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

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

*Jan Prawitz and James F. Leonard*



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## Preface

This study is part of the UNIDIR project on "Confidence-Building and Arms Control in the Middle East". Early considerations within the project led to the conclusion that analyses of confidence-building, non-offensive defence and cooperative security, primarily defined in conventional force terms, would be difficult to undertake without also addressing the problems associated with weapons of mass destruction. It was understood that as long as one nuclear weapon was assumed to exist somewhere in the region, much attention would tend to be focused on that one weapon.

A natural point of departure was then to undertake a separate study of the concept of a nuclear weapon-free zone in the Middle East, long since unanimously supported by the UN General Assembly. In 1990, it was accepted that the scope of the concept should be widened to include all weapons of mass destruction.

The study begins by an examination of relevant parts of global arms control regimes, the most important one being the nuclear Non-Proliferation Treaty (NPT). Today, several such regimes are well enough established to constitute pillars for the drafting of regional treaties. Regional arrangements may, in turn, become important complements to the global regimes.

An account is made of the experiences of zonal arrangements accumulated so far, i.e. in Latin America, the South Pacific, Africa and South East Asia. Two United Nations studies summarized those experiences in 1975 and 1985. In 1990, a third UN study concentrated on the Middle East.

This study accounts for the lessons learnt in the form of a brief "zone theory" and applies the emerging concepts to the Middle East. The "theory" suggests a multifaceted regime composed of many "building blocs" relevant to the region. Main regime measures would be the non-possession by zonal states of prohibited weapons, the non-deployment of such weapons within the zone by any state, and the non-use or non-threat-of-use of prohibited weapons against targets in the zone. The study could be considered a follow-on to the 1990 UN study.

That far, the study is theoretical and static - in a sense, a handbook of experiences and lessons from zonal arrangements to date. The next part deals with the dynamic issue of going from here to there, analyzing sequences of steps and building processes within the ongoing general peace process that would eventually lead to the establishment of a zone free of weapons of mass destruction in the Middle East.



## Annex

### EURATOM & ABACC: Safeguard Models for the Middle East?

Mustafa Kibaroglu \*

#### Introduction

The danger of proliferation of weapons of mass destruction has been one of the principal causes of instability in the Middle East. Though there have been instances in which chemical weapons have been used already, luckily no explicit use or testing of nuclear devices has ever taken place in the region<sup>1</sup>. Nevertheless, Israel is strongly believed to have stockpiled atomic bombs in "its basement". The official stance of the Israeli authorities against such allegations has been neither the denial, nor the acknowledgement of the existence of nuclear weapons among the military arsenal. This strategy is referred to as the "policy of ambiguity" or "opaqueness"<sup>2</sup>. However, in order to build confidence among states and to promote

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<sup>1</sup> The preliminary records on the use of chemical agents, both in continental Europe and the Middle East, date back to the First World War. 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), the use of chemical weapons was extensively documented by UN investigations. For detailed information on this issue see, Peter Herby, *The Chemical Weapons Convention and Arms Control in the Middle East*, Oslo: Falch Hurdigrayk as, for PRIO, 1992.

<sup>2</sup> According to Eitel 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, Eitel Solingen, "The Domestic Sources of Regional Regimes : The Evolution of Nuclear Ambiguity in the Middle East", *International Studies Quarterly*, June 1994, 38 : 305-337. For more information about "opaqueness" see,



peace in the Middle East, transparency is essential. Only then is the removal of all weapons of mass destruction from the region likely to materialize.

According to a study on the security considerations of the states in the Middle East, the authorities of the states concerned perceive the existence and the danger of proliferation of weapons of mass destruction as a growing threat.<sup>3</sup> This perception has been the subject of successive declarations by the officials of these states.<sup>4</sup> Although the modalities suggested for overcoming that threat exhibit differences, the various authorities share a common view regarding the necessity of dealing with this threat within the context of a Zone Free of Weapons of Mass Destruction in the Middle East (ZFWMD/ME).<sup>5</sup> However, other questions need

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 a survey of Israeli nuclear engagements see, Seymour M. Hersh, *The Samson Option: Israel's Nuclear Arsenal and American Foreign Policy*, New York, Random House, 1991.

<sup>3</sup> The author, during his research at UNIDIR, had access to the drafts of the Research Paper on National Threat Perceptions, commissioned by UNIDIR to several experts from the region. See, *National Threat Perceptions in the Middle East*, UNIDIR Research Paper N° 37, 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.

<sup>4</sup> For the official standpoints 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.

<sup>5</sup> Indeed, a proposal, co-sponsored by Iran and Egypt to establish a NWFZ in the Middle East was tabled in 1974, during a meeting of the United Nations General Assembly, and has been adopted as a UNGA Resolution every year since. Though the same Resolution has been adopted unanimously ever since the beginning of the 1980s (with Israel voting in favour), no substantial achievements

to be answered first. Indeed, on one side, the Arab states and Iran point to the existence of universal conventions and treaties concerning 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 underline the inefficiency and insufficiency of the existing universal nuclear non-proliferation regime. Their principal argument is that the universal standard safeguards procedures of the IAEA have proven incapable of disclosing the Iraqi clandestine nuclear weapon program. Thus, Israel's official stance vis-à-vis an adherence to the NPT is definitely negative. This stance notwithstanding, Israel endorses the idea of a ZFWMD/ME and emphasizes the feasibility of a regional approach, provided the zonal agreement incorporates far-reaching verification provisions<sup>6</sup>. Under these circumstances, a middle ground between the parties to the dispute is expected to be found by establishing a Nuclear Weapon Free Zone (NWFZ/ME) as the first step towards the creation of a ZFWMD/ME. The NWFZ/ME agreement is thus suggested to be endowed with effective verification provisions, and also to be linked to the universal nuclear non-proliferation regime.

