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**NUCLEAR WEAPON FREE ZONES:
A COMPARATIVE PERSPECTIVE**



APRIL 1997

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Preface

Canada supports the establishment of nuclear weapon free zones (NWFZs) on the basis of arrangements freely arrived at among the States of the region concerned, particularly in regions afflicted with conflicts, which enhance regional and global peace and security and contribute to the ultimate objective of achieving a world free of nuclear weapons. We also encourage adherence by the nuclear weapon States to NWFZ arrangements.

The indefinite extension of, and near-universal adherence to, the Non-Proliferation Treaty (NPT) reinforce NWFZs as complementary non-proliferation mechanisms. Canada welcomes and encourages progress to develop and implement NWFZ agreements consistent with the Charter of the United Nations, international law and internationally agreed criteria. At the first Preparatory Committee meeting of the NPT Review process in April 1997, Canada reiterated its view of the importance of NWFZs.

Canada supports the countries of Africa, Latin America and the Caribbean, and the South Pacific in concluding various treaties to establish NWFZs, as well as welcomes the decision of the nuclear-weapon States which signed the relevant protocols. We also welcome the consensus in the United Nations General Assembly on an annual resolution urging the "Establishment of a nuclear weapon free zone in the region of the Middle East", as well as the progress made in Southeast Asia as represented in the Bangkok Treaty. We believe these agreements make a positive contribution to the international nuclear non-proliferation regime. We take particular pleasure, in this thirtieth anniversary year of the Treaty of Tlatelolco, in recognizing the foresight of the architects of that Treaty.

The following report has been prepared as background for the discussions on the subject of NWFZs at the 1997 session of United Nations Disarmament Commission. It is being made available to assist officials and researchers in their work on this subject, as part of the Department of Foreign Affairs and International Trade's policy to share the results of independent research undertaken by the Verification Research Program.

The views presented in this report do not necessarily reflect those of the Government of Canada or of the Department of Foreign Affairs and International Trade.

Department of Foreign Affairs and International Trade
Ottawa
April 1997

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Executive Summary

1. This study provides a comparative assessment of existing nuclear weapons free zones (NWFZs) in Southeast Asia, Africa, the South Pacific, and Latin America and the Caribbean. It also presents information on proposed NWFZs in South Asia, the Middle East, the Korean Peninsula, and Central and Eastern Europe.
2. Six factors have contributed to an intensification in the pursuit of regional NWFZs:
 - (1) the end of the Cold War;
 - (2) the settlement of long-standing regional conflicts;
 - (3) positive developments in global nuclear non-proliferation efforts, particularly the indefinite extension of the Non-Proliferation Treaty (NPT);
 - (4) the rise of global environmental consciousness;
 - (5) the search by regional organizations for a new role in peace and security in the post-Cold War era; and
 - (6) the "demonstration effect" of NWFZs created during the Cold War period.
3. In terms of the basic obligations they impose on their members, the NWFZs are similar in many respects to each other. These similarities include a ban on manufacturing, possession, development, testing (with the exception of the Latin American zone, which allows peaceful nuclear explosions), and export of nuclear materials (except under a comprehensive International Atomic Energy Agency (IAEA) safeguards system). It is noteworthy in that the newer NWFZs appear to have made a conscious attempt not only to emulate, but also to move in some new directions. Thus, the African zone contains a number of innovations, such as a ban on research on nuclear explosives, and provisions against attack on nuclear installations. The Southeast Asia Treaty pays specific attention to nuclear accidents. The geographic coverage of the Southeast Asian zone is especially noteworthy, since it is unique in covering continental shelves and exclusive economic zones.
4. All NWFZs rely on a mix of IAEA safeguards and regional control mechanisms. While using the IAEA system allows countries to take advantage of the IAEA's considerable experience in this area, as well as to save costs, the IAEA system does not cover all verification functions required by NWFZs. The IAEA safeguards system is geared to ensuring that non-nuclear weapon states do not divert nuclear material to build nuclear explosives. It does not monitor other possible violations of a NWFZ, such as clandestine import of nuclear weapons by a party, or the use of territory within the zone by an extra-regional country for the manufacturing or testing of nuclear weapons. Such violations may be monitored by regional mechanisms. Parties to NWFZ agreements are required to negotiate and conclude an agreement with the IAEA on all sources of fissionable material within their territories, allowing the IAEA to carry out routine, *ad hoc* and special inspections of safeguarded nuclear facilities and materials. It is noteworthy, however, that despite the additional verification tasks created by NWFZs, the IAEA does not seem to have yet

developed any measures dedicated solely to its verification role in the NWFZs. Moreover, none of the NWFZs have seen their special inspections provisions tested so far.

5. Proposals for NWFZs in South Asia, the Middle East, the Korean Peninsula and Central and Eastern Europe have encountered significant difficulties which are not likely to be overcome in the foreseeable future. On-going regional rivalries and external ties in some cases add to the complexities involved.

6. NWFZs are often said to contribute to global non-proliferation efforts by:

- (1) providing concrete evidence that the participating states are fulfilling their obligations under Article VI of the NPT as well as their commitment to denuclearization made at the time of the indefinite extension of the NPT;
- (2) complementing the NPT by including in their fold countries which are non-parties to the NPT;
- (3) inhibiting states from pursuing the acquisition of nuclear weapons in response to future security needs;
- (4) providing valuable supplements to the NPT's verification structure and the IAEA safeguards system by demanding more extensive reporting by states and providing more elaborate and intrusive inspection measures than the NPT;
- (5) providing a useful and convenient diplomatic framework for threshold nuclear states to give up their nuclear option;
- (6) satisfying, by providing negative security assurances, a long-standing demand of non-nuclear weapon states regarding the threat to their national security posed by the existence of nuclear weapons; and
- (7) enabling states to concentrate on other non-proliferation issues including the creation of more comprehensive regional arms control and non-proliferation regimes such as Weapons of Mass Destruction (WMD) free zones.

Introduction

In recent years, there has been an intensification in the pursuit of nuclear weapon free zones (NWFZs) around the world. Two new Treaties creating such zones have been concluded: the Southeast Asia Nuclear Weapon Free Zone Treaty, signed in Bangkok in December 1995, and the African Nuclear Weapon Free Zone Treaty, concluded in April 1996. In addition, existing NWFZs have been strengthened. France, the USA, and Britain signed the protocols to the South Pacific Nuclear Free Zone¹ in 1996, thereby giving the zone the support of all the five declared nuclear powers. Furthermore, the decision of Cuba to sign the Treaty of Tlatelolco in 1995, following moves by Argentina and Brazil to bring the Treaty into force for their own territories, addresses one of last remaining obstacles to the full realization of a nuclear weapon free zone in Latin America and the Caribbean.²

In addition to the four mentioned above, NWFZs have been proposed for several other regions of the world. Despite facing significant political obstacles, these proposals have received attention both inside and outside the regions concerned.

