

EURATOM & ABACC : Recipes for a Middle East NWFZ ?

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in

A Zone Free of Weapons of Mass Destruction in the Middle East

by

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INTRODUCTION.

One of the principal causes of instability in the Middle East has been the danger of proliferation of weapons of mass destruction. Though, there have been instances where chemical weapons are used already, luckily no explicit use or tests of nuclear devices happened to take place in the region.¹ Nevertheless, Israel is strongly believed to have already stockpiled atomic bombs in the basement. Yet, the official stance of the Israeli authorities against such allegations is neither the denial nor the acknowledgement of the existence of nuclear weapons in their military arsenal. This strategy is called the policy of ambiguity or opaqueness². However, for building confidence among the states and promoting peace in the Middle East, transparency is essential.

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¹The preliminary records on the use of chemical agents, both in the continental Europe and the Middle East, go back to the First World War years. Later, the Egyptian use of chemical agents in support of the republican forces in the Yemen Civil War (1962-1967) was the subject of numerous reports in those years. More recently, during the Iran-Iraq War (1980-1988), use of chemical weapons has been extensively documented by UN investigations. For a detailed information on this issue see, Peter Herby, *The Chemical Weapons Convention and Arms Control in the Middle East*, Oslo: Falch Hurtigtryk as, for PRIO, 1992.

²According to Etel Solingen, opaqueness refers both to a policy and to a systemic outcome characterized by no open acknowledgement of existing nuclear military capabilities or of intentions to acquire a nuclear weapon, while refusing to commit fully and effectively to mutual or multilateral full-scope safeguards. For her further comments see, Etel Solingen, "The Domestic Sources of Regional Regimes : The Evolution of Nuclear Ambiguity in the Middle East", *International Studies Quarterly*, June 1994, 38 : 305-337. To have more information about "opaqueness" see, Benjamin Frankel (ed.), *Opaque Nuclear Proliferation*, London, Frank Cass, 1991. See also, Frank Barnaby, *The Invisible Bomb*, London, I.B. Tauris, 1989. For an in-depth analysis of the Israeli policy of ambiguity in the nuclear field, see Shai Feldman, *Israeli Nuclear Deterrence: A Strategy for the 1980s*, Columbia University Press, New York, 1982. For an *exposé* of Israel's nuclear engagements see, Seymour M. Hersh, *The Samson Option: Israel's Nuclear Arsenal and American Foreign Policy*, New York, Random House, 1991.

Only then the removal of all weapons of mass destruction from the region is likely to be materialized. A study on the security considerations of the states in the Middle East reveals that a growing threat emanating from the existence and the danger of proliferation of weapons of mass destruction is being perceived by the authorities of the states concerned.³ This perception has been the subject of successive declarations by the officials of these states.⁴ Although, the modalities suggested for overcoming that threat exhibit differences, a common view is being shared by these authorities as regards the necessity to deal with it within the context of a Zone Free of Weapons of Mass Destruction in the Middle East (ZFWMD/ME)⁵. Hence, on one side, the Arab states and Iran point out to the existence of universal conventions and treaties concerning the weapons of mass destruction. Consequently, they declare that Israel should *a priori* become a member state to the Nuclear Non-Proliferation Treaty (NPT). On the other side, the Israeli officials specifically point out to the inefficiency and insufficiency of the existing universal nuclear non-proliferation regime. Their principal argument is that, the universally standard safeguards procedures of the IAEA proved impotent to disclose the clandestine nuclear weapon program of Iraq. Thus, Israel's official stance vis-à-vis adherence to the NPT is definitely negative. Notwithstanding, they endorse the idea of a ZFWMD/ME by emphasizing the feasibility of a regional approach, provided the zonal agreement incorporates far-reaching verification provisions.⁶ In these circumstances, a middle ground between the parties to the dispute is expected to be found by the establishment of a nuclear-weapon-free zone (NWFZ/ME) as the first step towards the creation of a ZFWMD/ME. The NWFZ/ME

³The author, during his research at UNIDIR, had access to the drafts of the threat perception papers that were commissioned by UNIDIR to several authorities from the region. See, *National Threat Perceptions in the Middle East*, UNIDIR Report, (forthcoming), 1995. For further assessment of the security concerns of the states in the region see, James Leonard, Jan Prawitz & Benjamin Sanders, Establishment of a Nuclear-Weapon-Free Zone in the Region of the Middle East, in the Report of the Secretary-General of the United Nations, *Study on Effective and Verifiable Measures which would Facilitate the Establishment of a Nuclear-Weapon-Free Zone in the Middle East*, (A/45/435), 1990;

⁴For official viewpoints of the states in the region see, *Establishment of a Nuclear-Weapon-Free Zone in the Region of the Middle East*, Israel: Draft Resolution, UN General Assembly, Thirty-Fifth session, First Committee, Agenda item no. 38, October 31, 1980; *Modalities of Application of Agency Safeguards in the Middle East*, Note by the Director General, GC(XXXIII)/887, Vienna, IAEA, August 1989; *Technical Study on Different Modalities of Application of Safeguards in the Middle East*, IAEA-GC(XXXIII)/887, August 1990; *Modalities for the Application of Safeguards in a Future Nuclear-Weapon-Free Zone in the Middle East*, An International Atomic Energy Workshop, Vienna, Austria, 4-7 May 1993; *Application of IAEA Safeguards in the Middle East*, Report by the Director General to the Board of Governors and to the General Conference, GOV/2682- GC(XXXVII)/1072, IAEA, Vienna, September 1993; *Application of IAEA Safeguards in the Middle East*, Report by the Director General, GOV/2757- GC(XXXVIII)/RES/18, IAEA, Vienna, August 1994; *Application of IAEA Safeguards in the Middle East*, GC(XXXVIII)/RES/21, IAEA, Vienna, September 1994.

⁵Indeed, a proposal co-sponsored by Iran and Egypt to establish a NWFZ in the Middle East was tabled in 1974 in a United Nations General Assembly meeting, and was adopted as the UNGA Resolution every year since then. Though, the same Resolution used to be adopted unanimously since the beginning of 1980s with Israel voting in favor, no substantial achievements have come through in the years followed. However, a proposal to establish a ZFWMD in the Middle East introduced by the Egyptian President Husni Mubarek provided a new impetus to the efforts to free the region from all weapons of mass destruction.

⁶Moreover, a *conditio sine qua non* of the Israeli officials is the recognition of the legitimacy of the State of Israel by all the potential member states of the zone. This issue, which extends beyond the scope of this chapter, will not be discussed here.

agreement is thus suggested to be endowed with effective verification provisions, and also linked to the universal nuclear non-proliferation regime.

Two such regional co-operation and non-proliferation arrangements do exist, namely EURATOM⁷ and ABACC⁸, out of which one can draw lessons for the Middle East. To give a preliminary insight, it may be stated that the significance of EURATOM stems principally from its enduring safeguards procedures which were carefully designed to make them acceptable both to its member states, and to the United States and Canada.⁹ Yet, strong criticisms against EURATOM and its safeguards provisions were voiced, during the Cold War period, from the Eastern Bloc countries. The representatives of these states often declared that EURATOM safeguards were nothing but 'self-policing among the friends'¹⁰. Nevertheless, one should remember that the 'friends' within the EURATOM alliance were previously 'bloody foes' for so long in history. Therefore, EURATOM was actually seen, both by its member states and their Western allies, as a leverage for promoting cooperation and enhancing peace and security in Western Europe. Similarly, in Latin America, two rival states both in nuclear research and nuclear market, namely Argentina and Brazil, have come to terms after decades of mutual suspicion. They opened their very secret nuclear facilities to mutual inspections as well as to universal inspections of the IAEA. There exists a high degree of confidence on both sides lately. This may give necessary hints about the confidence-building efforts and their favorable consequences for the Middle East. This regional arrangement in the nuclear field as well, has been considered as a leverage for further cooperation between the two rival states.¹¹

Therefore, the scope of this chapter will cover those verification provisions of EURATOM and ABACC which are thought to be relevant to an NWFZ/ME. To begin with, briefings about the emergence and evolution of EURATOM and ABACC is useful in order to inform the reader about how the characteristics of these regions were embodied into reliable, effective and long-lasting regional agreements. Then, far-reaching and stringent safeguards procedures of these two institutions will be highlighted. Likewise, insights will be given about how peaceful uses of nuclear energy can become possible in environments reigned by mistrust and hostility, and can pave the way for further cooperation. The implications of the Western European and the Latin

⁷European Atomic Energy Community.

⁸Argentine-Brazilian Agency for Accounting and Control of Nuclear Materials.