Two such regional co-operation and non-proliferation arrangements already exist, namely EURATOM<sup>7</sup> and ABACC<sup>8</sup>, from which lessons can be drawn for the Middle East. The significance of EURATOM stems principally from its enduring safeguards procedures which were carefully designed to be equally acceptable to the EURATOM member states as well as to the United States and Canada<sup>9</sup>. Yet, strong criticism against EURATOM and its safeguards provisions was voiced during the Cold War period on the part of the Eastern Bloc countries. On several occasions, the representatives of these states declared EURATOM

have been made in the following years. However, a proposal to establish a ZFWMD in the Middle East, introduced by the Egyptian President Husni Mubarak, has provided a new impetus to the efforts to free the region of all weapons of mass destruction.

<sup>6</sup> Moreover, a *conditio sine qua non* of the Israeli officials has been 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.

<sup>7</sup> European Atomic Energy Community.

<sup>8</sup> Argentine-Brazilian Agency for Accounting and Control of Nuclear Materials.

<sup>9</sup> EURATOM 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, nor short of natural uranium from Canada.



safeguards nothing but "self-policing among friends"<sup>10</sup>. Nevertheless, it should be remembered that these EURATOM "friends" had in history's course traditionally been considered "bloody foes". Therefore, EURATOM actually was seen, both by its member states and their Western allies, as a means of leverage to promote co-operation and enhance peace and security in Western Europe.

Similarly, in Latin America, two rival states, both in nuclear research and on the nuclear market, namely Argentina and Brazil, have come to terms with their mutual suspicion, which had lasted for decades. The two states opened their highly secret nuclear facilities to mutual inspections, as well as to the universal inspections of the IAEA. Ever since, a high degree of confidence has existed on both sides. This regional arrangement in the nuclear field has been considered as leverage for further co-operation between the two rival states<sup>11</sup>.

This may give useful hints about confidence-building efforts and their possible favourable consequences for the Middle East. This annex will therefore analyze the 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 are useful in order to inform the reader about how the characteristics of these regions have been reflected and transposed in reliable, effective and long-lasting regional agreements. Then, the far-reaching and stringent safeguards procedures of these two institutions will be highlighted. Likewise, insights will be given into the possible peaceful uses of nuclear energy in environments pervaded by mistrust and hostility, as well as into how further co-operation may be served. The implications of the Western European and the Latin American experiences for a Middle-Eastern NWFZ will then be analyzed. After this analysis, proposals regarding the nuclear non-proliferation initiatives for the Middle East will be advanced.

<sup>10</sup> The 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.

<sup>11</sup> According to Professor Paulo S. Wrobel of the Pontifícia Universidade Católica do Rio de Janeiro, both the Argentine and the Brazilian authorities were well aware that co-operation in the nuclear field would be an important and effective step towards future and more fruitful co-operation 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.

## I. Western Europe

### 1. Emergence and Evolution of the EURATOM Treaty<sup>12</sup>

In this century, the two World Wars in Europe had devastating effects, costing millions of lives and destroying treasures. Politicians, scientists, scholars, in short, all of the personalities concerned in the various fields and strata among the different peoples of Europe, felt the urge to find a way to put an end to the hostilities between the states. It became their aim to promote peace and friendship on the continent.

Due to the fact that the "war machine", or the "armoury", was essentially based on steel, iron and coal, it was thought that the supervision of these basic elements would eventually help keep the development of the actual "armouries" under control. This conviction, among others, gave way to the emergence of the European Coal and Steel Community (ECSC) in 1950, of which France and Germany were the principal actors. Hence, the idea of a "united Europe" came about in practice with the ECSC.

However, those same years had already witnessed the appearance of an unprecedented weapon, namely the atomic bomb, developed and used by the United States. This weapon technology was bound to spread, in one way or the other, because of the never-satisfied "appetite" and curiosity of the scientists<sup>13</sup>. Hence, the same Europeans who had somehow found a way to control the "war machine" had again to find a way to prevent any further spread of this "brand new" scientific discovery. The Continent was fertile ground for science and technology. Accordingly, the idea of "atoms for peace" had to go beyond mere rhetoric. What would the Germans do with an atomic weapon, given what they had done without such a weapon? The European Atomic Energy Organization (later EURATOM) was created in such a frame of mind.