What explains the interest in NWFZs? What are the conditions that support the establishment of NWFZs, and those that inhibit it? What are the implications of this trend for global and regional non-proliferation efforts? This paper examines these questions. It begins with a brief review of the history of NWFZs, and examines the factors which have contributed to the increasing interest in them in recent years. The next section provides a comparative perspective on the four existing zones, with particular reference to their basic obligations, geographic coverage, verification provisions, and protocols. The third section looks at the prospects for realizing proposals for NWFZs in South Asia, the Middle East and the Korean Peninsula. This is followed by an assessment of the costs and benefits of NWFZs, including an assessment of their contribution to global and regional non-proliferation and arms control efforts.

Definition and Requirements

The consensus Final Document of the first Special Session of the UN General Assembly on Disarmament of 1978 states:

"The establishment of nuclear weapon free zones on the basis of agreements or arrangements freely arrived at among the States of the zone concerned and the full compliance with those agreements or arrangements, thus ensuring that the zones are genuinely free from nuclear weapons, and respect for such zones by nuclear-weapon States constitute an important disarmament measure."³

A UN General Assembly resolution of 1975, offered the following definition of a NWFZ which, while not adopted by consensus, is nevertheless of interest:

"A nuclear-weapon-free zone shall, as a general rule, be deemed to be any zone, recognized as such by the General Assembly of the United Nations, which any group of states, in the free exercise of their sovereignty has established by virtue of a treaty or convention whereby:

- (a) the statute of total absence of nuclear weapons to which the zone shall be subject, including the procedure for the delimitation of the zone, is defined;
- (b) an international system of verification and control is established to guarantee compliance with the obligations deriving from that statute."⁴

A UN study on the NWFZs of that same year suggested a number of guiding principles for the establishment of NWFZs:

"NWFZs may be established not only in entire continents or large geographical regions, but also by smaller groups of states and even individual countries;

The zone must be effectively free of all nuclear weapons;

The initiative for creating a NWFZ should come from states within the region concerned and participation must be voluntary;

All militarily significant states should be members of the zone in order to enhance its effectiveness;

The zone must contain an effective system of verification to ensure full compliance with the agreed obligations;

Arrangements for a zone should promote the economic, scientific, and technological development of the members through international cooperation on peaceful uses of nuclear energy;

The treaty establishing the zone should be of unlimited duration."⁵

At minimum, it would seem that a NWFZ is designed to promote three main objectives: to eliminate existing and future proliferation of nuclear weapons, reduce the threat of nuclear attack against states within the zone, and avoid the contamination of the local environment from nuclear-related material. Establishing a NWFZ requires a treaty outlining the basic obligations of member states as well as a verification mechanism.

As the foregoing suggests, the guiding principles for establishing a NWFZ are fairly demanding. In fact, few regions of the world have been able to meet them, despite the widespread declaratory support that the idea of NWFZ enjoys in discussions on international peace and security. A brief overview of the historical development of NWFZs idea attests to this.

Historical Background

The idea of NWFZs first emerged in the late 1950s and early 1960s as a byproduct of the USA-Soviet rivalry. The earliest proposals came from the Soviet Union in response to the USA doctrine of massive retaliation, which envisaged an all-out nuclear strike against a

Soviet conventional attack on NATO. By calling for NWFZs along its border regions, Moscow hoped to exploit anti-nuclear sentiments in Europe and work toward the removal of the USA military bases near the Soviet border which could be used for a nuclear strike. To this end, NWFZs were proposed for Central Europe (1956), the Pacific (1957)⁶, the Balkans, the Nordic area, and the Middle East (all in 1959), and the Mediterranean (1963). In addition, Poland (an ally of the USSR at the time) called for a NWFZ for central Europe in 1957; this was the first detailed proposal for a NWFZ anywhere.

Non-Soviet bloc interest in NWFZs during the 1960s included the Swedish concept of a NWFZ in the Nordic area (mooted in 1961), proposals by Australia and New Zealand in the mid-1960s for a NWFZ in the South Pacific, the idea of a NWFZ in Africa (first raised in 1961), and a Brazilian effort to seek an extension of the proposed African NWFZ to Latin America in the aftermath of the 1962 Cuban Missile Crisis. These initiatives for NWFZs were inspired by a mix of motivating factors. While testing by a nuclear power (France) was a catalyst in the case of the South Pacific and Africa, testing by a regional country (India), in 1974 prompted Pakistan's call for a South Asia zone. Interest in NWFZs in each of Africa, Latin America, and Scandinavia was clearly inspired by the desire of the regional countries to keep nuclear weapons out of these regions and reduce the risk of becoming a nuclear target. Three factors, opposition to foreign military bases, French testing, and South Africa's nuclear programme, were behind the African NWFZ proposal, while the Cuban missile crisis contributed to demands for a NWFZ in Latin America.

While NWFZ proposals for the world's populated areas remained largely confined to the negotiating table during the 1960s, three Treaties containing nuclear proscriptions in regions without permanent population were successfully negotiated. The Antarctic Treaty, which was signed in 1959 and entered into force in 1961, was the first such agreement prohibiting all military activities, as well as nuclear testing explosions and the disposal of nuclear wastes in Antarctica. The Treaty allowed aerial inspections and complete access at will to all areas and installations in the frozen continent. The Outer Space Treaty, which entered into force in October 1967, prohibited the stationing of nuclear and other weapons of mass destruction in earth orbit, on the moon, or on other celestial objects, and banned military installations and testing of military weapons of any kind in these areas. Finally, the Seabed Treaty, which was signed in 1971 and entered into force in 1972, prohibited parties from placing nuclear weapons or other weapons of mass destruction on the seabed or ocean floor beyond a 12-mile coastal seabed zone, while urging negotiations among parties toward further measures to ensure complete disarmament of the seabed and the ocean floor. The advent of these zones served to advance the idea of geographically-specific approaches to arms control and disarmament, and provided a general model for the establishment of such zones in the world's populated areas. Moreover, their exclusion of all weapons of mass destruction (WMD) is of significance in the context of the interest shown by arms control advocates to move regional non-proliferation frameworks beyond the NWFZ concept toward WMD-free zones.