⁹EURATOM could not have come about, let alone survived, without the consent of its members, particularly of France, nor without the technological support of the United States or short of natural uranium of Canada.

¹⁰The Soviets have frequently voiced such views about EURATOM, however as David Fischer noted, "despite Soviet declarations that EURATOM safeguards were no more than a form of (unacceptable) self-inspection, the Soviet Union was agreeable in private talks with the United States, to accord special treatment for EURATOM. See, George Bunn, *Arms Control by Committee: Managing Negotiations with the Russians*, Stanford University Press, 1992, pp: 83-104, cited in Fischer, *ibid.*, p. 36.

¹¹According to Professor Paulo S. Wrobel of the Pontificia Universidade Catolica do Rio de Janeiro, both the Argentine and Brazilian authorities were well aware that cooperation in the nuclear field would be an important and effective step for future and more fruitful cooperation in all fields. Prof. Wrobel expressed this view upon his comments on the first drafts of this paper during the author's research fellowship at UNIDIR.

American experiences for a Middle Eastern NWFZ will then be analysed. Upon this analysis, several proposals regarding the nuclear non-proliferation initiatives for the Middle East will follow the suit.

I...WESTERN EUROPE.

1...Emergence and Evolution of the EURATOM Treaty.¹²

The devastating effects of the two World Wars in this century on continental Europe, which costed millions of lives and treasures lost, urged politicians, scientists, scholars, bureaucrats, all concerned figures from different fields and strata of the peoples of Europe, to find a way of putting an end to the hostilities among the states in the region, and to promote peace and friendship. Due to the very fact that the 'war machine', or the 'armoury', was essentially made of steel composed of iron and coal, it was thought that keeping these basic elements under control, would eventually allow to keep the development of 'armouries' under control. This way of thinking, among others, gave way to the emergence of the European Coal and Steel Community (ECSC) in 1950, whose principal actors were France and Germany. Hence, the idea of a 'united Europe' practically came about with the ECSC. However, the very same years had already witnessed an unprecedented weapon, namely the atomic bomb developed and used by the United States. This weapon technology was nonetheless bound to spread, in one way or the other, because of the never-satisfied 'appetite' and curiosity of the scientists.¹³ Hence, the same Europeans who had somehow found a way to control the 'war machine', then again had to find a way to prevent further spread of this 'brand new' scientific discovery. The Continent's land for science and technology was very fertile. Accordingly, the idea of "atoms for peace" had to go beyond mere rhetorics. What would the Germans do with an atomic weapon, given what they have done without such a weapon? The European Atomic Energy Organization (later EURATOM) was created in such a state of mind. Nevertheless, giving birth to EURATOM was not an easy process politically, nor a straightforward one technically. EURATOM had to harmonise dissimilar and somewhat conflicting interests of various states both inside and outside the region. In particular, France had 'nuclear ambitions' on the one hand, and was equally committed to not to leave the 'floor' to W. Germany in the nuclear field, on the other. The latter aim of France did well coincide with that of the other European states, the United States and the Soviet Union. Notwithstanding, the French determination to 'go nuclear' was in no way accepted by the United States, nor by the Soviet Union. However, it was clear that unless France gave its consent, no talk of a European institution which would control the further spread of nuclear weapons would be possible, nor might W. Germany be under effective and close scrutiny. This was a 'trade-off' for the United States which finally culminated in its generous

¹²For a recent and comprehensive survey on the emergence and evolution of the 'EURATOM Safeguards System', and its political implications on the relations both among the friends and the foes during the Cold-War period see, Darryl A. Howlett, *EURATOM and Nuclear Safeguards*, London, MacMillan Press, 1990.

¹³This should by no means imply that the deliberate attempts of the politicians to acquire such a strategic asset at their disposal had a lesser role. One may even think that, the politicians urged the scientists to develop their own bomb indigenously.

support for EURATOM. But a similar 'trade-off' was also the case for France. Since, unless the United States supported the idea of EURATOM, politically and technologically, it would have been very difficult for France to develop its infantile nuclear research programme in relatively short time. Then, the sides agreed that this European institution had to be endowed with stringent verification provisions. The degree of stringency had to meet the US standards, otherwise the US inspectors themselves would have had to carry out inspections in the European nuclear installations. This was something the Europeans would like to avoid absolutely.¹⁴ Concomitantly, the IAEA was in the process of establishing its global safeguards system, and there were concerns that the EURATOM system might undermine this objective.¹⁵ It was argued that the US support for EURATOM had "effectively ended any chance that the IAEA would develop into a universal safeguards system. Once this Pandora's box was opened, little possibility remained that other nations would readily agree to nuclear transfer terms more rigorous than those imposed upon Euratom."¹⁶ However, the US support was secured, and much of this was due to the Final Report of the Conference convened at the Princeton University in 1956.¹⁷ The Report listed the advantages for the United States if EURATOM adopted a strict control system. According to the Report, these advantages were mainly three-folds. First, the Western Europe would probably become the most important area of nuclear power development¹⁸, apart from the United States and the Soviet Union. Second, an experimentation with a tight international control mechanism, though in a limited area, could set an example for

¹⁴Particularly the French always considered such US involvements as an interference in their sovereignty.

¹⁵Darryl A. Howlett, 'Regional Nuclear Co-Operation and Non-Proliferation Arrangements: Models from Other Regions', in Darryl A. Howlett & John Simpson (eds.), *East Asia and Nuclear Non-Proliferation*, Papers from Twelfth PPNN Core Group Meeting, Japan, 28-29 Nov., 1992, pp: 63-71.

¹⁶See, Charles K. Ebinger, *International Politics of Nuclear Energy*, London, Sage Publications, 1978, quoted in Darryl Howlett, EURATOM and Nuclear Safeguards, p. 71.

¹⁷The political agenda in the mid-1950s was dominated by the issues relating to the security of Western Europe, the NATO alliance, and the Cold War. While the US authorities were willing to foster the European integration, on the one hand, they were equally dubious about the extent of this integration would go. They didn't wish for a challenging integration which might have adversely affected their nuclear supremacy within the NATO alliance, nor did they want to leave Western Europe to the 'menace' of the Soviets. In such a political atmosphere, many scholarly figures were interested in these politico-military issues. The result was the establishment of centers, either under the auspices of universities or as independent foundations, mandated to carry such strategic studies. Indeed, the pioneers of these centers were established in the United States as early as the 1920s. Hence, in May 1956, EURATOM and its NATO implications were the central themes for discussion at a conference held at Princeton University. The conference was convened to provide policy advice to the government regarding the kinds of overtures the United States should make towards EURATOM. Among the participants at the conference chaired by Klaus Knorr, there were also figures from the US State Department and the US Atomic Energy Commission.

¹⁸By investing in nuclear industry and nuclear research not all the states of Western Europe opted to pursue "nuclear ambitions". At the time, nuclear energy production was seen as a powerful and effective alternative for the industrialized European countries in need of huge amounts of energy. In mid-1955 the Benelux countries introduced what was known as the *Benelux Memorandum*, within the forums of the ECSC, calling for closer European unity based on measures designed to promote functional integration in the area of nuclear power. A concomitant attempt to promote nuclear cooperation surfaced in the Franco-German nuclear agreement of 30 April 1955 as the result of the desire of these two countries to plan jointly the future developments of nuclear energy. During the course of discussions on the modalities of a European organization in the nuclear field, it was often stressed that the establishment of a common atomic organization would serve as an instrument for closing the gap between domestic energy supplies and the increasing demand for energy in these countries. Moreover, since the conventional energy sources were imported and were subject to external influences, it was thought that indigenous production of nuclear energy would reduce this dependency.

the evolution of a tight universal system among nations. Third, the United States would be relieved from the necessity of inserting itself actively, through the terms of its bilateral program, in the control problem in that part of the world.¹⁹ In a way, this report revealed the US point of view on EURATOM's proposed safeguards procedures as being more promising than the procedures agreed upon in the IAEA's Statute. The latter was indeed a reflection of a compromise under the circumstances of the Cold War.²⁰ Therefore, for the US authorities, the idea of supporting the European proposal seemed interesting, especially since these safeguards procedures were actually derived from the safeguards provisions contained within United States bilateral nuclear transfer agreements, and the United States domestic nuclear law. Moreover, the ideas that have been put forth at the time of the Acheson-Lilienthal Report and the Baruch Plan were inscribed into the EURATOM safeguards provisions. Therefore, these provisions were much like an *American cloth designed à taille Européenne*.

2...Fundamentals of EURATOM's Safeguards System.