Nevertheless, giving birth to EURATOM was not an easy process politically, nor a straightforward one technically. EURATOM had to harmonise the dissimilar

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

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



and somewhat conflicting interests of various states, both inside and outside the region. France, in particular, had "nuclear ambitions" on the one hand, and was equally committed not to leave the "floor" to West Germany in the nuclear field. The latter aim of France coincided with that of the other European states, the United States and the Soviet Union. This mutual goal notwithstanding, the French determination to "go nuclear" was not at all accepted by the United States, nor by the Soviet Union. However, it was clear that unless France gave its consent, no talk about an European institution to control the further spread of nuclear weapons would be possible, nor would West Germany come under effective and close scrutiny. This was a "trade-off" for the United States, which finally culminated in generous US support towards EURATOM. But a similar "trade-off" was also the case with France. It would, indeed, have been very difficult for France to develop its embryonic nuclear research programme in a relatively short time, unless the United States supported the idea of EURATOM, politically and technologically.

As a result, the parties agreed that this European institution had to be endowed with stringent verification provisions. The degree of stringency had to meet US standards, otherwise the US inspectors themselves would have had to carry out inspections of the European nuclear installations. The Europeans wanted to avoid this at all costs<sup>14</sup>. Concomitantly, the IAEA was in the process of establishing its global safeguards system, and there was concern that the EURATOM system might undermine this objective<sup>15</sup>. 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, it became difficult for the other nations to agree to nuclear transfer terms more rigorous than those imposed upon Euratom<sup>16</sup>. However, the US support was

<sup>14</sup> The French, in particular, always considered such US involvement as an interference in their sovereignty.

<sup>15</sup> 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 Nov., 1992, pp: 63-71.

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

secured, and much of this was due to the Final Report of the Conference convened at Princeton University in 1956<sup>17</sup>.

The Report listed the advantages which would accrue for the United States if EURATOM adopted a strict control system. According to the Report, these advantages were mainly three-fold. First, Western Europe would probably become the most important area of nuclear power development<sup>18</sup>, apart from the United States and the Soviet Union. Second, a model characterized by a mechanism of tight international control within an area, even limited, could set an example for the evolution of a tight universal system among nations. Third, the United States would be relieved of the necessity of inserting itself actively, through the terms of

<sup>17</sup> The political agenda in the mid-1950s was dictated by issues relating to the security of Western Europe, the NATO alliance, and the Cold War. While the US authorities were willing to foster European integration, on the one hand, they were equally dubious about the extent of the evolution of this integration. They did not wish for a challenging concept of 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 centres, either under the auspices of universities, or as independent foundations, mandated to carry out such strategic studies. Indeed, the pioneers of these centres 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 openings the United States should make towards EURATOM. Among the participants to the conference, chaired by Klaus Knorr, were important figures from the US State Department and the US Atomic Energy Commission.

<sup>18</sup> By investing in nuclear industry and nuclear research, not all the states of Western Europe actually 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 became known as the *Benelux Memorandum*, within the fora of the ECSC, calling for a closer European unity, based on measures designed to promote a functionalist integration in the area of nuclear power. A concomitant attempt to promote nuclear co-operation 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 discussions on the modalities of a European organization in the nuclear field, it was repeatedly stressed that the establishment of a common atomic organization would serve as an instrument to reduce the gap between the domestic energy supplies and the increasing demands 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.



its bilateral program, in the issue of control in that part of the world<sup>19</sup>. In a way, the 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<sup>20</sup>. Therefore, for the US authorities, the idea of supporting the European proposal seemed interesting, especially since the 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 had been put forth at the time of the Acheson-Lilienthal Report and the Baruch Plan were enshrined in the EURATOM safeguards provisions. Therefore, these provisions were like an *American cloth designed à la mode 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,<sup>21</sup> which is comprised of 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 had a track record in nuclear regulation. What is worth noting about all of these ideas is that they were broadly representative of the entire spectrum of safeguards developed 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.<sup>22</sup>

<sup>19</sup> Under the system then envisaged, the United States could depend on the French to watch the Germans, on the Germans to watch the French, and on 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.

<sup>20</sup> Mostly due to the Indian opposition (and to the Soviet to some extent), the United States had faced difficulties in getting an agreement in the IAEA Board of Governors on an effective safeguards system.

<sup>21</sup> The EURATOM Treaty was signed on 25 March 1957 in Rome, initially by Belgium, France, Luxembourg, the Netherlands, F.R. Germany, and Italy. On the same date, the European Economic Community (EEC) was also established in Rome.

<sup>22</sup> Darryl A. Howlett, *EURATOM*, p. 87.

Accordingly, Article 77 of the EURATOM Treaty stated 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, [and] (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 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 US political and technological support without directly involving it, the proposed US-EURATOM safeguards agreement had two basic features: a system of checks to ensure that reliable nuclear accountability records were being kept; and a system of inspection implemented by a EURATOM safeguards inspectorate comprising only EURATOM nationals, in order to verify the accuracy of the information supplied in the accountability records. Accordingly, Article 79 of the EURATOM Treaty charged EURATOM with the task of setting up a rigorous system of nuclear accountability. 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 not only satisfied their American counterparts, who had insisted on a strict and reliable material accountability system so as to allow the 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 out to draft safeguards inspection provisions in such a way that even the US authorities would agree not to carry out their own inspections in European installations. The terms of the Article 81 are 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 clarified the task of the inspectors and the criteria for 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 delay the proper inspections were allowed to create serious problems in the EURATOM Treaty.<sup>23</sup> 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*

<sup>23</sup> As 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 plans. 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 for the transfer of the teams to the inspection sites. In a way, the Iraqi leadership opted to play a "cat and mouse" game with the UNSCOM inspectors.