Until the end of the Cold War, only two NWFZs were established in populated areas: the first being the Treaty of Tlatelolco establishing a NWFZ in Latin America and the Caribbean, joined much later by the Treaty of Rarotonga establishing a NWFZ in South Pacific. In general, the task of establishing NWFZs in populated areas was complicated by several factors. One of the major issues was defining the scope of restrictions under a NWFZ, such as the question of whether a NWFZ should exclude peaceful nuclear explosions, portions of the high seas, straits used for international navigation, international air space, rights of innocent passage through territorial waters, territories of extra-regional powers, military bases of extra-regional states, and transit of nuclear weapons of external powers through the zone. Other issues and questions that proved contentious included:

- (1) whether participation in a NWFZ was incompatible with membership in a security alliance involving a nuclear-weapon state;
- (2) the extent to which regional NWFZs complemented, or competed with the NPT;
- (3) whether a country might be allowed to include only part of its territory in a NWFZ;
- (4) whether a nuclear-weapon state had a right to reconsider its negative security assurances -- i.e., its commitment not to use or threaten to use nuclear weapons against a zonal state -- in the event of the latter participating in an act of aggression;
- (5) whether recognition by the UN General Assembly was a necessary or a sufficient condition for the establishment of a NWFZ;
- (6) whether verification arrangements should cover all nuclear activities, including those for peaceful purposes; and
- (7) whether standards of verification and compliance should be equal to or more stringent than those of the NPT.

Over the years, some of these problems have been overcome, but others continue to be relevant in negotiations on NWFZs.⁷

In general, one can discern some important lessons from the evolution of NWFZs. First, negotiating a NWFZ is often an long-term and intensely political process, the success of which depends on the overall global and regional political climate. Superpower rivalry may have complicated the prospects for serious negotiations for NWFZs throughout the Cold War period. Second, ongoing regional conflicts, whether linked to the Cold War or not, were a major impediment to NWFZs. Tensions in Southern Africa, the Middle East, South Asia, Cambodia, and the Korean Peninsula negatively affected the prospects for NWFZs in these respective areas. Third, in most cases, success in negotiating a NWFZ depended on the strength and involvement of a relevant regional organization. For example, the roles of the Organization of African Unity, the South Pacific Forum, and the Association of Southeast Asian Nations have been particularly important in promoting NWFZs in their regions. A less well-developed or inclusive regional structure has constrained attempts at NWFZs in other regions, such as in the Middle East, South Asia (where the South Asian Association for Regional Cooperation remains weak and has no direct security role), and the Korean Peninsula (which simply lacks any sub-regional security organization). Fourth, the attitudes

of countries who may have nuclear ambitions were a critical factor in negotiations for NWFZs.

Despite persisting barriers, at least six factors, at the global and regional levels, have improved the prospects for NWFZs. The first is the end of the Cold War, removing some of the political concerns behind objections to NWFZs. A second and closely related factor is the settlement of long-standing regional conflicts in the Third World. This improves the political climate for negotiating an NWFZ. For example, the end of the Cambodia conflict in Southeast Asia, and the settlement of the complex Southern African conflict involving the Apartheid regime in South Africa,⁸ each created a new climate for regional cooperation and paved the way for politically inclusive NWFZs that were not possible in the past.

A third contributing factor is the momentum caused by recent positive developments in nuclear non-proliferation efforts, including the indefinite extension of the NPT, nuclear agreements covering the former republics of the Soviet Union, the decision of Brazil and Argentina to give up their nuclear options, the adoption of the Comprehensive Nuclear Test Ban Treaty by the UN General Assembly, and further movement in the Strategic Arms Reduction Talks process. International opinion against nuclear testing and weapons has never been stronger. Non-proliferation has emerged as a global norm, thereby creating a favourable political climate for NWFZs.

A fourth factor is the rise of global environmental consciousness, creating greater awareness of, and opposition to, the damaging ecological consequences of nuclear weapons programmes. This has clearly been a factor behind the South Pacific and African NWFZs.

A fifth factor contributing to NWFZs is the desire and efforts by regional organizations, with the cooperation of the UN, to seek a new relevance in the post-Cold War era by strengthening their role in peace and security. Several regional organizations, such as the OAU, ASEAN, and the OAS, have taken steps to strengthen their role in such areas as confidence-building, peacekeeping, preventive diplomacy, dispute-settlement and peacebuilding. Establishing a NWFZ has emerged as a key theme in this effort.

Last but not least, the recent interest in NWFZs could be attributed to the "demonstration effect" effect of such zones negotiated during the Cold War period. Thus, the Latin America and South Pacific Treaties have served as an inspiration as well as a practical model for more recently-established zones in Southeast Asia and Africa. The latter, in turn, have heightened interest in and attention to proposed NWFZs in the Middle East, South Asia, and the Korean Peninsula. What is noteworthy, the newer NWFZs appear to have made a conscious attempt not only to emulate, but also to move in some new directions.

Key Provisions of the Existing NWFZs: A Comparative Analysis

Existing NWFZ Treaties contain four general features which can serve as the basis for a comparative analysis. These include: basic obligations; zone of application; mechanisms

for control, compliance, and verification; and protocols. A tabular synopsis of the provisions of these Treaties can be found in Appendix 1.

a. Basic Obligations:

Manufacturing, possession, development: In all cases, parties are required not to undertake, or allow other states to undertake within their territory, efforts to develop, manufacture, or otherwise acquire, possess or control, nuclear weapons. The African Treaty specifically forbids stockpiling, although this is only implied in the three other Treaties. This Treaty also provides for the dismantling, destruction, or conversion of nuclear explosive devices and their manufacturing facilities.

Testing: All four Treaties prohibit testing, although the Latin American Treaty allows testing for peaceful purposes. (See section below on "peaceful nuclear explosions").

Accidents: The Southeast Asian Treaty is the only one to require early notification of nuclear accidents.

Nuclear Security: The African Treaty is unique in specifying obligations regarding the physical protection of nuclear materials and facilities and prohibiting armed attack on nuclear installations.

Research: The African Treaty is the only one to specifically prohibit research on nuclear explosive devices.

Transit: The Southeast Asian, South Pacific and African Treaties clearly leave it to the discretion of the parties to decide whether to allow visits by foreign ships and aircraft to ports and airfields within their zones of application. The Latin American Treaty is silent on this issue and therefore, considered to be more ambiguous.