The fundamental clauses of the EURATOM safeguards procedures can be found in Chapter VII of the EURATOM Treaty,²¹ which comprises Articles 77 to 85. The significant feature of these nine Articles is that, when taken together, they encapsulate a whole range of different safeguards ideas. Some of these were quite novel to EURATOM and were therefore largely untested. Others were drawn from ideas developed in different industries. Still others did have a track record in nuclear regulation. But what is noteworthy about all these ideas is that they are broadly representative of the entire spectrum of safeguards thought up to that time. When taken as a whole, the EURATOM Safeguards Articles reveal a concerted attempt on the part of their authors to mould together a coherent set of nuclear energy control provisions.²²

Accordingly, Article 77 of the EURATOM Treaty states that *..the Commission shall satisfy itself that, in the territories of Member States, (a) ores, source materials and special fissile materials are not diverted from their intended uses as declared by the users, (b) the provisions relating to supply and any particular safeguarding obligations assumed by the Community under an agreement concluded with a third State or an international organization are complied with.* Together with this, Article 2 of the EURATOM Treaty required the EURATOM Commission to ensure, *by appropriate supervision, that nuclear materials are not diverted to purposes other than those for which they are intended.* For the attainment of the objectives set out in Articles 2 and 77, the Treaty required from the operators, with Article 78, a declaration to the Commission concerning the *basic characteristics of the*

¹⁹Under the system then envisaged, the United States could depend on the French to watch the Germans, the Germans to watch the French, and the smaller nations to watch both the French and the Germans. See Klaus Knorr, *EURATOM and American Policy: A Conference Report*, Princeton, Center for International Studies, Princeton University, 1956, cited in Darryl Howlett, *EURATOM...*, *ibid.*, pp: 72-73.

²⁰Mostly because of the Indian opposition (and of the Soviets to some extent), the United States had faced difficulties in getting an agreement in the IAEA Board of Governors on an effective safeguards system.

²¹The EURATOM Treaty was signed on 25 March 1957 at Rome, initially by Belgium, France, Luxembourg, the Netherlands, F.R. Germany, and Italy that had established the European Economic Community (EEC).

²²Darryl A. Howlett, *EURATOM...* p. 87.

installations set up or operating for the production, separation or other use of source materials or special fissile materials or for the production of irradiated nuclear fuels. Similarly, an approval by the Commission of the techniques to be used for the chemical processing of irradiated materials was made obligatory by the Treaty.

Since the European authorities were determined to secure the US's political and technological support without their direct involvement, the proposed US-EURATOM safeguards agreement had two basic features: a system of *checks* to ensure that reliable nuclear accountancy records were being kept; and a system of *inspection* implemented by a EURATOM safeguards inspectorate comprised of EURATOM nationals only, in order to verify that the information supplied in the accountancy records was accurate. Accordingly, Article 79 of the EURATOM Treaty encharged EURATOM with setting up a rigorous system of nuclear accountancy. To this end, the Commission required that *operating records be kept and produced in order to permit accounting for ores, source materials and special fissile materials used or produced. The same requirement shall apply in the case of the transport of source materials and special fissile materials. Those subject to such requirements shall notify the authorities of the Member State concerned of any communications they make to the Commission pursuant to Article 78 and to the first paragraph of this Article.* With Article 79, the designers of the EURATOM Treaty did not only satisfy their American counterparts who insisted on a strict and reliable material accountancy system so as to allow transfer of nuclear material and technology, but they equally set up a system for themselves regarding their potential for nuclear trade and the related security issues

Similarly, to restrict the intrusion of the US inspectors, the Europeans set on to draft safeguards inspection provisions in such a way that even the US authorities would agree on not to carry out their own inspections in European installations. The terms of the Article 81 is a clear indicator of this attempt to convince the US of the stringency of EURATOM's safeguards provisions. Hence, Article 81 states that: *The Commission may send inspectors into the territories of Member States....inspectors shall at all times have access to all places and data and to all persons who, by reason of their occupation, deal with materials, equipment or installations subject to safeguards...in order to apply such safeguards to ores, source materials and special fissile materials and to ensure compliance with the provisions of Article 77... if the carrying out of an inspection is opposed, the Commission shall apply to the President of the Court of Justice in order to ensure that the inspection be carried out compulsorily.... if there is a danger in delay, the Commission may itself issue a written order in the form of a decision, to proceed with the inspection....[then] the authorities of the State concerned shall ensure that inspectors have access to the places specified in the order or decision.* In the same regard, in Article 82, the Treaty brought clarity to the task of the inspectors and their selection by stating that *inspectors shall be recruited by the Commission [and] they shall be responsible for obtaining and verifying the records referred to in Article 79. They shall report any infringements to the Commission.* Thus, neither objections to the designation of the inspectors, nor attempts to retard the proper

inspections were allowed to create a serious problem in the EURATOM Treaty.²³ To ensure compliance, the EURATOM Treaty granted the Commission the right to impose *sanctions* on persons or undertakings operating nuclear installations in the event of an infringement. In Article 83, these sanctions are listed *in order of severity* as follows: (a) a warning; (b) the withdrawal of special benefits such as financial and technical assistance; (c) the placing of the undertaking for a period not exceeding four months under the administration of a person or board appointed by a common accord of the Commission and the State having jurisdiction over the undertaking; (d) total or partial withdrawal of source material or special fissile materials.²⁴ The Treaty deemed important the proper implementation of the above measures for effectiveness and credibility reasons, and therefore it stated that *requiring the surrender of materials shall be enforceable*.

The scope of application of the EURATOM safeguards is elucidated in Article 84 which satisfied the French that nothing in the Treaty would preclude them from developing their atomic explosive device. Hence, Article 84 gave way to the French military nuclear programme by not extending the application of safeguards *to materials intended to meet defence requirements*. As Lawrence Scheinman stated, no article of the Treaty limited a nation's right to use atomic energy for military purposes.²⁵ The United Kingdom, which had "gone nuclear" almost a decade ago, and France thus stand as the two-and only nuclear weapons states (NWS) party to the EURATOM Treaty. It goes without saying that a similar situation is in no way suggested for the Middle East.²⁶ Though Article 84 exempted materials intended to meet defence requirements from safeguards application, it by no means stipulated that these installations were to be excluded from the obligation of furnishing information to the Commission. However, neither France, nor later the United Kingdom have interpreted these clauses in the sense of the Commission, nor did they allow inspection in their defence oriented facilities.²⁷

²³As it is the case for the IAEA safeguards procedures, such 'tools' can very well be exploited by most of the 'nuclear going' states in order to gain time to hide their secrets. Even under the terms of the UNSC Resolution 687, Iraqi authorities 'dragged their feet' either by objecting to the inspectors or by not giving them proper 'escort' services to transfer the teams to the inspection sites. In a way, Iraqi leadership opted to play a 'cat and mouse' game with the UNSCOM inspectors.

²⁴The last sanction, which meant the confiscation of the precious assets of the violating party, is quite severe and thus of a deterring nature.

²⁵Lawrence Scheinman, *Atomic Energy Policy in France under the Fourth Republic*, Princeton, Princeton University Press, 1965, pp: 185-186, quoted in Howlett, *EURATOM...* p. 96.

²⁶Taking into consideration the evolutions of the nuclear energy programmes of both the United Kingdom and France, and their privileged seats in the international Council that "governs" the international politics, an "excuse" can be apprehended with regard to the Article 84 of the EURATOM Treaty which would be totally irrelevant for a treaty establishing an NWFZ/ME.

²⁷A clarity was brought to this dispute in mid 1970s, with the Article 35 of the Commission Regulation 3226/76. This particular Article provides very explicit instructions about exactly what information is to be transferred from the State to EURATOM where military facilities are concerned. Hence, Article 35 of the Regulation states that *1. The provisions of this Regulation shall not apply: (a) to installations or parts of installations...assigned to meet defence requirements...or (b) nuclear materials...assigned to meet defence requirements....3. It is understood in any event that: (a) the provisions of Articles 1 to 4 [Basic technical Characteristics and Particular Safeguards Provisions Declaration of the Technical Characteristics], and 7 and 8 [Particular Safeguards Provisions] shall apply to installations or parts of installations which at certain times operated exclusively with nuclear materials liable to meet the defence requirements but at other times operated exclusively with civil nuclear materials; (b) the [same] provisions....shall apply, with exceptions for reasons of national security, to installations or parts of installations to*

One important feature of the EURATOM Treaty is that, with Article 52 in Chapter VI, it provides basis for the establishment of the *Supply Agency* by stating that the Agency *shall have a right of option on ores, source or special fissile materials produced in the territories of the Member States and an exclusive right to conclude contracts relating to the supply of ores, source materials and special fissile materials coming from inside the Community or from the outside*. Similarly, with Article 86 in Chapter VIII of the EURATOM Treaty, it is decided that the *special fissile materials shall be the property of the Community. The Community's right of ownership shall extend to all special fissile materials which are produced or imported by a Member State, a person or an undertaking and are subject to safeguards provided in Chapter VII*. In the same regard, Article 88 stated that *the Agency shall keep a special account in the name of the Community, called Special Fissile Materials Financial Account*.²⁸ There are similarities with the wording of these Articles and that of the *Acheson-Lilienthal Report* which emphasized that the supply of uranium was indispensable to the production of nuclear weapons, and that any control would have to provide adequate safeguards regarding raw materials. Accordingly, the authors suggested the establishment of the International Atomic Development Authority (IADA) with far-reaching powers to control every level of activity leading from raw materials to weapons.²⁹

i...Commission Regulations.