*Commission and the State having jurisdiction over the undertaking; [and] (d) total or partial withdrawal of source material or special fissile materials.*<sup>24</sup>

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. This provision reassured the French that the Treaty would not preclude them from developing their own 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 states, no article of the Treaty limited a nation's right to use atomic energy for military purposes<sup>25</sup>. The United Kingdom, which had "gone nuclear" almost a decade before, and France thus stood as the two, and only, nuclear weapons states (NWS) parties to the EURATOM Treaty. It goes without saying that a similar situation is by no means being suggested for the Middle East<sup>26</sup>. Though Article 84 exempted materials intended to meet defence requirements from safeguards application, it never 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 interpreted these clauses in the sense of the Commission, nor did they allow inspection of their defence-oriented facilities<sup>27</sup>.

<sup>24</sup> The last sanction, which meant the confiscation of the precious assets of the violating party, is quite severe, and thus deterring.

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

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

<sup>27</sup> Clarity was brought to this dispute, in the mid 1970s, with Article 35 of the Commission Regulation 3226/76. This particular Article provides explicit instructions about which information is exactly to be transferred from the State to EURATOM, when 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



An important feature of the EURATOM Treaty is that, with Article 52 in Chapter VI, a basis is provided for the establishment of the Supply Agency. The article states 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, in Article 86 of Chapter VIII of the EURATOM Treaty, it is stated 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. Further, in the same regard, Article 88 states that the Agency shall keep a special account in the name of the Community, called [the] Special Fissile Materials Financial Account...<sup>28</sup> There are similarities between the wording of the these Articles and that of the Acheson-Lilienthal Report. In the latter, it is emphasized that, the supply of uranium being indispensable to the production of nuclear weapons, any control would therefore have to provide adequate safeguards regarding raw materials. Accordingly, the authors suggested the establishment of the International Atomic Development Authority (IADA), endowed with far-reaching powers, to control every step of activity leading from raw materials to weapons.<sup>29</sup>

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*nuclear materials liable to meet the defence requirements but at other times operated exclusively with civil nuclear materials; [and ] (b) the [same] provisions... shall apply, with exceptions for reasons of national security, to installations or parts of installations to 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."*

<sup>28</sup> The 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 not merely monitoring, nor keeping an eye on supply, but represented a total control of, and responsibility for, it. See, Howlett, *EURATOM*...

<sup>29</sup> According 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 within the international fora.

### *i. Commission Regulations*

The EURATOM Treaty was signed in 1957. However, some additional regulations were required to put the Treaty into effect. Thus, in 1959 and 1960 the Commission of the European Communities adopted two Regulations (7 & 8) which made the terms of the Treaty operational.

Regulation 7 provided for the Commission to determine the procedure for completing the declarations laid down in Article 78 of the Treaty<sup>30</sup>. Accordingly, the Member States were required to provide the Commission with the following information: the type of reactor and its principal use; its thermal power rating; its fuels (composition and enrichment of fissile material); a brief description and the general plans for the installation; and the technical processes employed. Even though the scope and the purpose of Regulation 7 were designed 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) complicated this.

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 information concerning the details of their stocks and the movements of ores, source and special fissile materials. On the basis of this information, the Commission would then be provided with reliable records on the whole range of materials used and stored in the nuclear installations within the Community. Any loss or diversion of nuclear materials during the inspections would then be possible to detect.

In the early 1960s, the nuclear trade began to increase, both in scope and volume, calling for an increase in inspections. However, in order for the inspections to be cost-effective and to ensure an efficient use of resources, in view of 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. This regulation enabled the smaller quantities of nuclear materials, which did not need inspection, to be identified. The EURATOM Treaty thus allowed the transfer of these materials, without their being subject to safeguards inspection.

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



## ii. *The Age of NPT and EURATOM*

In the second half of 1960 and in the early 1970s, concern was expressed on the part of both the EURATOM and the IAEA authorities towards the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and its safeguards procedures which were to be implemented by the IAEA. With the entry into force of the NPT, the IAEA would be mandated to carry out safeguards inspections in the territories of the non-nuclear weapon states parties to the Treaty. On the other hand, EURATOM's inspections were already underway in the territories of the European Community's Member States. Therefore, the latter's regional safeguards would be likely to cause considerable problems for the universal aspirations of the former, unless an effective way could be found for them to co-exist.

The problems concerned two issues: first, the nature of the safeguards procedures to be applied to the EURATOM countries; and second, the organization to be entrusted with the responsibility of the implementation of these safeguards. Accordingly, the question was whether EURATOM would survive given the existence of the IAEA. Among the EURATOM Member States, West Germany and Italy were strongly opposed to the abolishment of EURATOM, while the Benelux countries tended to support the Non-Proliferation Treaty. Globally, the EURATOM authorities' view was to maintain their primary responsibility of carrying out safeguards, while letting the IAEA verify that they had done their job correctly. However, the IAEA authorities saw their role differently. 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 from the Soviet Union which had never acknowledged EURATOM's status, asserting that it was only "self-inspecting". Hence, according to the Soviet Union, IAEA inspections would give credible results, and thus would keep West Germany under close scrutiny. On the contrary, EURATOM's authorities insisted on the "non-disputable" effectiveness of their safeguards system, and on maintaining it.