Export of nuclear materials: Unlike the Latin American Treaty, the South Pacific Treaty bans the export of nuclear materials unless the recipient provides strict assurances of their use for exclusively peaceful purposes. The Southeast Asian and African Treaties also ban supply of fissionable material or equipment for their production to any non-nuclear-weapon state unless subject to a comprehensive IAEA safeguard system. The Southeast Asian Treaty is somewhat more specific in covering exports to both nuclear-weapon states as well as to non-nuclear-weapon states.

Dumping: The dumping and disposing of nuclear and other radioactive material are specifically banned by the South Pacific, Southeast Asian and African treaties, but not by the Latin American Treaty. It should be noted that the anti-dumping provisions of the Southeast Asian Treaty cover both land and sea, while those of the South Pacific Treaty cover the sea only.

Peaceful nuclear explosions: These were included under the 1967 Latin American Treaty, presumably to allow for the possibility of some future peaceful application such as canal building. Consideration of this issue has evolved considerably and overtaken this provision. Such so-called "peaceful nuclear explosions" were banned by the South Pacific, Southeast Asian and African Treaties. The Latin American Treaty forbids "nuclear weapons" only, thereby allowing peaceful nuclear explosions, while the African Treaty bans all "nuclear explosive devices". While the Southeast Asian zone uses the term "nuclear weapon", its definition of the term is the same as in the case of the African Treaty and therefore covers all nuclear explosive devices.

b. Zone of Application:

In the case of the South Pacific and African Treaties, the zone of application is limited to the national territories of the parties, including their territorial sea and air space. After coming into force, the Latin American zone will extend beyond national territories to cover some areas of the Atlantic and Pacific Oceans as specified in the Treaty. The Southeast Asian zone is the only NWFZ to cover continental shelves and exclusive economic zones, a provision that has attracted much opposition from the nuclear powers.

The South Pacific Treaty covers a wide area, stretching from the western boundary of the Latin American zone to the east, to the border of the Antarctic demilitarized zone in the south, to a north-south extension of the Western Australian coast in the west, and to the equator in the north. But despite its claim to cover such a huge area, its provisions, such as the ban on the stationing of nuclear weapons, only apply to the territories of the South Pacific states, up to the 12-mile territorial sea limit.

c. Compliance, Control, and Verification:

A tabular synopsis of these provisions for the four NWFZ Treaties can be found in Appendix 2. These mechanisms are designed to monitor all nuclear activities of zonal states to ensure:

- (1) that peaceful nuclear activities are not diverted to the manufacture of nuclear weapons;
- (2) that no nuclear weapons are present within the zone;
- (3) that nuclear weapons present in the zone are removed in conjunction with the entry into force of the zone agreement; and
- (4) that other measures associated with the zone agreement are implemented.

All the four NWFZs rely on IAEA safeguard mechanisms to ensure compliance and verification, but supplement these with regional mechanisms and procedures. A party to these Treaties is required to negotiate and conclude an agreement with the IAEA on all sources of fissionable material within its territory, allowing the IAEA to carry out routine, *ad hoc* and special inspections of safeguarded nuclear facilities and materials. While relying on the IAEA

system allows countries to take advantage of the IAEA's considerable experience in this area, as well as to save costs, the IAEA system does not cover all verification functions required by NWFZs. The IAEA safeguards system is geared to ensuring that non-nuclear weapon states do not divert nuclear material to build nuclear explosives. It does not monitor other possible violations of a NWFZ, such as clandestine import of nuclear weapons by a party, or the use of territory within the zone by an extra-regional country for the manufacturing or testing of nuclear weapons.⁹ Thus, the scope of the verification regimes of NWFZs goes beyond the full application of IAEA safeguards.

Regional control mechanisms created by NWFZs, such as the Organization for the Prohibition of Nuclear Weapons in Latin America (OPANAL), the Consultative Committee of the South Pacific Nuclear Free Zone, the Commission for the Southeast Asia Nuclear Weapon-Free zone and its subsidiary organ, the Executive Committee, and the African Commission on Nuclear Energy, not only oversee and review the application of the IAEA safeguards system (including challenge inspections authorized by them, but carried out by IAEA inspectors) within their respective zones, but also provide for a number of additional control measures. Thus, in addition to the application of the IAEA system, the Latin American Treaty provides for reports and exchanges of information, and special reports requested by OPANAL. A provision for special inspections contained in the original draft of the Latin American Treaty has been removed as a result of amendments proposed by Brazil and Argentina. The South Pacific zone's verification regime includes, in addition to IAEA safeguards, reports and information exchange, consultations, and a complaints procedure.¹⁰ The latter provides for special inspections using IAEA inspectors requested by any party and authorized by a Consultative Committee, the main regional verification body established by the Treaty. The Southeast Asian zone also supplements the IAEA safeguards system with report and exchange of information, requests for clarification, fact-finding missions, and a dispute settlement procedure. The Commission for the Southeast Asia Nuclear Weapon-Free Zone is responsible for overseeing the implementation of the Treaty and ensuring compliance with its provisions, while the Executive Committee is responsible for ensuring the proper operation of verification measures, including requests for clarification and fact-finding missions. In the African zone, the control system supervised by the African Commission on Nuclear Energy includes the application of the IAEA safeguards system, as well as a regional system of report and exchange of information, consultations and conferences. The African Treaty also provides for a complaints and dispute settlement mechanism, including technical visits and special inspections using IAEA inspectors.

It should be noted that so far there have been no reported case of special inspections carried out by the IAEA at the request of any of the four regional control bodies. This may have do with the relative newness of the Southeast Asian and the African NWFZs, as well as the absence of any serious effort by countries located within all the four zones to acquire nuclear weapons. In general, the regional control mechanisms rely on the IAEA to carry out the technical aspects of verification, (thereby having no need to develop the technical expertise themselves), while retaining political control over the verification process. But this

may stretch the resources of the IAEA; it is noteworthy that the IAEA does not appear yet to have developed substantial dedicated resources to perform its verification role in the NWFZs.

d. Protocols:

Protocols to the NWFZ Treaties provide for the application of some of their provisions to non-regional states. These protocols fall into three main categories:

- (1) those involving the provision by non-regional nuclear-weapon-states of negative security assurances to regional parties, including a commitment not to use or threaten to use nuclear weapons against regional state parties;
- (2) those involving provisions by which non-regional states that may have jurisdiction over territories located within the zone of application, accept the basic obligations concerning nuclear weapons that are assumed by regional state parties; and
- (3) those prohibiting testing.