The EURATOM Treaty was signed in 1957, however some additional regulations were required to put it into effect. Thus, in 1959 and 1960 the Commission of the European Communities adopted two Regulations (7 & 8) which formally started the operation of the terms of the Treaty. Regulation 7 provided for the Commission to determine *the procedure for completing the declarations laid down in Article 78 of the Treaty*.³⁰ Accordingly, the Member States were required to provide the Commission with the following informations: the type of the reactor and its principal use; its thermal power rating; its fuels (composition and enrichment of fissile material); brief description and general plans for the installation; the technical processes employed. Even though the scope and the purpose of Regulation 7 was thought to enable the Commission to implement Article 78 in the territory of EURATOM countries, differing interpretations between the EURATOM Commission and France (and later the UK) have made this difficult. The Commission Regulation 8, on the other hand, aimed at providing *the guidelines for proper implementation of the terms of the Article 79*. It thus required operators to furnish

which access could be restricted for such reasons but which produce, treat, separate, reprocess or use in any other way simultaneously both civil nuclear materials and nuclear materials assigned or liable to be assigned to meet defence requirements.

²⁸The rights and duties conferred to the Supply Agency, and to the EURATOM Commission which was to supervise it, were undoubtedly far-reaching. It was argued that these provisions were no mere monitoring, or keeping an eye on, but total control of and responsibility for supply. See, Howlett, *EURATOM...*, *ibid.*,

²⁹According to the Report, the IADA would be effective if it were given the responsibility for the following activities: 1..the ownership or the leasing of the world supplies of uranium and thorium; 2..the construction and operation of all reactors and separation plants; 3..the conducting of research; and 4..the inspection of all activities under its control. However, these proposals found little endorsement in the international circles.

³⁰See the *Official Journal of the European Communities - Special Edition 1959-1962 (November 1972)*, p. 23.

information concerning the details of their stocks and movements of ores, source materials and special fissile materials. Regarding this information the Commission would then be provided with reliable records of the whole range of materials used and stored in the nuclear installations within the Community. It would then be possible to detect any loss or diversion of nuclear materials during the inspections. In the early 1960s the nuclear trade began to increase, both in scope and volume, requiring an increase in inspections. However, in order to be cost-effective and to ensure an efficient use of resources, regarding the limited number of inspectors vis-à-vis the number of inspections required arising from these increasing transactions, the Commission adopted Regulation 10 in 1962. With this regulation, the smaller quantities of nuclear materials which did not need inspection were identified, and thus, the EURATOM Treaty allowed the transfer of these materials without being subject to safeguards inspection.

ii...The Age of NPT and EURATOM.

In the second half of 1960s and in the early 1970s, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and its safeguards procedures to be implemented by the IAEA were of much concern for the authorities of both the IAEA and EURATOM. With the entry into the force of the NPT, the IAEA would be mandated to carry out safeguards inspections in the territories of the non-nuclear weapon states party to the Treaty. However, EURATOM's inspections were already underway in the territories of the European Community Member States. Therefore, the latter's regional safeguards would be likely to cause considerable problems to the universal aspirations of the former unless an effective way could be found for them to co-exist. The problem was mainly two-folds: First, was the nature of the safeguards procedures to be applied to the EURATOM countries; and second, the organization to be entrusted with the responsibility of implementing these safeguards. Accordingly, a question arose: would EURATOM survive to the existence of the IAEA ? However, West Germany and Italy strongly opposed to the abolishment of EURATOM, while the Benelux countries tended to support the Non-Proliferation Treaty. But in general, the EURATOM authorities' view was to keep their primary responsibility of carrying safeguards, while letting the IAEA act as a verifier of their job. Nevertheless, the IAEA authorities thought in a totally different way. According to them, EURATOM had to forgo its safeguarding role and leave the floor to the IAEA's safeguards implementation. An underlying cause of concern was the strong opposition of the Soviets who had never acknowledged EURATOM's status, asserting that it was nothing more than self-inspecting. Hence, for them, IAEA inspections would give credible results, and thus could keep West Germany under close scrutiny. But in the contrary, EURATOM authorities insisted on the 'non-disputable' effectiveness of their safeguards system, and they wanted to retain it.

Even by the time the NPT was signed in 1968, the IAEA-EURATOM safeguards issue had still not been resolved. However, Article III of the NPT, that was eventually agreed, did include an acknowledgement of regional safeguards systems, thus giving an official recognition (if

somewhat obliquely) to EURATOM's continued safeguards existence.³¹ Paragraph four of Article III states that *non-nuclear-weapon States Party to the Treaty shall conclude agreements with the International Atomic Energy Agency to meet the requirements of this Article either individually or together with other States in accordance with the Statute of the International Atomic Energy Agency.* For the EURATOM authorities, the inclusion of this clause to the NPT which does not insist upon individual safeguards agreements, meant the recognition of their safeguarding role. Nevertheless the debate had not ended on which organization would have the responsibility to carry out safeguards in Western Europe with the entry into force of the NPT. In May 1970, the IAEA Board of Governors established the Safeguards Committee to determine the essentials of a standard (model) agreement to be applicable to the non-nuclear weapon states party to the NPT. The result was *the Structure and Content of Agreements Between the Agency and States Required in Connection With the Treaty on the Non-Proliferation of Nuclear Weapons*, namely the INFCIRC/153. Accordingly, following the negotiations between the IAEA and EURATOM, both sides agreed on a document designated as INFCIRC/193. In July 1972, the non-nuclear weapon states of the European Community (i.e., West Germany, Italy, Belgium, the Netherlands and Luxembourg), EURATOM and the IAEA concluded this agreement. The parties signed it in April 1973 together with Denmark and Ireland. The INFCIRC/193 was very similar to the standard INFCIRC/153 agreement, and carried out an additional component in the form of a Protocol which contained a detailed *modus vivendi* on how the safeguards agreement would work in practice. This was a completely new innovation as it was the first attempt to marry together two different safeguards systems.³² The safeguards arrangements were put into force in May 1975 with the ratification by all the non-nuclear-weapon states of the Community. However, this has required the entry into force of the Commission Regulation 3227/76 which contained a detailed outline of the provisions by which the INFCIRC/193 could be implemented in the territories of the EURATOM Member States. The safeguards agreement required the states party to the Treaty to set up a State's System of Accounting for and Control of (SSAC) nuclear materials (paragraph 32), then EURATOM became the SSAC for the INFCIRC/193.

iii...IAEA Inspections.

The IAEA was entitled, by the terms of the INFCIRC/193, to carry three different types of on-site inspections in the nuclear installations of the EURATOM Member States: First, *ad hoc* inspections, as stated in Article 71, in order to: (a) *Verify the information contained in the initial report on the nuclear material ... and identify and verify changes in the situation* (b) *Identify and verify if possible the quantity and composition of nuclear material before its transfer out of or upon its transfer into the States except for transfers within the Community.* Secondly, routine inspections, as stated in Article 72, in order to: (a) *Verify that reports are consistent with records;* (b) *Verify the location, identity, quantity and composition of all nuclear material subject to safeguards....* (c) *Verify information on the possible causes of material unaccounted for [MUF], shipper/receiver differences and*

³¹Howlett, *EURATOM...*, *ibid.*, p. 137.

