infrastructure can be categorised into eight sectors - the arsenals are the ships, aircraft, guns, missiles and warheads, and the bases used in training, maintenance and supply of nuclear forces; the facilities for the production of nuclear warheads and related fissionable materials; the research, development and testing complex; the surveillance systems which gather information on and monitor the adversary's nuclear weapon systems; the early warning system of radars, satellites and information processing stations; the

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communications system which links all these; the command structure which plans and controls nuclear war; civil defence. These facilities are with many countries. For example, West Germany, Canada, Italy, UK, Japan, Turkey, South Korea, Greece and Philippines are leading countries in this respect. West Germany alone has 241 nuclear facilities. Also nuclear infrastructures are deployed in some NWFZ countries; Antigua (located in the Latin American NWFZ), Australia (located in the South Pacific NWFZ), Argentina (located in the Latin American NWFZ), Barbados (located in the Latin American NWFZ), Bahamas (located in the Latin American NWFZ), Panama (located in the Latin American NWFZ), Puerto Rico (located in the Latin American NWFZ) and Virgin Islands (located in the Latin American NWFZ). These are all deployed by US. The Soviet Union has its infrastructure in Cuba (see the Appendix F).

Third World and NWFZ:

The treaties of Tlatelolco, Rarotonga, Antarctic, Outer Space, Sea-bed are signed by third world countries. Also, most of the NWFZ proposals are proposed, for establishing NWFZ, in third world countries. There are eight proposals. Of all, five proposals are for establishing

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40 Ibid.
41 Ibid.
NWFZ in third world countries: Africa, Mediterranean, Indian Ocean, South Asia, Middle East (see Chapter I). More than forty third world countries are located in the proposed NWFZ. The established NWFZ: Latin America and South Pacific have more than thirty. There is no nuclear free zone or NWFZ established among nuclear weapon countries: US, Soviet Union, UK, France, and China. Although, China is a third world country, it has nuclear weapons and it does not belong either to established or to proposed nuclear free zone region. However, the attitude of third world countries is an important factor for strengthening both the NWFZ and the nuclear non-proliferation regime. Argentina, Brazil and Mexico are major third world countries in the Latin America NWFZ. They are involved in nuclear activities for peaceful purposes (see Chapter III). The treaty is not in force for Argentina and Brazil. Both the countries are not satisfied with the NWFZ concept. 42 Since the treaty leaves these big countries in the region which are having certain sensitive nuclear materials, the Latin America NWFZ is not practically established. Also, they are not satisfied with the nuclear weapon countries and their attitude towards Latin America NWFZ. Especially, Argentina had reported to the OPANAL about the British

42 Joseph Gallacher, n. 28, pp. 80-81.
nuclear involvement in the Falkland war. But, this issue was not solved properly by the OPANAL. Therefore, Argentina is very much opposed to the NWFZ. They are not signatories of the NPT. According to them the NPT is not an instrument which treats all the countries, both nuclear and non-nuclear equal. 43

In South Pacific nuclear free zone, there are island states which are not agreeing with the American nuclear installation in Australia (see Chapter IV). Thus, countries such as Vanuatu, Tuvalu, Kiribati, and Western Samoa are not fully agreeing to the South Pacific nuclear free zone. Most of the third world nations in South Pacific have signed only for the purpose of avoiding the influence of the big powers in their region. They are more bothered about decolonisation than denuclearisation. Although, the peace movement in this region is united on the issue of nuclear tests and nuclear dumping they are working towards the objective of freeing all Pacific island nations from the US, France, and the UK. 44 For example, in the proposed zones: Africa, South Asia, there are countries like South Africa, India and Pakistan.

43 Ibid.

Their attitude towards NWFZ are as follows. South Africa is not agreeing to the proposal of NWFZ for Africa as well as NPT. It has demonstrated its capability to produce nuclear weapons (see Chapter I). India and Pakistan are not signatories of the NPT. Pakistan is a proponent of NWFZ for South Asia, but it has involved in sensitive nuclear activities. India does not agree to the concept of NWFZ. It has opposed Pakistani proposal in the UN. India's view point is that NWFZ is not practical one because of the increasing nuclear arms produced by nuclear weapon countries which can reach any part of the world today. It has proposed recently in the UN for nuclear free universe by 2010.\textsuperscript{45} According to this, a universal nuclear free move should be initiated by all members of the UN. Therefore, it does not believe in the regional approach for nuclear arms control, especially regional NWFZ.