Even by the time the NPT was signed, in 1968, the IAEA-EURATOM safeguards issue had still not been solved. This was despite the fact that Article III of the NPT, which was eventually agreed upon, did include an acknowledgement of regional safeguards systems, giving thereby an official recognition (if somewhat obliquely) to EURATOM's continued safeguards existence<sup>31</sup>. 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 within the NPT, which does not insist upon individual safeguards agreements, meant the recognition of their safeguarding role. Nevertheless, the debate had not ended on the question which organization would have the responsibility of carrying out safeguards in Western Europe after 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 parties to the NPT. The result of the Committee's efforts 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 INFCIRC/153. Accordingly, following 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 the INFCIRC/193 document in April 1973 together with Denmark and Ireland.

The INFCIRC/193 document was very similar to the standard INFCIRC/153 agreement, and carried out an additional component in the form of a Protocol containing a detailed *modus vivendi* on how the safeguards agreement would apply in practice. This was a complete innovation, since it represented the first attempt to reconcile two different safeguards systems<sup>32</sup>.

The safeguards arrangements were put into force in May 1975, after ratification by all the non-nuclear-weapon states of the Community. However, this had 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 parties to the Treaty to set up a State's System of Accounting for and Control of (SSAC) nuclear materials (paragraph 32).

<sup>31</sup> Howlett, *EURATOM...*, p. 137.

<sup>32</sup> *Ibid.*, p. 151.



### iii. IAEA Inspections

The IAEA was empowered, according to the terms of the INF/CIRC/193, to carry out 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 ...* [and] (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 inspectors, as stated in Article 72, were authorized 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...* [and] (c) *verify information on the possible causes of material unaccounted for [MUF], shipper/receiver differences and uncertainties in the book inventory.* Finally, the third type of inspections the IAEA was authorized to conduct were 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 EURATOM would carry out its own inspections based on the terms of the EURATOM Treaty, the IAEA also would undertake its own independent verification to ensure that EURATOM had complied to fulfil its responsibility. With the entry into force of the INF/CIRC/193, the overall scope of the safeguards provisions thus differed from those already established in the EURATOM Treaty. Specifically, while the latter covered the entire nuclear fuel cycle from the mining of uranium to the reprocessing of spent fuel, the former did not cover all these activities. Accordingly, it was necessary to amend the European Community Regulations to secure proper implementation of the INF/CIRC/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 which had been specified in the EURATOM Treaty (... *inspectors shall at all times have access to all places...*) were not covered by this regulation.

The IAEA and EURATOM, benefiting from experience gained over almost two decades of applying safeguards jointly, are now maintaining much smoother relations, in comparison with those in the past. As David Fisher observed:

On 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<sup>33</sup>.

[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... permits each agency to draw its independent conclusions about compliance with the IAEA/EURATOM agreement<sup>34</sup>.

## II. Latin America

### 1. Argentina and Brazil: From Rivalry to Co-operation

The Argentine-Brazilian relationship has been complex for about half a millennium. The territorial disputes between the Spanish and Portuguese colonial empires largely determined the fate of these relations. The deeply-rooted mistrust, forged by the competition for the "leadership" of South America, has been on both sides reflected by their desire to compete in international markets, particularly the nuclear field.

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David 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, PPRN Study Three, September 1992, p. 33.

<sup>34</sup> *Ibid.*, p. 34.



Both countries possess long established nuclear energy programmes<sup>35</sup>. Argentina's nuclear programme began in the 1950s. It quickened in pace in the 1970s, when its first nuclear plant, Atucha I, became operational in 1974. Other construction plans followed with the nuclear installations Atucha II and Embalse. Argentina also developed an 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<sup>36</sup>. In 1975, West

<sup>35</sup> The success of the Argentine-Brazilian rapprochement in the nuclear field has brought this issue once again up 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 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 have also denounced the nuclear option, and adhered to the non-proliferation regime. To introduce 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 co-operation, a selection among the plethora of articles and books available on these questions is suggested, as follows. 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. Rafto, "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 Goldenberg 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; and Thierry Riga, *Une approche coopérative de la non-prolifération nucléaire: l'exemple de l'Argentine et du Brésil*, UNIDIR Research Paper, No: 29, 1994.

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

Germany agreed to supply Brazil with reprocessing and enrichment technology, as an incentive for purchasing nuclear reactors<sup>37</sup>.

Ever since the mid 1960s, though the rivalry remained between Argentina and Brazil, both countries have had one interest in common. This interest has been the universal effort to curb the proliferation of nuclear weapons, which resulted in restrictions for the nuclear engagements of most countries. Such restrictions were presumably to affect the two rival states adversely. Hence, Argentina and Brazil had no alternative but to co-operate to protect their common interest by acting in parallel, if not together, in international fora<sup>38</sup>.

As the Tlatelolco negotiations continued (beyond 1964), Argentina and Brazil increasingly found their positions not only to match, but also to be opposed to the views of the majority of the other Latin American nations. Argentina and Brazil's shared objective became the mitigation of the more restrictive elements of the Tlatelolco Treaty, as well as the preservation of their independence for 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<sup>39</sup>.