³²*Ibid.*, p. 151.

uncertainties in the book inventory. Finally, the third type of inspections allows the IAEA conduct special inspections, as stated in Article 73, in order to: (a) ... *verify the information contained in special reports; or (b) If the Agency considers that the information made available by the Community including explanations from the Community and information obtained from routine inspection, is not adequate for the Agency to fulfil its responsibilities .*

Therefore, while on the one hand, EURATOM would carry out its own inspections based on the terms of the EURATOM Treaty: on the other hand, the IAEA would make its own independent verification to ensure that EURATOM has done its job properly. Therefore, with the entry into force of the INFCIRC/193, the overall scope of the safeguards provisions differed from those readily established in the EURATOM Treaty. Specifically speaking, while the latter covered the entire nuclear fuel cycle from mining of uranium to the reprocessing of the spent fuel, the former did not cover these activities. Accordingly, it was necessary to amend the European Community Regulations to secure proper implementation of INFCIRC/193 in the EURATOM Member States. Regulation 3226/76 incorporated the necessary clauses to this end. Hence, the task of the inspectors, and the duties of the operators were adjusted to the NPT 'environment'. The inspection rights that were spelled out in the EURATOM Treaty (*..inspectors shall at all times have access to all places..*) were not covered by this regulation.

The IAEA and EURATOM, having gained experience over almost two decades by applying safeguards jointly, are now keeping up much smoother relations in comparison with the past. As David Fisher observed, "[o]n occasion, each agency tended to debate, with an almost theological intensity, the abstract principles to which it is attached. But by now, there is no doubt on either side that each is fully committed to the same objective in the non-nuclear-weapon states of the [EU] or that the other agency's operations are technically effective."³³ Now, the two agencies share, rather than duplicate, the routine safeguards operations. "On 28 April 1992, it was reported that the IAEA and EURATOM had in fact agreed to a new 'partnership approach. Under this agreement, their safeguards operations [are] more closely integrated and inspections [are] carried out 'on the principle of one-job-one-man'. They .. share analytical resources so as to reduce the number of samples to be taken and they .. seek to reduce human inspection by greater use of equipment. The new arrangement .. permit[s] each agency to draw its independent conclusions about compliance with the IAEA/EURATOM agreement."³⁴

³³David Fischer, 'Innovations in IAEA Safeguards to Meet the Challenges of the 1990s', in David Fischer, Ben Sanders, Lawrence Scheinman and George Bunn (eds.), *A New Nuclear Triad: The Non-Proliferation of Nuclear Weapons, International Verification and the International Atomic Energy Agency*, Southampton, Mountbatten Centre For International Studies, PPNN Study Three, September 1992, p. 33.

³⁴*Ibid.*, p. 34.

II...LATIN AMERICA.

1...Argentina and Brazil: From Rivalry to Cooperation.

The nature of the Argentine-Brazilian relations have been complex for about half a millennium. The territorial disputes between the Spanish and Portuguese colonial empires largely determined the fate of the relations. The deep rooted mistrust forged by the competition for the 'leadership' of South America has been one motivating factor on both sides to unfold their competition onto the international markets, particularly in the nuclear field. Both countries have long established nuclear energy programmes.³⁵ Argentina's nuclear programme began in the 1950s, and gathered pace in the 1970s when its first nuclear plant, Atucha I, began operation in 1974. Other construction plans followed with the nuclear installations Atucha II and Embalse. Argentina also developed indigenous gaseous diffusion capability for uranium enrichment. Brazil, on the other hand, pursued a 'twin-track' nuclear development policy based on indigenously produced fuel cycle facilities, especially ultra-centrifuge enrichment, and imports of nuclear technology.³⁶ And, in 1975 West Germany agreed to supply Brazil with reprocessing and enrichment technology as an incentive for purchasing nuclear reactors.³⁷ Actually, since the mid 1960s, though the rivalry survived between Argentina and Brazil, both countries had one issue of common interest. It was the universal effort to curb proliferation of nuclear weapons, which equally meant some restrictions for most of the countries' nuclear engagements. Such restrictions would presumably adversely affect these two rival states. Hence, Argentina and

³⁵The success of Argentine-Brazilian rapprochement in the nuclear field has elevated this issue once again high on the agenda of the scholarly research and articles, but this time to mention the prospects for collaboration, rather than rivalry. Until very recently, both countries were ranked within the group of "threshold states" together with India, Pakistan, Libya, Algeria, South Africa, and Israel. Fortunately, in line with Argentina and Brazil, some of these threshold states too, have denounced the nuclear option and adhered to the non-proliferation regime. For introducing the reader to the past events that have motivated Argentina and Brazil to "go nuclear", and the most recent series of events that have paved the way to robust cooperation, references will be made to a 'subset' of a plethora of articles and books available in these regards, such as: John R. Redick, Julio C. Carasales, and Paulo S. Wrobel, "Nuclear Rapprochement: Argentina, Brazil, and the Nonproliferation Regime", *The Washington Quarterly*, 18:1, pp:107 - 122; Paulo S. Wrobel, *Brazil - Argentina Nuclear Relations: An Interpretation*, unpublished manuscript, April 1994; John R. Redick, "Argentina-Brazil Nuclear Non-Proliferation Initiatives", *Programme for Promoting Nuclear Non-Proliferation*, Issue Review, January 1994, No:3; Virginia Gamba-Stonehouse, 'Argentina and Brazil', in Regina Cowen Carp (ed.), *Security With Nuclear Weapons ? Different Perspectives on National Security*, Oxford University Press for SIPRI, 1991, pp: 229 - 256; Marco A. Marzo, Alfredo L. Biaggio, and Ana C. Raffo, "Nuclear Co-operation in South America: The Brazilian-Argentine Common System of Safeguards", *IAEA Bulletin*, Vol.36, No: 3, 1994, pp: 30 - 35; Tom Zamaro Collina and Fernando de Souza Barros, "Transplanting Brazil and Argentina's Success", *ISIS Report*, Institute for Science and International Security, Rio de Janeiro, February 1995; John R. Redick, "Latin America's Emerging Non-Proliferation Consensus", *Arms Control Today*, Vol. 24, No: 2, March 1994, pp: 3 - 9; Jose Goldemberg and Harold A. Feiveson, "Denuclearization in Argentina and Brazil", *Arms Control Today*, Vol. 24, No: 2, March 1994, pp: 10 - 14; Darryl A. Howlett, 'Regional Nuclear Co-Operation and Non-Proliferation Arrangements: Models from Other Regions', in Darryl A. Howlett & John Simpson (eds.), *East Asia and Nuclear Non-Proliferation*, Papers from Twelfth PPNN Core Group Meeting, Japan, 28-29 November, 1992, pp: 63-71; Monica Serrano, *Common Security in Latin America: The 1967 Treaty of Tlatelolco*, University of London, Institute of Latin American Studies, Research Papers, 1992; Thierry Riga, *Une approche coopérative de la non-prolifération nucléaire: l'exemple de l'Argentine et du Brésil*, UNIDIR Research Paper, No: 29. 1994.

³⁶See, Darryl Howlett, *Regional Nuclear Co-operation...*, p. 66. See also, Thierry Riga, *Une approche coopérative...*, pp: 12 - 20.

³⁷See, John R. Redick *et al.*

Brazil had no alternative but to cooperate somehow to protect their common interest by acting in parallel, if not together, in international fora.³⁸ As the Tlatelolco negotiations continued (post 1964s), Argentina and Brazil increasingly found their positions in tandem, and contrary to the views of the majority of Latin American nations. Argentina and Brazil's shared objective became the mitigation of the more restrictive elements of Tlatelolco and the preservation of independence of their nuclear programmes from regional or international constraints. This represented the first step of an extended bilateral nuclear confidence-building process which, despite the traditional rivalry, linked the two nations against a commonly perceived enemy: the non-proliferation regime.³⁹ Therefore, when the West German deal was seen as a proliferation initiative by the US administration, the Argentine-Brazilian collaboration gained momentum. On the same account, the foreign ministers of Argentina and Brazil issued a joint communiqué calling for cooperation and technical exchange in the nuclear field. This was followed in 1979 by an important agreement establishing a framework for the resolution of the problems in the River Plate area.⁴⁰ This coordination opened the door for an across the board improvement in bilateral relations particularly in the economic sphere, but also in the politically sensitive nuclear area. In 1980, the two nations signed a small but symbolically important agreement (Corpus-Itaipu) for nuclear fuel cycle cooperation, which included a clause calling for systematic coordination of nuclear policy in all international fora. Consequently, collaboration in the nuclear field, rather than competition, was viewed as the best means to surmount the barriers represented by the inequitable non-proliferation regime.⁴¹ Major progress on opening up sensitive nuclear facilities, however, was not made until both countries elected democratic governments. Right after these elections Argentine authorities announced their country's capability to enrich uranium, but equally ensured their Brazilian counter-parts that this enrichment facility was intended only for peaceful purposes. With the democratic take-over of the regime in Brazil, both leadership agreed to strengthen the Corpus-Itaipu Agreement, declaring that mutual inspections of their nuclear facilities was their eventual goal. Hence, in November 1985 Argentina and Brazil signed the Joint Declaration of Foz do Iguacu leading to further agreements on economic cooperation and policy integration in the nuclear field.⁴² The two nations created a permanent committee on nuclear policy to promote technical and scientific cooperation. This agreement was followed by further joint nuclear policy declarations of Brasilia in 1986, Viedma in 1987, Ipero and Ezeiza in 1988,

³⁸It is indeed interesting to note that, Brazil was one of the forerunners of the idea of a nuclear-weapon-free zone in Latin America. At the XVII session of the United Nations General Assembly in 1962, it was the Brazilian delegation whom suggested for the first time such a zonal arrangement in Latin America. But the military coup in 1964, which produced two decades of military rule, has shifted Brazil's position to the one which opposed such regional or universal agreements. Their denial of adherence to the NPT was on the basis of the "discriminatory" nature of that agreement.