The Latin American Treaty contains the first two types of protocols (there is no protocol covering testing), while the South Pacific Treaty has all three, two of which are identical to those of the Latin American Treaty, while a third one specifically prohibits the testing of nuclear explosive devices "anywhere" within the zone. The three protocols to the African Treaty are similar to those of the South Pacific Treaty. The single protocol to the Southeast Asia Treaty seeks negative security assurances from the nuclear powers, but it is unique in requiring the latter to refrain from using and threatening to use nuclear arms not only against parties to the Treaty, *but also anywhere within the zone*, including continental shelves and exclusive economic zones of the Treaty parties.

Both the protocols to the Latin American Treaty have been ratified by the relevant non-regional states, although France, Britain, the USA and Russia issued interpretative statements when signing and ratifying Protocol II of the Treaty, with the French reserving their right to self-defence under Article 51 of the UN Charter, and the British, the American and the Russians reserving their respective rights to reconsider their obligations in the event of aggression against their allies in the region by a party to the Treaty with the support of a nuclear weapon state. The protocols to the South Pacific and African Treaties have received the consent of all the five declared nuclear powers. None has signed the protocol to the Southeast Asian Treaty, and negotiations are ongoing to address concerns about the protocol's suggested incompatibility with the Law of the Sea.

Both American and Russian policies toward NWFZs have evolved since the end of the Cold War. Current USA policy on NWFZs appears to be based on seven criteria, which are seen by some as necessary but not sufficient:

- (1) proposals for NWFZs should originate from states within the zone;
- (2) all relevant states in a zone should participate;
- (3) adequate mechanisms for verifying compliance must exist;

- (4) zones should not disturb existing security arrangements;
- (5) zones should prohibit the development or possession of any nuclear explosive device;
- (6) zones should not infringe on the exercise of rights recognized under international law, particularly the freedom of navigation, innocent passage and overflight; and
- (7) zones should not affect the rights of parties to grant transit privileges, port calls or overflights.¹¹

During the Cold War, the Soviet Union laid down two criteria for supporting a NWFZ:

- (1) the readiness of other nuclear powers to accept and honour the denuclearized status of the area; and
- (2) the completeness of obligations of the contracting powers and the extent to which they insure the zone's denuclearized status.¹²

In 1988, Soviet President Mikhail Gorbachev expressed strong support for NWFZs. Current Russian arms control policy includes "supporting the creation of nuclear-free zones and granting appropriate guarantees to the states which participate."¹³ The British, French and Chinese positions have tended to examine each NWFZ on a case-by-case basis, with positions evolving or changing in the light of the different circumstances.

Proposed NWFZs: Problems and Prospects

Four proposed NWFZs continue to receive attention: South Asia, the Middle East, the Korean Peninsula, and Central and East Europe.

South Asia:

Pakistan proposed a NWFZ in South Asia in the aftermath of India's nuclear explosion in 1974. India, citing that the proposal was made without prior consultations and agreement among the countries in the area, immediately rejected the proposal. Since then, India has continued to oppose a South Asia zone on the ground that nuclear issues in South Asia cannot be separated from those in the wider Asia-Pacific region, especially due to the existence of a nuclear power, China, in the proximity, as well as the presence of foreign military bases with nuclear weapons in the Indian Ocean area (such as Diego Garcia). India also argues that regional approaches to non-proliferation cannot be effective since nuclear proliferation is a global problem requiring global solutions.¹⁴ The Indian position suggests that success in negotiating a NWFZ depends critically on several factors: an agreement on what constitutes the region, a strong sense of regionalism, and regional consensus concerning the utility of nuclear weapons. South Asia, lacking these attributes, has found it difficult to achieve meaningful progress toward a NWFZ.

The experience of Brazil and Argentina suggests that nuclear CSBMs, such as an agreement by states not to attack each other's nuclear installations and the exchange of lists of their nuclear installations, may be a helpful first step toward a NWFZ. But although India and Pakistan have signed such agreements, this has not translated into progress toward a NWFZ. Against this backdrop, the prospect for such a zone being established in the region appears unlikely in the foreseeable future.

Middle East:

Iran made the first detailed proposal for a NWFZ in the Middle East. Egypt, while supporting the proposal, argued that any such zone must include Israel.¹⁵ Each year since 1974, the UN General Assembly has passed a resolution calling for a Middle East NWFZ, but progress toward its establishment has been thwarted by a number of obstacles, including a lack of diplomatic contacts between some of the most important parties (for example, Iraq and Israel, Iran and Iraq, Syria and Israel); concerns regarding Israel's nuclear capability; the near nuclear potential of other Middle East states; the development by several states of systems capable of delivering nuclear weapons; and the overall high state of tension among regional countries.¹⁶

Although Israel at first opposed the UN resolutions on a Middle East NWFZ, it allowed the passage of the resolution without a vote in 1980. It is now a consensus resolution. Israel maintains that establishing a NWFZ in the Middle East requires free and direct negotiations among the states of the region. Egypt has gone a step beyond the traditional NWFZ concept by calling for a zone free of all weapons of mass destruction. A panel appointed by the UN Secretary-General to recommend measures to facilitate the creation of the Middle East NWFZ found substantial agreement on three points: the creation of such a zone must be a step-by-step process and would require an initial period of confidence-building among the parties; the zone must cover more than nuclear weapons, including chemical and conventional weapons; and the establishment of such a zone requires an improved political climate including progress in the Middle East peace process.¹⁷

The Korean Peninsula:

North Korea was an early proponent of a NWFZ in Northeast Asia, although there were several reasons why it was not taken seriously at the time. But the situation has changed significantly in the 1990s.¹⁸ As reports of a North Korean nuclear program began to emerge, the idea of a denuclearized Korean Peninsula received more attention, resulting in the Joint Declaration on the Denuclearization of the Korean Peninsula signed by the two Koreas on 31 December 1991. Under the agreement (which has not come into force as yet), the two parties are required not to "test, produce, receive, possess, store or deploy nuclear weapons" and not to "possess facilities for nuclear reprocessing and uranium enrichment". (This is more specific than the basic obligations language of other NWFZs.) The agreement also provided for a two-tier verification regime: the IAEA safeguards system and a mutual inspection regime to carry out on-site inspection of facilities in both countries.