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 co-operation 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<sup>40</sup>. This coordination opened the door to an overall improvement of the bilateral relations,

<sup>37</sup> See, John R. Redick, *et al.*

<sup>38</sup> It 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, the Brazilian delegation suggested for the first time such a zonal arrangement for Latin America. But the military coup in 1964, which produced two decades of military rule, shifted Brazil's position to opposing such regional or universal agreements. Their denial of adherence to the NPT was related to the "discriminatory" nature of that agreement.

<sup>39</sup> John R. Redick, *et al.*, p. 111.

<sup>40</sup> During 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 1800s, Argentina and Brazil fought their last direct conflict in the River Plate region. This resulted in 1828 with the Peace Treaty which established a new buffer state, Uruguay. See, Redick, *et al.*



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 (the Corpus-Itaipu agreement) on nuclear fuel cycle co-operation, 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 overcome the barriers posed by the inequitable non-proliferation regime<sup>41</sup>.

Major progress on opening up sensitive nuclear facilities, however, was not made until both countries elected democratic governments. After these elections, the Argentine authorities announced their country's capability to enrich uranium, but assured their Brazilian counter-parts at the same time that this enrichment facility was intended only for peaceful purposes. With the democratic take-over of the regime in Brazil, the leaders in both countries agreed to strengthen the Corpus-Itaipu Agreement, setting mutual inspections of their nuclear facilities as the eventual goal. Hence, in November 1985, Argentina and Brazil signed the Joint Declaration of Foz do Iguaçu which led to further agreements on economic co-operation and policy integration in the nuclear field<sup>42</sup>. The two nations created a permanent committee on nuclear policy to promote technical and scientific co-operation. This agreement was further followed by joint nuclear policy declarations from Brasilia in 1986, Viedma in 1987, Iperó and Ezeiza in 1988, and Buenos Aires in 1990. As Goldenberg and Feiveson pointed out, these achievements were due primarily to the return of democratic rule in both countries after decades of military governments<sup>43</sup>.

In November 1990, Argentina and Brazil signed, at Foz do Iguaçu, 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 were being used exclusively for peaceful purposes. Following this declaration, the parties decided to start negotiations with the IAEA to conclude a safeguards agreement based on the SCCC. The two countries also decided to take initiatives conducive to the full entry into force of the Treaty of Tlatelolco, including action related 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)* was 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 INF/CIRC/66 - type safeguards agreements dealt with specific cases of co-operation 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<sup>44</sup>.

## 2. Basic Undertakings Under the Bilateral Agreement

By signing the bilateral agreement, 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 the nuclear explosive devices used for peaceful purposes or those used for 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 the SCCC all the nuclear materials in all nuclear activities under their jurisdiction or control<sup>45</sup>.

<sup>44</sup> Marco A. Marzo, *et al.*, p. 30.

<sup>45</sup> In addition to the bilateral agreement, the principal documents defining the SCCC are the General Procedures and the Implementation Manuals for each category of installation. 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 to establish 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

<sup>41</sup> Redick, *et al.*, pp. 111-112.

<sup>42</sup> Marco A. Marzo, *et al.*

<sup>43</sup> Jose Goldenberg and Harold A. Feiveson, "Denuclearization in Argentina and Brazil".



### 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 is occupied alternatively, on the basis of an annual rotation, between an Argentine and a Brazilian. ABACC's technical staff consists of an equal number of Argentines and Brazilians. Most of ABACC's missions employ 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; to supervise the functioning of the Secretariat; to prepare the lists of qualified inspectors, who are selected among those proposed by the Parties; to inform the Party concerned of any anomalies which may arise in the implementation of the SCCC; and to inform the Parties of any non-compliance with the agreement. Any discrepancy or potential anomaly detected during the inspections or through the evaluation of reports and records must be reported by the Secretariat to the Commission, which must call upon the Party concerned to rectify the situation. Consequently, the Secretariat has to perform the necessary activities to implement and administer the SCCC; to receive and evaluate the reports; to inform the Commission of any discrepancies; and to act as the representative of the ABACC. By the late 1992, ABACC had reportedly received initial inventories of all the nuclear material and design information on all the nuclear facilities in the two nations. This was verified by on-site inspections, in particular at the Argentine gas diffusion and the Brazilian gas

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 (DIO); Inventory Change Reports (ICR); Material Balance Reports (MBR); Physical Inventory Listings (PIL); and notifications 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 the 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. Further, Annex I contains accounting report forms and instructions for their use, and Annex II contains the Basic System of Routine Communications.

centrifuge enrichment facilities. These inspections were due for the end of 1993 and, according to Argentine sources, were accomplished<sup>46</sup>.

### 4. The Quadripartite Agreement

The Argentine and Brazilian authorities were well aware that although the conclusion of bilateral agreements represented significant steps towards full adherence to the non-proliferation regime, this would not be enough to reassure the international community. Therefore, the confidence-building process that had been built already for about a decade had to be institutionalized. Hence, the IAEA was integrated into this process to further these steps.