³⁹John R. Redick, *et al.*, p. 111.

⁴⁰During the long period of Spanish and Portuguese colonial empires, neither the clashes between them nor the concluding peace agreements succeeded in resolving the territorial disputes over the River Plate area, which is rich in water resources. Following independence in the early 1800's, Argentina and Brazil fought their last direct conflict in the River Plate region, and resulting 1828 peace treaty established a new buffer state, Uruguay. See, Redick, *et al.*

⁴¹Redick, *et al.*, pp: 111 - 112.

⁴²Marco A. Marzo, *et al.*,

and Buenos Aires in 1990. As Goldemberg and Feiveson observed, these achievements are due primarily to the return of democratic rule in both countries after decades of military governments.⁴³ In November 1990 Argentina and Brazil signed, at Foz do Iguacu, the Declaration on the Common Nuclear Policy of Brazil and Argentina. The significance of this declaration lies in the decision taken to establish a *Common System of Accounting and Control of Nuclear Materials (SCCC)* to verify that nuclear materials in all nuclear activities of both parties are used exclusively for peaceful purposes. After this declaration, the parties decided to start negotiations with the IAEA to conclude a safeguards agreement based on the SCCC. The two countries equally decided to take initiatives conducive to the full entry into force of the Treaty of Tlatelolco, including action relating to the updating and improvement of the text. The bilateral agreement implementing the Foz do Iguacu Declaration was signed in July 1991 in Guadalajara, Mexico, and entered into force the same year. With this agreement the *Argentine-Brazilian Agency for Accounting and Control of Nuclear Material (ABACC)* is established to administer and implement the SCCC covering an agreed set of nuclear materials. Both Brazil and Argentina have had safeguards agreements in force with the IAEA since the 1960s and 1970s. These INFCIRC/66 - type safeguards agreements dealt with specific cases of cooperation and did not cover the nuclear materials involved in each country's autonomous programmes. Those then fell under the full-scope safeguards established by the bilateral agreement, subject to the SCCC and verified and monitored by ABACC.⁴⁴

2...Basic Undertakings Under the Bilateral Agreement.

By signing the bilateral agreement the Argentina and Brazil agreed to use the nuclear material and facilities under their jurisdiction or control exclusively for peaceful purposes. To this end, they agreed to *prohibit and prevent in their respective territories, and abstain from carrying out, promoting or authorizing, directly or indirectly, or from participating in any way in: (1) the testing, use, manufacture, production or acquisition by any means of any nuclear weapon; and (2) the receipt, storage, installation, deployment or any other form of possession of any nuclear weapon.* Bearing in mind that at present no technical distinction can be made between nuclear explosive devices for peaceful or military purposes, both countries also agreed to *prohibit and prevent in their respective territories, and to abstain from carrying out, promoting or authorizing, directly or indirectly, or from participating in any way in, the testing, use, manufacture, production, or acquisition by any means of any nuclear explosive device.* As a basic verification undertaking, the parties agreed to submit to SCCC all the nuclear materials in all nuclear activities under their jurisdiction or control.⁴⁵

⁴³Jose Goldemberg and Harold A. Feiveson, *Denuclearization in Argentina and Brazil*..

⁴⁴Marco A. Marzo, *et al.*, p. 30.

⁴⁵In addition to the bilateral agreement, the principal documents defining the SCCC are the General Procedures, and the Implementation Manuals for each category of installations. The General Procedures set out the basic criteria and requirements of the SCCC. Chapter 1 contains the criteria and conditions for the starting point of, exemptions from, and termination of safeguards. It also includes general rules for establishing an appropriate level of accountability and control of nuclear materials. Chapter 2 lays down the requirements at the State level for the licensing of nuclear facilities or other locations and the requirements regarding any relevant information for the SCCC, such as the records, the physical inventory, and the traceability of measurement systems. Chapter 3

3...Organizational Framework of ABACC.

The bilateral agreement gives ABACC the status of an international organization, and its officials that of international civil servants. The organs of ABACC are: the Commission, a governing body consisting of four members empowered to issue the necessary regulations; and the Secretariat, its executive body. The Secretariat is located in Rio de Janeiro, and the position of Secretary alternates annually between an Argentine and a Brazilian. ABACC's technical staff consists of equal number of Argentines and Brazilians. Most of its missions will use personnel drawn from a main pool of about 60 members of the Argentine and Brazilian nuclear agencies, or state-related institutions. The principal functions of the Commission are to: monitor the functioning of the SCCC; supervise the functioning of the Secretariat; prepare a list of qualified inspectors from among those proposed by the Parties; inform the Party concerned of any anomalies which may arise in the implementation of the SCCC; and inform the Parties of any non-compliance with the agreement. Any discrepancy or potential anomaly detected through inspections or evaluation of reports and records must be reported by the Secretariat to the Commission, which must call upon the Party concerned to correct the situation. Consequently, the Secretariat has to perform the necessary activities to implement and administer the SCCC; receive and evaluate the reports; inform the Commission of any discrepancies; and act as the representative of the ABACC. By the late 1992, ABACC had reportedly received initial inventories of all nuclear material and design informations for all nuclear facilities in the two nations. This was verified by on-site inspections, in particular at the Argentine gas diffusion and Brazilian gas centrifuge enrichment facilities. These inspections were due to the end of 1993 and, according to Argentine sources, this was accomplished.⁴⁶

4...The Quadripartite Agreement.

The Argentine and Brazilian authorities were well aware that concluding bilateral agreements, though they were very significant steps towards full adherence to the non-proliferation regime, were not enough to assure the international community. Therefore, their confidence-building process that had been under way for about a decade had to be institutionalized. Hence, the IAEA is integrated into this process to further these steps. Accordingly, on December 1991, the Quadripartite Agreement was signed by Argentina, Brazil,

describes procedures for implementation of the SCCC at the State level. The provisions relating to the implementation of the SCCC by ABACC, are contained in Chapter 4. This includes specifications for relevant information to be provided to ABACC such as: Design Information Questionnaires (DIQ); Inventory Change Reports (ICR); Material Balance Reports (MBR); Physical Inventory Listing (PIL); and notification of transfers out of or between States Parties. Chapter 4 also describes in general terms the purposes of inspections and discusses access for inspection and notification about inspections. The general provisions for the evaluation of shipper-receiver differences and of Material Unaccounted For (MUF) are also included in this Chapter. The remaining Chapters contain provisions relating to ABACC inspectors in Chapter 5; Routine Communications in Chapter 6; Document Revision in Chapter 7; Transitional Arrangements in Chapter 8; and finally, Definitions in Chapter 9. There are also: Annex I containing accounting report forms and instructions for their use; and Annex II, containing the Basic System of Routine Communications.

⁴⁶By mid-September 1993, ABACC had reportedly undertaken inspections in slightly less than half the total of sixty nuclear facilities in both countries. See, John R. Redick, *Argentina-Brazil Nuclear Non-Proliferation Initiatives...*

ABACC, and the IAEA. This Agreement provides the application of *full-scope safeguards* by the IAEA in cooperation with ABACC, to all nuclear materials and installations subject to bilateral and international agreements. In practice, the Quadripartite Agreement is modelled on the EURATOM-IAEA safeguards agreement, and is therefore equivalent to verification under the NPT. Accordingly, ABACC is given the principal safeguarding responsibility, collecting data and carrying out inspections. The IAEA, on the other hand, has the right to conduct inspections in each nuclear facility, but in practice, works in tandem with ABACC to inspect sensitive parts of the fuel cycle such as uranium enrichment activities.⁴⁷ Among the crucial rights given to the IAEA by the Quadripartite Agreement, Article 14, outlining the *Measures in Relation to Verification of Non-Diversion*, affords the IAEA with important *non-compliance* powers. If a state obstructs safeguards, by denying access to an inspection team for example, the IAEA Board can order it to comply. If the state continues to obstruct the safeguards, the Board can then place the situation with the United Nations Security Council, by informing that the IAEA is no longer able to verify the absence of diversion. The Protocol to the Agreement also establishes a *Liaison Committee*, similar to an arrangement between the IAEA and EURATOM, to act as a channel for assessing safeguards concepts and implementation issues. The Committee involves all four Parties to the Agreement and meets annually or at times unusual events occur.⁴⁸

III...IMPLICATIONS of EURATOM and ABACC for an NWFZ/ME.