\textbf{Sea and Outer Space Connection:}

Both the United States and Soviet Union have been operating their nuclear forces at the Baltic, the Barents, Arctic, Black Seas and etc. These forces are part and parcel of deterrence -- Mutual Assured Destruction (MAD), the ability of each to destroy the aggressor even after

\textsuperscript{45} \textit{The Hindustan Times} (New Delhi), 28 July 1987.
having absorbed a first strike which is focussed towards Europe in particular and which is operational for general war in the world by connecting the Atlantic, Pacific and Indian Ocean through land and air routes. The nuclearization of the Sea was started in the 1960s, as the United States deployed US carrier-borne fighter bombers, and Polaris submarines. In the same period, the Soviet Union deployed anti-ship, air, surface and sub-surface bombers. Followed by these forces, the deployment of Submarine launched Ballistic Missiles (SLBM) of both the Soviet Union and the United States marked the deterrent controversy at stake, by increasingly improving the range and accuracy of their SLBMs which can reach NWFZs. The US Polaris were close to Soviet waters, by moving through NATO controlled waters, supported by facilities in Greenland, Iceland, Britain and Norway. Therefore, the Soviet Union countered by deploying its forces near the US homeland — which was contributed to the Cuban missile crisis in the 1960s.

When the Soviet move in the sea near the US homeland was created eye and cry in the West, especially in the US, the Soviet Union concentrated in the Arctic. Especially


47 Ibid.
the Soviet effort impressed equally in the fields of chemical oceanography, water salinity, temperature and oxygen measurements, water biological and aerial aeromagnetic data gathering, gravity charts and ice dynamics investigations. Improving its sea power both in research for civil and military purposes, the Soviet Union had deployed the first Delta-class submarines, with intercontinental range missiles that could be fired from Soviet territorial seas in 1972. The special character of the Delta class is that it can facilitate surfaced and firing prospects through certain ice thickness and reach Latin American NWPZ. As a counter measure, the United States deployed forty US warheads assigned to every Soviet city. Thus, the increase of American warheads in the Barents and adjacent Arctic waters, attracted more Soviet SIBM fleet in the late 1970s. The United States deployed in the same period the supportive underwater devices in Atlantic, North Sea and Norwegian waters.48

As a result, in the beginning of 1980s, the United States took lead in stealth bomber designs to thwart Soviet radar, stealth cruise missile design, SMART targeting technology in general, and counterforce intercontinental ballistic missile guidance prospects, known as MX. These forces are designed to serve the nuclear forces
deployed in the land or sea. Although these forces are branded as counter forces for Soviet, SS-20 missiles, the US Pershing II and cruise missiles are peculiar forces having the procurement of additional nuclear super carriers as nuclei for new exceptionally potent naval strike forces connecting the land, air and sea. Especially, cruise missile, the low flying and escapable from the Soviet Union radar, can reach the target at any cost by overflying on land or on the surface of the sea water. Also, a wide range of communication system with the specific mission for commanding, controlling and communicating all related installations in sea, outer space and land are dispersed by the US at sea. These forces confirmed the US superiority in the sea wars.

Thus,

49 Tom Stefanick, n. 46, p. 156.

50 Ibid. "Command, control and communications is the term used to describe a system of input, processing, decision-making and execution for military forces and operations. Being a 'system', it is largely composed of electronic aids -- sensors, computers and communications links -- but the central feature remains human decision-making. C³ supports the routine administrative decision-making to budget and allocate resources in peacetime, to monitor the world-wide political and military situation, and for contingency planning, training and exercises ... There are three distinct components of the C³ system: (a) command authorities, nuclear control systems and common centres to analyse data, make decisions, carry out directions and control forces; (b) sensors, including intelligence systems, providing inputs of warning and attack characterization; and (c) communications links to distribute warning data, and ensure the proper execution of commands". See, SIPRI Yearbook 1984, World Armaments and Disarmament (London, 1984), pp. 455-66.
the US forces in the Barent and Arctic seas serve the reinforcements and supplies in different stages of the different war scenarios, aiming to win a limited nuclear war either in land or in sea. Today, there are more than 15000 nuclear warheads in the naval forces of the nuclear weapon countries. They can reach both the Latin America NWFZ and the South Pacific nuclear free zone. In the UN Special Session on Disarmament held in July, 1987, the US has denied to include the sea-based nuclear arms in the arms control Agenda.