Accordingly, in December 1991, the Quadripartite Agreement was signed by Argentina, Brazil, ABACC, and the IAEA. This Agreement provides for the application of *full-scope safeguards* by the IAEA, in co-operation 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, and the task of collecting data and carrying out inspections. The IAEA, on the other hand, has the right to conduct inspections of each nuclear facility, but in practice, works jointly with ABACC to inspect sensitive parts of the fuel cycle such as uranium enrichment activities<sup>47</sup>. Among the crucial rights given to the IAEA by the Quadripartite Agreement, Article 14, outlining the *Measures in Relation to Verification of Non-Diversion*, grants the IAEA 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 bring the case before the United Nations Security Council, informing the Security Council that the IAEA is no longer able to verify the absence of diversion. The

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

<sup>47</sup> The 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 is missing, or if the IAEA decides that ABACC's information is inadequate, such special inspections may be conducted.



Protocol to the Agreement also establishes a *Liaison Committee*, similar to an arrangement between the IAEA and EURATOM, to act as a channel for the assessment of safeguards concepts and implementation issues. The Committee involves all four Parties to the Agreement and meets annually or whenever unusual events occur<sup>48</sup>.

### III. Implications of EURATOM and ABACC for an NWFZ/ME

The effective implementation 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 IAEA safeguards inspections existing under the NPT. The overall set of verification provisions should enable the inspectors from the regional verification organization to have access to all places at all times, and to carry out their job effectively during the *ad hoc*, routine and challenge inspections. Furnishing regular and detailed information on the operations in the facilities, and on 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 changed these two countries from the "infamous hold-outs" into the "noble proponents" of the nuclear non-proliferation regime. This implies that furthering hostilities does not serve the well-being of countries, and that in most cases, heavy spending on armament ruins the economies<sup>49</sup>. The severe economic crisis experienced by both Latin American states in the early 1980s made their leadership "think twice" before sustaining the nuclear option<sup>50</sup>. Secondly, *democratization* proved to be an important factor in the evolution of the

<sup>48</sup> Darryl Howlett, *Regional Nuclear Co-operation*, p. 67.

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

<sup>50</sup> In 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 leadership in the Middle East of a Turkish saying that "any avoided loss constitutes a profit".

relationship between the two states. Democratization was also essential for the *transparency* in their relationship and for the building of confidence between them.<sup>51</sup> Third, the creation of a *region-specific non-proliferation regime*, endowed with stringent and credible verification provisions, proved feasible for countries which either anticipate the existing non-proliferation regime as discriminatory in nature, or which do not trust any set of verification provisions.

With some sort of a special arrangement, this region-specific regime can 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 structures and mandates which are independent from the IAEA<sup>52</sup>. Moreover, the Argentine-Brazilian experience suggests the importance of certain processes which significantly contributed to the creation of 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 resulting in the establishment of considerable links 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<sup>53</sup>.

## 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 considerable bearing on proposals for the

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

<sup>52</sup> The 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 high extent, the intrusion of the international safeguards inspections that they used to complain about on 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 co-operating extra-zonal states, and this would be an attractive side-effect for the zonal states.

<sup>53</sup> John R. Redick, *et al.*



Middle East. Therefore, in this part several suggestions will follow suit regarding how the above-mentioned verification provisions of two different regional arrangements could be rearranged within the context of a NWFZ/ME. The reader should beforehand be informed that many of the following proposals are presented in some detail<sup>54</sup>. This is thought to be necessary to illustrate their organizational context. Further configurations for the organizational framework of an NWFZ/ME are certainly possible. With these in mind, the 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<sup>55</sup>. The MECCAE is suggested to consist of a representative number of seats, preferably seven, with one permanent seat but no right of veto for Iran, Israel, and Egypt, given the non-Arab identities and the significant nuclear engagements of the former two, and the political weight of the latter in the Arab world and concerning the NWFZ issue. The remaining four seats may be distributed according to geographical criteria to be 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 the 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 of slightly more than 57%).<sup>56</sup> To execute verification, the MECCAE should

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

<sup>55</sup> The 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 must be mutual "respect". Throughout this part, MECCAE will thus denote the proposed Council.

<sup>56</sup> A 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 decided with a 3/4 majority of votes in the Council

designate a specific number of inspectors (a pool). Each inspector shall be chosen unanimously so that, at a later stage, no state party to the NWFZ/ME which is subject to a routine or non-routine inspection should be able to object to the inspectors and cause a serious delay in inspections. For each inspection, whether routine or non-routine, and within each inspection team, the MECCAE should assign at least one inspector who would be a national from the inspected state<sup>57</sup>.

### ii. The Supply Agency

As the second important institution to be established, 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 the MECCAE. The Supply Agency should keep records concerning the value and the inventory of special fissile materials in its possession, and should submit regular reports to the MECCAE, so as to ensure that no material is removed from the Agency. The Supply Agency should also have the optional right of ownership of non-direct use (source) of nuclear material<sup>58</sup>. Detailed records must be kept about these transactions as well<sup>59</sup>.

of the OPCW.

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

<sup>58</sup> In that case, the Supply Agency can be considered as acting as a "bank", on the accounts of which the states may deposit and withdraw their assets at any time.

<sup>59</sup> The physical protection of nuclear material then becomes the most important issue. The unprecedented increase in nuclear material trafficking in 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 has been in force since February 1987. References can be made to this Convention while deciding upon the mandate of the Supply Agency.