The effective implementations of the safeguards procedures of EURATOM and ABACC suggest that, if a safeguards system is to be acceptable to the potential members of a zone, its inspections procedures should be far more rigorous and intrusive than the existing IAEA safeguards inspections under the NPT. The overall set of verification provisions should enable the inspectors of the regional verification organization to have access to all places at all times to carry out their job during the *ad hoc*, routine and challenge inspections. Furnishing regular and detailed information about the operations in the facilities, and the transfers of nuclear materials out of and into the states should be among the basic undertakings of the member states. Moreover, the regional organization should have the sole ownership right of the fissile materials within the zone. Likewise, the regional organization must have the authority and the capacity to effectively sanction the violators.

The Argentine-Brazilian rapprochement and the resulting agreements have taken these two countries from the ranks of 'infamous hold-outs' to the side of the 'noble proponents' of the nuclear non-proliferation regime. One implication of this is that, furthering hostilities does not serve the well-being of countries, and that in most cases, heavy spending on armament ruins the

⁴⁷The Quadripartite Agreement gives the IAEA the right to conduct *special inspections* under the same conditions as specified in paragraphs 73 to 77 in the model agreement, namely the INFCIRC/153. Upon the reports produced by ABACC, either at the request of any of the governments or on the basis of ABACC reports that nuclear material may be missing, or if the IAEA decides that ABACC's information is inadequate, such special inspection may be conducted.

⁴⁸Darryl Howlett, *Regional Nuclear Co-operation ...*, p. 67

economies.⁴⁹ The severe economic crises that the two Latin American states have experienced in the early 1980s made their leadership 'think twice' before sustaining the nuclear option.⁵⁰ Secondly, *democratization* appeared as an important aspect in the prospects of the relations of the two states which was also essential for *transparency* in their relations, and building confidence between them.⁵¹ Third, creation of a *region-specific non-proliferation regime* endowed with stringent and credible verification provisions may prove feasible for those countries which either anticipate the existing non-proliferation regime as discriminatory in nature, or not trust in its verification provisions at all. With some sort of a special arrangement, this region-specific regime may be integrated into the universal non-proliferation regime without causing any damage to the regional states' foreign policy endeavours. Hence, both EURATOM and ABACC have independent structures and mandates from that of the IAEA.⁵² Moreover, the Argentine-Brazilian experience suggests the importance of certain processes which significantly contributed to creating a climate of mutual confidence. These included the highly public reciprocal head-of-state visits to nuclear installations, advance notification of significant nuclear developments, a long pattern of technical exchanges producing considerable rapport between the nuclear energy commissions, and the creation of a standing committee to discuss nuclear policy issues. These actions preceded and ultimately paved the way for substantive bilateral, regional and international non-proliferation agreements.⁵³

IV...MIDDLE EAST.

1...Suggestions for the Organizational Setting of an NWFZ/ME.

The ways and means of using nuclear energy solely for peaceful purposes in Western Europe and Latin America have prompted certain proposals for the Middle East in the same regards. Therefore, in this part several suggestions will follow the suit so that the above mentioned verification provisions of two different regional arrangements could be rearranged within the context of an NWFZ/ME. The reader should beforehand make clear that a great deal of the following proposals are presented in some detail⁵⁴ that are thought to be necessary for the

⁴⁹However, the incentive to acquire a nuclear bomb was also due to the desire of some countries to attain 'low-cost strategic equilibrium' against their adversaries. Therefore, 'going nuclear' was seen by them as a feasible alternative.

⁵⁰In the Middle East, lately, even the rich Gulf States are reportedly undergoing serious economic crises, particularly since the Gulf War of 1991. Therefore, it might be wise to remind the leaderships in the Middle East a Turkish saying as that, "whatever loss one avoids is a profit".

⁵¹Even incremental moves towards more democratic state structures in the Middle East will undoubtedly contribute to resolve the great many problems of the states in the region.

⁵²The creation of a *tailor made* regional organization for the states in the region may fit these states much better than the *fixed model* of a universal organization. By conferring some specific rights and duties to a regional organization, the states in the Middle East may very well avoid, to a very high extent, the intrusion of the international safeguards inspections that they used to complain in many occasions. In other words, as Dr. Jan Prawitz suggested in his comments on the final draft of this paper, effective and reliable institutions of the zone regime would make direct outside verification demands less necessary for cooperating extra-zonal states, and this would be an attractive side-effect for the zonal states.

⁵³John R. Redick, *et al.*,

⁵⁴Such as suggesting, in the following paragraph, seven seats in the Council, three of which proposed to be permanent. The number of seats and/or the permanency of several states are such issues that have to be dealt with, and agreed upon, in a general conference with the participation of all the states concerned.

sake of illustrating the organizational outline. Further configurations of the organizational framework of an NWFZ/ME are certainly possible. With these in mind, establishment of two institutions is deemed essential.

i...Council.

First a *Council* endowed with the necessary authority and the responsibility to execute the terms of the zonal agreement is suggested. To fulfil this task, the *Middle East Council for Controlling Atomic Energy* (MECCAE) is proposed.⁵⁵ The Council, namely MECCAE, is suggested to consist of a representative number of seats, preferably seven, with one permanent seat, with no right of veto, for Iran, Israel, and Egypt, regarding the non-Arab identities and significant nuclear engagements of the former two, and the political weight of the latter in the Arab world and in the NWFZ issue. The remaining four seats may be distributed based on some geographical criteria agreed upon in a General Conference. The term of the MECCAE members may be three or four years. The elections for the four non-permanent seats may be so arranged that their holders alternate among different Arab States at the end of each term. The decisions of MECCAE concerning compliance/non-compliance disputes, and the decisions upon the requests of any state party on non-routine inspections to be conducted in any other state party, should be taken by a majority of four out of seven (equivalent to a ratio slightly more than 57%).⁵⁶ To execute verification, MECCAE should designate a specific number of inspectors (a pool) each chosen unanimously so that, at a later stage, no state party to the NWFZ/ME subject of a routine or non-routine inspection should object to the inspectors and cause a serious delay in inspections. For each inspection, whether routine or non-routine, in each inspection team, MECCAE should assign at least one inspector being the national of the inspected state.⁵⁷

ii...The Supply Agency.

As another important institution establishment of a *Supply Agency* is suggested. The Agency should have the exclusive right to hold the special fissile nuclear materials of the states. Therefore, special fissile material should become the property of MECCAE. The Supply Agency should keep records concerning the value and the inventory of special fissile materials left to its possession, and should submit regular reports to MECCAE, so as to ensure that no such

⁵⁵The author's sole purpose in associating the name of the Council with the name of a city which is of utmost importance for, and the most respected in the Muslim world, is to make a virtuous start, and emphasize that the guiding principle of the zonal agreement will be mutual 'respect'. Throughout this part, MECCAE will thus denote the proposed Council.

⁵⁶A similar procedure is agreed upon in the Chemical Weapons Convention of 1993, where each State party to the Convention can request a 'challenge' inspection in the territory of another State party, and the refusal of such a request is due to a 3/4 majority of votes in the Council of the OPCW.

⁵⁷The rationale behind this suggestion is to leave no room for objection of the inspected states to the outcomes of inspections, and to eliminate the fears that the inspectors may be engaged in some other 'business' (e.g., industrial espionage) rather than carrying their proper inspection tasks. Those states where no qualified inspectors exist may apply to the IAEA to receive technical assistance of the Agency in order to train their scientist as inspectors. The total number of inspectors in a team, and the number of nationals of the inspected state in the team should be determined by MECCAE on an *ad hoc* basis regarding the size of the task to be carried out.

material is removed from the Agency. The Supply Agency should also have the optional right of ownership of non-direct use (source) nuclear material⁵⁸. Detailed records must be kept about these transactions as well.⁵⁹

2...Basic Undertakings within the NWFZ/ME.