North Korea signed an agreement with the IAEA in January 1992 but a year later, in March 1993, it announced its decision to withdraw from the NPT. Direct talks between the USA and North Korea followed, leading to North Korea's suspension of its withdrawal from the NPT, and culminating in an agreement in August 1994 under which it was agreed to supply North Korea with a 2000 MW reactor and to provide it with assurances against the threat or use of nuclear weapons in return for North freezing its nuclear energy and reprocessing programs and remaining a party to the NPT and its safeguards regime.¹⁹ The full implementation of this agreement will be a further step toward nuclear arms control in the Korean Peninsula, but the eventual establishment of a NWFZ depends on effective verification and a complete denuclearization of the Korean Peninsula which the present agreement does not provide.

Central and Eastern Europe:

The idea of a NWFZ in Central and Eastern Europe has received increasing attention in recent years. In April 1995, the Foreign Minister of Belarus expressed strong support for the idea of a NWFZ in Central and Eastern Europe. Ukraine, which like Belarus had agreed to the removal of all Russian nuclear weapons from its territory, also endorsed the idea during the 1995 NPT Review Conference. The proposal for a NWFZ in Central and Eastern Europe is likely to remain a complex subject for further debate.

Lessons:

Proposals for, and responses to NWFZs in South Asia, the Middle East, and the Korean Peninsula face a number of common challenges. Each of the regions has an historical and deep-rooted rivalry, with significant involvement of external powers. Thus, securing agreement from external nuclear powers on negative security assurances (not to use or threaten to use nuclear weapons against countries within the proposed zone) becomes important. In the case of Central and Eastern Europe, there have been dramatic and positive improvements in security relations since the end of the Cold War, and the social and security frameworks on that continent are receiving a great deal of attention as they continue to evolve.

The Contribution of NWFZs

The spread of NWFZs has significant implications for conflict and conflict management in the post-Cold War era. During the Cold War, superpower rivalry and intervention acted as a check on the militarization and escalation of regional conflicts. By offering security to their clients, the USA and the Soviet Union were to some extent able to discourage nuclear proliferation in the Third World. With the end of the Cold War, regional conflicts have emerged as the chief threat to international order.

In what ways do NWFZs contribute to international peace and security?²⁰ To begin with, as Zachary Davis points out, NWFZs "help consolidate non-proliferation norms and

institutions.²¹ It is for this reason that Article VII of the Nuclear Non-Proliferation Treaty recognizes "the right of any group of States to conclude regional treaties in order to assure the total absence of nuclear weapons in their respective territories". The NPT Review and Extension Conference in May 1995 reaffirmed support for NWFZs by expressing the member states' "conviction that the establishment of internationally recognized nuclear weapons free zones, on the basis of arrangements freely arrived at among the States of the region concerned, enhances global and regional peace and security...." In a more specific sense, NWFZs are sometimes said to complement global non-proliferation regimes by including in their fold countries which are non-parties to the NPT.²² For example, before signing the NPT, Brazil accepted NPT-equivalent obligations under the Tlatelolco Treaty. In a related vein, NWFZs are said to "hold territory" and secure it against future nuclear encroachment. This makes them useful even if no regional participant has any current plans for acquiring nuclear weapons. NWFZs inhibit states from pursuing nuclear weapons options in response to future security needs.

NWFZs are also valuable supplements to the NPT's verification structure and the IAEA safeguards system. They demand more extensive reporting by the state parties of their nuclear activities than those required under the NPT. They also provide, at least notionally, for more elaborate and intrusive inspection measures.

In some cases, NWFZs have provided a useful and convenient diplomatic framework for threshold nuclear states to give up their nuclear option. In both Latin America and Southern Africa, existing or proposed NWFZs were helpful (although this was by no means the only factor) in persuading and enabling Argentina, Brazil, and South Africa to set aside their respective nuclear options. Since NWFZs are more likely to contain provisions that are suitable or "custom-made" for particular regions, they may be more likely to meet the security concerns of threshold powers who themselves are allowed to play a major role in developing or framing these provisions. For example, before signing the Treaty of Tlatelolco, Brazil played an important role in modifying its verification mechanisms to make them conform to its security needs.

In the absence of a universally applicable regime of no-first-use, the negative security assurances contained in NWFZ treaties meet a long-standing demand of non-nuclear-weapon states regarding the threat to their national security posed by the existence of nuclear weapons. Thanks to the NWFZs, most of the southern hemisphere, more than half of the earth's surface and more than half the countries of the world, now enjoy such security assurances. Thus, NWFZs go some way in easing political tensions between nuclear-haves and nuclear-have-nots.

From the perspective of zonal countries, NWFZs contribute to regional stability by reducing the danger of their becoming nuclear targets. Moreover, once in place, NWFZs may enable states to concentrate on other non-proliferation issues.²³ They may be a first step toward a comprehensive regional arms control and non-proliferation regime, including WMD-free zones. As noted earlier, negotiations on a NWFZ in the Middle East have already

encompassed proposals for a total elimination of WMDs in the region. In some cases, NWFZs may help remove political obstacles to closer regional security cooperation that may improve the prospects for regional stability. The Southeast Asia NWFZ, for example, provides many formal mechanisms for verification and compliance. Given ASEAN's past reluctance to adopt concrete and multilateral measures of security cooperation The Southeast Asia NWFZ Treaty is a milestone in the evolution of regional security cooperation in Southeast Asia.

Finally, NWFZs have assumed considerable political and symbolic value. Success in establishing such a zone becomes an important measure of regional autonomy, enabling regional countries to demonstrate a capacity for collective action to ensure their national and regional stability.²⁴ Participation in NWFZs provides concrete evidence that these states are fulfilling their obligations under Article VI of the NPT as well as their commitment to denuclearization made at the time of the indefinite extension of the NPT. In this sense, as Davis puts it, "joining NWFZs translates directly into enhanced credibility for global non-proliferation efforts".²⁵

But the contribution of NWFZs to international peace and security should not be overstated. As Johan J. Holst, a Norwegian analyst, commented in 1983:

"A NWFZ constitutes no panacea. It cannot substitute for a national security policy, nor can it remove the threat of nuclear war. It is primarily a confidence-building measure which needs to be tailored to the specific circumstances of the region in question and to the links which exist between that region and broader systems of international order. It is a possible instrument in support of broader purposes."²⁶