Nuclear controversy is expanded to outer space, as the US has declared star wars programme on 23 March 1983. ABM and Outer Space Treaty are violated or interpreted in a different way today in order to implement the star wars programme by 1994. If the American scientists, (more than fifty per cent of the scientists in US are in the opinion that the star wars cannot be separated from nuclear war) succeed in deploying star war weapon system based on nuclear or non-nuclear energy, that will endanger the whole world. Non-nuclear method of implementing the star wars programme, as the US government claims to be so, would create a nuclear dimension because the nuclear


52 UN, Disarmament: Problems Related to Outer Space (New York: UN, 1987), pp. 4-14.
because the nuclear systems which are already based on both land and sea are involved in any type of war, either planned or accidental. This scenario principally would affect the NLF in the future. However, it is important to note the recent development in regard to the non-nuclear deterrence of the US. The notion of non-nuclear deterrence was declared by the US on 23 March 1983, as President Ronald Reagan stated:

I have reached a decision which offers a new hope for our children in the 21st century ... isn't it worth every investment necessary to free the world from the threat of nuclear war? We know it is ... America does possess now the technologies to attain very significant improvements in the effectiveness of our ... non-nuclear forces ... with these considerations firmly in mind, I call upon the scientific community in our country, those who gave us nuclear weapons, to turn their great talents now to the cause of mankind and world peace, to give us the means of rendering these nuclear weapons impotent and obsolete .... This could pave the way for arms control measures to eliminate the weapons themselves .... Our only purpose -- one all people share -- is to search for ways to reduce the danger of nuclear war.

In this connection, the Soviet Union has declared its interest in January 1986, as Mikhail Gorbachev noted as follows:

53 Ibid.
The Soviet Union proposes that a step-by-step consistent process of ridding the earth of nuclear weapons be implemented and completed within the next 15 years, before the end of this century .... Our proposal on this subject can be summarised as follows: Stage one. Within the next 5 to 8 years the USSR and the USA will reduce by one half the nuclear weapons that can reach each other's territory. As for the remaining delivery vehicles of this kind, each side will retain no more than 6,000 warheads .... The first stage will include the adoption and implementation of a decision on the complete elimination of medium-range missiles of the USSR and the USA in the European zone -- both ballistic and cruise missile -- as a first step towards ridding the European continent of nuclear weapons.

In regard to the second stage, he stated that it will include all other nuclear powers to join the process of nuclear disarmament and stage three will eliminate all remaining nuclear weapons. Thus, by the end of 1999, according to Soviet proposal, there will be no nuclear weapons on earth. Adding to that Mr. Gorbachev stated; "A universal accord will be drawn up that such weapons should never again come into being .... Thus, we propose that we should enter the third millenium without nuclear weapons ...."56 Thus with the notion of non-nuclear deterrence and the nuclear free world by the beginning of 21st century, the INF treaty was signed by both the US and the Soviet Union on 8 December 1987.

56 Ibid.
It should be mentioned that the INF negotiation started between the US and the Soviet Union in December 1981. However, under the treaty, both sides have agreed to destroy all their land-based medium-range nuclear missiles, ranging from 500 to 5000 km. The agreement came after two summits in Geneva (1985) and Reykjavik in 1986.

According to the INF treaty, the US is to scrap Pershing missiles stationed in West Germany, Tomahawk cruise missiles in Britain, West Germany, Italy and Belgium. And the Soviet Union has to eliminate silo-based, SS-4 rockets, SS-20, SS-12 and SS-23 missiles. SS-20 carries three 150 KT warheads. The American missiles carry one warhead each. Thus, the US will destroy 429 Pershing-2 and GLCMs (Ground Launched Cruise Missiles) deployed in Western Europe under a NATO decision. In addition, 260 medium range missile due to be deployed will not be installed. Also, the US will destroy 170 old Pershing I A shorter-range missiles in US godowns. The Soviet Union will destroy 1752 medium and shorter-range missiles. These include 470 SS-20 missiles which have high lethal power. Also, the Soviet Union will destroy 356 medium-range missiles stockpiled by them. 57 However, the non-nuclear deterrence of both the US and

the Soviet Union would undermine the already existing nuclear forces all over the world and their connection in the destabilization of NWFZ in any part of the world.