Since, the primary purpose of establishing an NWFZ/ME is to promote peaceful uses of nuclear energy as well as providing the states in the region with the necessary and sufficient assurances, the states should agree to undertake several obligations. The first fundamental undertaking would be to declare that the states will use nuclear energy exclusively for peaceful purposes. Another fundamental undertaking would be to agree not to attack against nuclear installations and facilities in the states party to the NWFZ/ME.⁶⁰ Therefore, states party to the NWFZ/ME should refrain from undertaking, encouraging or participating in, directly or indirectly, any action aimed at causing the destruction of, or damage to, any nuclear installation or facility in other states party.⁶¹

Additionally, the states should certify that they won't receive or seek any assistance in the manufacture or acquisition of nuclear explosive devices, or conduct any research relating to nuclear weapons or tests of nuclear explosive devices. Moreover, the states should undertake to place under the control of the Supply Agency, as of the date of entry into force of the Treaty, all their special fissile materials already produced and stockpiled, and accept all routine and non-routine safeguards inspections to be conducted at all times at any place on all their nuclear materials and installations, by either MECCAE or the IAEA inspectors assigned by MECCAE both for routine and non-routine inspections.⁶² For proper implementation of safeguards inspections and verification the states should declare all their initial inventories relating to their nuclear materials, and provide exact locations and complete informations on the installations

⁵⁸In that case the Supply Agency can be considered to act as a 'bank' on which the states may deposit their assets that can be withdrawn at any time

⁵⁹The physical protection of nuclear material then becomes the most important issue. The unprecedented increase in nuclear material trafficking in the most recent years, particularly since the disintegration of the Soviet Union, and the fears arising from the probability of procurement of nuclear explosive devices by terrorist organizations, bring to the fore the necessity of proper implementation of the Convention on the Physical Protection of Nuclear Material, of March 1980 which is in force since February 1987. References can be made to this Convention while deciding upon the mandate of the Supply Agency.

⁶⁰Regarding the past experience of 1981 when Israel devastated the Osiraq reactor in Iraq, such an undertaking would equally stand as a confidence-building measure among the zonal states.

⁶¹In the text of the "Agreement on the Prohibition of Attack Against Nuclear Installations and Facilities Between the Republic of India and the Islamic Republic of Pakistan", the term 'nuclear installation or facility' includes nuclear power and research reactors, fuel fabrication, uranium enrichment, isotopes separation and reprocessing facilities as well as any other installations with fresh or irradiated nuclear fuel and materials in any form and establishments storing significant quantities of radio-active materials. See, John Simpson & Darryl Howlett (ed.), *Briefing Book, Volume II, Treaties, Agreements and other Relevant Documents* (Third Edition), Programme For Promoting Nuclear Non-Proliferation, Southampton, Mountbatten Centre for International Studies, 1995, p. K6. Regarding both the past engagements of some of the states in the region and their already existing nuclear infrastructures, and the basic undertakings enlisted in the treaty of an NWFZ/ME, a similar definition may apply to the Middle East, too.

⁶²In order to not to cause any delays that may result from visa or residence permit requirements for each of the inspectors approved by MECCAE, all the states party to the NWFZ/ME should make necessary arrangements in these respects (multiple entry for short or long periods, and total freedom of movement within the states).

where they conduct their nuclear activities (or used to conduct in the past). The states should also furnish regular reports including complete information, about all their imports from and exports to states either party or non-party to the NWFZ/ME, relating to all nuclear material, technology and equipment, and reports including the data relating to the operation of reactors and changes in the quantities and composition of nuclear materials.

2...Verification Procedures.

For verification of the basic obligations of the states, a "*Common System of Accounting and Control of Nuclear Materials*" (CSAC)⁶³ should be established. An Additional Protocol should thus be signed by the IAEA and MECCAE on behalf of the states party to the NWFZ/ME. Regarding that there should be mainly two types of inspections, namely the routine and non-routine inspections, the rights and responsibilities of the two institutions to conduct these inspections should be clearly defined.

i...Routine Inspections.

For routine inspections, MECCAE is suggested to have the primary responsibility to administer and implement CSAC, and to verify the informations made available by the states. During these routine inspections, the IAEA inspectors may *only* observe the verification process.⁶⁴ The purpose of observations by the IAEA inspectors should be to allow them to make sure that the verification process is being properly accomplished by the MECCAE inspectors.

ii...Non-Routine Inspections.

For non-routine inspections, two categories of requests are envisaged: First, either the IAEA may have a request to conduct a non-routine inspection, in case: (a) the IAEA inspectors are not satisfied throughout their observations with the verification process implemented by the MECCAE inspectors; (b) any information is provided by any of the Permanent Members of the United Nations Security Council relating to suspected activities of a state party to the NWFZ/ME; or (c) just for the sake of operationalizing the IAEA's principle to deter the states against possible diversion of significant quantities of nuclear material by the risk of early detection. Secondly, the states party to the NWFZ/ME may request a non-routine inspection to be conducted in any other state party to the NWFZ/ME. Such a request should be discussed in MECCAE without delay, and a decision should be taken with a majority of four out of seven votes. In case a decision taken to conduct a non-routine inspection, the MECCAE inspectors should carry out this task without delay.

⁶³In this paragraph, for the sake of saving from time and space, and for simplicity, there won't be any detailed presentation of CSAC. Since, this system is almost similar in each of EURATOM and ABACC cases which were modelled upon the relevant paragraphs of the INFCIRC/153, and which has been mentioned in large in the previous paragraphs.

⁶⁴The inadequacy of financial resources, and lack of sufficient number of qualified personnel espoused by the IAEA authorities, makes one to consider the criterion of efficiency in allocating financial and human resources of the IAEA. Among others, this is one important reason for suggesting the routine inspections to be implemented solely by the MECCAE inspectors.

No *quota* is suggested for the states to accept non-routine inspections. One reason for this is the imbalances amongst the levels of developments of nuclear infrastructures and know-how capacities of the states in the region. Therefore, a common quota may not be adequate or applicable to each state and the installations in these states. Some of the installations may require almost a continuous process of verification. A second reason is that, since it is in the authority and responsibility of MECCAE to decide upon the requests of the states whether to conduct a non-routine inspection or not, for the sake of fostering confidence-building and the credibility of the regional organization, the decisions of MECCAE should be respected, and should be considered satisfactory.

During the non-routine inspections upon the request of the member states, the IAEA inspectors may either observe the MECCAE inspectors, or they may conduct their independent inspections. If the latter happens, the results of these independent inspections should be compared with each other.

3...Non-Compliance & Enforcement Measures.

In case of violation of the terms of the Treaty, two categories of measures are suggested. First, regarding the level of seriousness of violation, MECCAE may itself apply a set of measures with an equivalent level of severity. Therefore, MECCAE may either: (a) warn the violating state publicly; (b) withdraw special benefits such as financial and technical assistance; or (c) withdraw totally or partially the source materials in the installation, and freeze the rights of the states over their source materials kept in Supply Agency. Secondly, even if when the above measures taken, the violating state still resists to comply with the terms of the Treaty, MECCAE should bring the case to the attention of the IAEA. Further measures will then be in the responsibility of the IAEA. Then, the Board of Governors of the IAEA should discuss the issue upon the report of the Director General of the Agency. The Board then: (a) should call upon the violating state to remedy forthwith any non-compliance which it finds to have occurred, either by relying on the information provided by MECCAE, or by taking independent initiative; (b) should report the non-compliance (in case of extended denial by the violator) to all the Members of the Security Council and General Assembly of the United Nations.

CONCLUSION.

No two regions in the world look alike geographically or culturally. Therefore, no two regions can be expected to have identical characteristics in political, military or economic terms, either. Nevertheless, these differences should by no means undermine the importance of the lessons that one can draw from distinct case studies. Hence, the main theme of this chapter is based on such a deduction. It goes without saying that the Middle East has more dissimilarities in many respects, rather than similarities, with Western Europe and Latin America. However, such issues as the verification provisions of divers regional nuclear non-proliferation agreements

exhibit many similarities. The scope of these provisions is usually a reflection of the expectations and the intentions of the parties. These expectations and the intentions themselves, are the repercussions of the characteristics of the regions. Therefore, these characteristics do have an impact on the scope of the region-wide verification provisions. Incorporating these regional characteristics into regional agreements may thus require additional verification provisions, and additional rights and obligations conferred to the regional institutions. The verification provisions and the institutions introduced in this chapter for a Middle East NWFZ are attempted to be in line with such a reasoning. Yet, these provisions and the institutions should be the subject of a more comprehensive study. When such a study is seen feasible by all the parties concerned in the Middle East, then this chapter can be said to have attained its goal.