Endnotes

1. The official name of this zone is South Pacific Nuclear-Free Zone, although its provisions and characteristics are no different from the other NWFZs.
2. Dunbar Lockwood, "Nuclear Arms Control", in SIPRI Yearbook 1994 (Oxford: Oxford University Press, 1994), pp.670-671.
3. United Nations General Assembly, Tenth Special Session, Final Document, Declaration, paragraph 33.
4. UN General Assembly Resolution 3472B (XXX), 11 December 1975.
5. Comprehensive Study of the Question of Nuclear-Weapon-Free Zones in All Its Aspects, Special Report of the Conference on Disarmament (Advance Version), Thirtieth Session, Agenda Item 44, United Nations General Assembly, (New York: United Nations, 8 October 1975), p. 41.
6. This proposal had the support of both India and China.
7. For details of these, see Ronald G. Purver, Arms Control: The Regional Approach, National Security Series No.1/81 (Kingston: Centre for International Relations, Queen's University, 1981), p.17-19.
8. Ibrahima Sy, "A Nuclear-Weapon-Free-Zone in Africa", Disarmament, vol.16, no.3 (1993), pp.92-102.
9. David A.V. Fischer, "Implementing a Nuclear-Weapon-Free Zone in Africa", Disarmament, vol. 14, no.3 (1991), pp.122-123.
10. Harald Beck, Much Ado About Nothing: The Verification System of the South Pacific Nuclear Free Zone Treaty, Working Paper No. 109 (Canberra: Peace Research Centre Australian National University, 1991).
11. Zachary S. Davis, "The Spread of Nuclear-Weapon-Free Zones: Building a New Nuclear Bargain", Arms Control Today, vol.26, no.1 (February 1996).
12. Nuclear-Weapon-Free Zones, Vantage Conference Report, Airlie House, Warrenton, Virginia, October 7-9 1975, p.7.
13. Cited in Saiyid Mubarak Husain, "Nuclear Weapon-Free Zone: A Perception", Strategic Digest, vol.20, no.12 (December 1990), p. 3313.
14. Husain, "Nuclear Weapon-Free Zone", op.cit., p.3312.

15. "Middle East Nuclear-Weapon-Free Zone", The Arms Control Reporter, (1986), p.453.A.1.
16. Nuclear-Weapon-Free Zones, Vantage Conference Report, op.cit. pp.20-21.
17. James Leonard, "Steps Towards a Middle East Free of Nuclear Weapons", Arms Control Today, vol.21, no.3 (April 1991), p.10. See also: Shalheveth Freier, "A Nuclear-Weapon-Free Zone in the Middle East and Effective Verification", Disarmament, vol.16, no.3 (1993), pp. 66-91.
18. For background, see: Tae-Hwan Kwak, "Designing the Non-Nuclear Korean Peninsula: Problems and Prospects", Korean Journal of Defense Analysis, vol.4, no.1, (Summer 1992), pp.221-243.
19. David Mutimer, Bon-Hak Koo and Richard Reimers, "Regional Specificity and Global Processes: A Tri-Regional Perspective on Comprehensive Nuclear Non-Proliferation", in J. Marshall Beier and Stephen Mataija, eds., Proliferation in All Its Aspects Post-1995: The Verification Challenge and Response (Toronto: Centre for International and Strategic Studies, York University, 1995), pp.102-103.
20. A UN study on NWFZs lists several objectives with regional or wider significance which may be pursued through the establishment of NWFZs:
 - (a) To spare the zonal states from the use or threat of use of nuclear weapons;
 - (b) To contribute to preventing horizontal proliferation of nuclear weapons, as well as to limit a wider geographical deployment by the nuclear-weapon Powers;
 - (c) To strengthen confidence and improve relations among zonal States;
 - (d) To contribute to regional and world stability and security and to the process of disarmament, in particular nuclear disarmament; and
 - (e) To facilitate and promote co-operation in the development and use of nuclear energy for peaceful purposes both in the region and between zonal and extra-zonal States.
- Effective and Verifiable Measures Which Would Facilitate the Establishment of a Nuclear-Weapon-Free Zone in the Middle East, Study Series, (New York: UN Department of Disarmament Affairs, 1991), p.5.
21. Davis, "The Spread of Nuclear-Weapon-Free Zones: Building a New Nuclear Bargain", op.cit., p. 18.
22. Helen Leigh-Phippard, "Nuclear-Weapon-Free Zones: Problems and Prospects", Arms Control, vol.14, no.2 (August 1993), p.111.
23. Davis, "The Spread of Nuclear-Weapon-Free Zones", op.cit., p.19.
24. Harold Muller, "Prospects for the Fourth Review Conference of the Non-Proliferation Treaty", SIPRI Yearbook 1990 (Oxford: Oxford University Press, 1990), p.579.

25. Davis, "The Spread of Nuclear-Weapon-Free Zones", op.cit., p.8.
26. Bariyu A. Adeyemi, "Africa as a Nuclear-Weapon-Free-Zone", Disarmament, vol.14, no.3 (1991), p.100.

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Appendix 1
Nuclear Weapon Free Zones Compared

	African	Latin American	Southeast Asian	South Pacific
Treaty establishing	African Nuclear Weapon Free Zone Treaty (Treaty of Pelindaba)	Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (Treaty of Tlatelolco)	Treaty on the Southeast Asia Nuclear Weapon-Free Zone (Bangkok Treaty)	South Pacific Nuclear Free Zone Treaty (Treaty of Rarotonga)
Negotiated	1991-95	1962-66	1985-95	1983-85
Signed	April 11, 1996	February 14, 1967	December 15, 1995	August 6, 1985
Entry into force	Will enter into force when ratified by 28 states	April 22, 1968	Will enter into force when ratified or acceded to by 7 states	December 11, 1986
Duration	Indefinite	Indefinite	Indefinite	Indefinite