## 2. Basic Undertakings within the NWFZ/ME

Since the primary purpose of establishing an NWFZ/ME is to promote the peaceful uses of nuclear energy, as well as to provide 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 nuclear installations and facilities in the states parties to the NWFZ/ME<sup>60</sup>. Therefore, states parties to the NWFZ/ME should refrain from undertaking, encouraging or participating, directly or indirectly, in any action aimed at causing the destruction of, or damage to, any nuclear installation or facility operated by other states parties to the agreement<sup>61</sup>.

Additionally, the states should certify that they will not receive or seek any assistance in the manufacture or acquisition of nuclear explosive devices, or conduct any research relating to nuclear weapons or any testing 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. Further, the states shall 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 the MECCAE or the IAEA inspectors assigned by the MECCAE both for routine and non-routine inspections<sup>62</sup>. To enable the proper implementation of safeguards

<sup>60</sup> Considering the past experience of 1981 when Israel devastated the Osirak reactor in Iraq, such an undertaking would equally stand as a confidence-building measure among the zonal states.

<sup>61</sup> In 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, isotope 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, Mounbatten Centre for International Studies, 1995, p. K6. Given 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.

<sup>62</sup> In order not to cause any delays, which may result from visa or residence permit requirements for each of the inspectors approved by the MECCAE, all the states parties 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).

inspections and verification, the states should declare all their initial inventories relating to their nuclear materials, and provide all data concerning the exact locations as well as complete information on the installations their nuclear activities are being conducted in (or were previously conducted in). The states should furnish regular reports which shall include complete information, about all their imports from and exports to states, either parties or non-parties to the NWFZ/ME, relating to all nuclear material, technology and equipment. They should also supply reports which shall include data relating to the operation of reactors and changes in the quantities and composition of nuclear materials.

## 3. Verification Procedures

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

### i. Routine Inspections

For routine inspections, the MECCAE is suggested to retain the primary responsibility to administer and implement the CSAC, and to verify the information made available by the states. During these routine inspections, the IAEA inspectors may *only* observe the verification process.<sup>64</sup> The purpose of the 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.

<sup>63</sup> In this paragraph, for the sake of saving time and space, and for the sake of simplicity, there will not be a detailed presentation of CSAC. This system is almost identical to each of the EURATOM and ABACC cases, which were modelled upon the relevant paragraphs of the INFCIRC/153, and which were mentioned in detail in the previous paragraphs.

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



## ii. *Non-Routine Inspections*

For non-routine inspections, two categories of requests are envisaged: First, the IAEA may receive a request to conduct a non-routine inspection, in case (a) the IAEA inspectors are not satisfied throughout their observations with the verifications 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) for the sake of operationalizing the IAEA's principle to deter the states against possible diversion of significant quantities of nuclear material. Secondly, the states parties 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 cases where a decision is taken to conduct a non-routine inspection, the MECCAE inspectors should carry out this task promptly.

No *quota* is suggested for the states to accept non-routine inspections. This is due to the existing imbalance amongst the various levels of development of nuclear infrastructures and of the know-how capacities of the states in the region. Therefore, a common quota may not be adequate or applicable to each state and to the installations in these states. Some of the installations may require an almost continuous process of verification. A second reason is that, since it is in the authority and responsibility of the 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 the MECCAE should be respected and their conclusions considered satisfactory.

During the non-routine inspections upon the request of the Member States, the IAEA inspectors may either observe the MECCAE inspectors, or conduct their own independent inspections. If the latter happens, the results of these independent inspections should be compared with the results of the others.

## 4. *Non-Compliance & Enforcement Measures*

In case of violation of the terms of the Treaty, two categories of measures are suggested. First, depending on the level of seriousness of violation, the MECCAE may itself apply a set of measures with an equivalent level of severity. Therefore, the MECCAE may either (a) warn the violating state publicly; (b) withdraw special benefits, such as financial and technical assistance; or (c) totally or

partially withdraw the source materials from the installation, and freeze the rights of the state over their source materials kept in the Supply Agency. Secondly, if after the above measures have been taken, the violating state still refuses to comply with the terms of the Treaty, the MECCAE should bring the case to the attention of the IAEA. Further measures will then be within 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 should then (a) 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 the MECCAE, or by taking an independent initiative; and (b) report the non-compliance (in case of extended denial by the violator) to all the Members of the Security Council and the 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. Nevertheless, these differences should by no means undermine the importance of the lessons that can be drawn from distinct case studies. Hence, the main theme of this annex is based on such a deduction. It goes without saying that the Middle East has more dissimilarities in many respects, than similarities, in comparison with Western Europe and Latin America. However, issues such as the verification provisions of various regional nuclear non-proliferation agreements exhibit similarities. The scope of these provisions is usually a reflection upon the expectations and the intentions of the parties. These expectations and the intentions represent the consequences of the regional characteristics. 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 for the regional institutions. The verification provisions and the institutions introduced in this annex for a Middle East NWFZ are consistent with such reasoning. Yet, these provisions and institutions should be the subject of a more comprehensive study. When such a study is considered feasible by all the parties concerned in the Middle East, then this annex can be said to have attained its goal.