<p>Membership (signatories of protocols underlined) (Ratifiers indicated by 'R')</p> <p>(Data may be incomplete)</p>	<p>(As of December 1996) Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, CAR, Chad, <u>China</u>, Comoros, Congo, Cote d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, <u>France</u>, Gabon, Gambia (R), Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Mali, Mauretania, Mauritius (R), Morocco, Mozambique, Namibia, Niger, <u>Russia</u> Rwanda, Sao & Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Swaziland, Sudan, Tanzania, Togo, Tunisia, Uganda, <u>United Kingdom</u>, <u>United States</u>, (Western Sahara), Zaire, Zambia, Zimbabwe</p>	<p>(As of December 1996) Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, <u>China</u>, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, <u>France</u>, Grenada, Guatemala, Guyana (*), Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, <u>Russia</u>, St. Kitts and Nevis (*), St. Lucia (*), St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, <u>United Kingdom</u>, <u>United States</u>, Uruguay and Venezuela</p> <p>All have ratified except Cuba. *indicates has ratified agreement, but not yet in force.</p>	<p>(As of December 1996) Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam</p>	<p>(As of December 1996) Australia (R), <u>China</u>, Cook Is. (R), Fiji (R), <u>France</u>, Kiribati (R), Nauru (R), New Zealand (R), Niue (R), Papua New Guinea (R), <u>Russia</u>, Western Samoa (R), Solomon Is. (R) and Tuvalu (R), <u>United Kingdom</u>, <u>United States</u></p>
<p>Zone of application</p>	<p>Continent of Africa, island states which are OAU members and all islands considered to be part of Africa by the OAU, as well as territorial seas and archipelagic waters</p>	<p>All Latin American republics for which the treaty is in force and adjacent oceans. Once all have joined, the region approximately south of 35 degrees north latitude and east of 115 degrees west longitude in the Western hemisphere</p>	<p>The land territory, internal waters, territorial seas and archipelagic waters (including exclusive economic zones) of all states of Southeast Asia</p>	<p>Roughly the area stretching from the border of the Latin American nuclear-free zone in the east to the western coast of Australia in the west, and from the border of the Antarctic zone in the south north to the equator, with an extension to include Kiribati, including ocean areas</p>

Institutional mechanism	African Commission on Nuclear Energy (AFCONE)	Agency for the Prohibition of Nuclear Weapons in Latin America (OPANAL)	Commission for the Southeast Asia Nuclear Weapon-Free Zone	Consultative Committee of the South Pacific Nuclear-Free Zone
Verification provisions	IAEA safeguards. Information reporting and exchanges	IAEA safeguards. Information reporting and exchanges, requests for clarification, special inspections	IAEA safeguards. Information reporting and exchanges, requests for clarification, fact-finding missions	IAEA safeguards. Information reporting and exchanges, consultations, requests for clarification, challenge inspections

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Appendix 2
Verification Provisions of Nuclear Weapon Free Zones

	African	Latin American	Southeast Asian	South Pacific
Activities Subject to Verification	Peaceful use of nuclear energy; processes of dismantling and destruction of nuclear explosive devices; destruction or conversion of production facilities for nuclear explosive devices	Peaceful nuclear activities, including peaceful nuclear explosions	Peaceful nuclear activities	Peaceful nuclear activities
Regional Monitoring Authority	African Commission on Nuclear Energy (AFCON)	Agency for the Prohibition of Nuclear Weapons in Latin America (OPANAL)	Commission for the Southeast Asia Nuclear Weapon-Free Zone	Consultative Committee of the South Pacific Nuclear-Free Zone; the South Pacific Bureau for Economic Co-operation
Role of Regional Monitoring Authority	Verification of processes of dismantling and destruction of nuclear explosive devices and the destruction or conversion of production facilities for these; collating parties' reports and information exchanges; arranging consultations; convening conferences of parties; operating the complaints procedure; reviewing the application of IAEA safeguards to peaceful nuclear activities	Requesting complementary or supplementary information regarding events or circumstances relating to compliance with the treaty; conducting special inspections; collating periodic and special reports	Conducting fact-finding missions; collating parties' reports, including those resulting from parties' requests for clarification	Requesting and circulating special reports from parties; convening meetings of a Consultative Committee on matters relating to the treaty or its operation; conducting challenge inspections

Role of IAEA	Verification of peaceful uses of nuclear energy, of processes of dismantling and destruction of nuclear explosive devices and the destruction or conversion of production facilities for nuclear explosive devices. Parties required to conclude full scope safeguards agreements with the IAEA	Receiving periodic and special reports. Parties required to conclude full scope safeguards agreements with the IAEA	Parties required to conclude full scope safeguards agreements with the IAEA	Parties required to have in place safeguards equal to those required under the NPT or to negotiate full scope safeguards agreements with the IAEA
Methods of Verification	Annual reports of peaceful nuclear activities and other matters relating to the treaty; reports of significant events affecting the implementation of the treaty; complaint/ dispute settlement procedure. Full scope IAEA safeguards: routine, <i>ad hoc</i> and special inspections of safeguarded nuclear facilities and materials; containment and surveillance measures at nuclear facilities; national systems of accounting for and control of nuclear materials; reports by parties	Periodic and special reports; special inspections. Full scope IAEA safeguards: routine, <i>ad hoc</i> and special inspections of safeguarded nuclear facilities and materials; containment and surveillance measures at nuclear facilities; national systems of accounting for and control of nuclear materials; reports by parties	Reports; information exchanges; requests for clarification; fact-finding missions. Full scope IAEA safeguards: routine, <i>ad hoc</i> and special inspections of safeguarded nuclear facilities and materials; containment and surveillance measures at nuclear facilities; national systems of accounting for and control of nuclear materials; reports by parties	Reports; information exchanges; consultations, complaints procedure; challenge inspections. Full scope IAEA safeguards: routine, <i>ad hoc</i> and special inspections of safeguarded nuclear facilities and materials; containment and surveillance measures at nuclear facilities; national systems of accounting for and control of nuclear materials; reports by parties

Sources: Harald Beck. *Much Ado About Nothing? The Verification System of the South Pacific Nuclear Free Zone Treaty* (Working Paper No.109) (Canberra: Australian National University, Peace Research Centre, 1991); Greg E. Fry. "The South Pacific Nuclear-Free Zone," in SIPRI. *World Armaments and Disarmament: SIPRI Yearbook 1986* (Oxford: Oxford University Press, 1986), 499-521; Institute for Defense and Disarmament Studies. *The Arms Control Reporter* (1996); International Atomic Energy Agency. *IAEA Safeguards: An Introduction* (Vienna: IAEA, 1981), 16-26; Sola Ogunbanwo. "The Treaty of Pelindaba: Africa Is Nuclear-Weapon-Free." *Security Dialogue* 27:2 (1996), 185-200; Alfonso Garcia Robles. "The Treaty for the Prohibition of Nuclear Weapons in Latin America (Treaty of Tlatelolco)," in SIPRI. *SIPRI Yearbook of World Armaments and Disarmament 1969/70* (Stockholm: Almqvist & Wiksell, 1970), 218-56.

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