ANNUAL REPORT 1993

ABACC

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ABACC SECRETARIAT
from 92/12/12 to 93/12/12

Carlos Augusto Feu Alvim da Silva
Secretary

Jorge Antonio Coll
Deputy Secretary

ABACC

BRAZILIAN-ARGENTINE AGENCY FOR ACCOUNTING AND CONTROL OF NUCLEAR MATERIALS

CONTENTS

BACKGROUND

Over the last fourteen years, Brazil and Argentina have adopted bilateral mechanisms for nuclear cooperation. The Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) was set up in this context after a long process of cooperation undertaken by the two countries.

During the 60s and 70s, Brazil and Argentina maintained cordial relations but had no access to information on each others' nuclear programs, pursued autonomously. In 1979, solution of the controversy over use of waters in the Plate Basin created a political climate making for closer relations between the two countries.

In 1980, the two governments signed a cooperation agreement on the peaceful use of nuclear energy which was pursued significantly during following years. Nonetheless, this undertaking to develop nuclear energy for peaceful uses was still viewed with suspicion by the international community. Neither of the two countries was committed, by any internationally recognized legal document, to renouncing the development and acquisition of nuclear arms. Neither Brazil nor Argentina had accepted the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). Argentina had signed the Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (Treaty of Tlatelolco) in 1967 but had not ratified it (*), while Brazil - which had signed the same year and ratified in 1968 - had opted not to waive the requirements for its entry into force set out in Article 28.

Between 1983 and 1985, Brazil and Argentina improved their bilateral relations, reinforcing the process of cooperation and integration launched by their governments. The Joint Declaration on Nuclear Policy, signed by the two heads of state at Foz do Iguaçu in 1985, embodied the commitment to develop nuclear energy for exclusively peaceful purposes and the intention to collaborate in the field of the nuclear fuel cycle. In 1986, the Brazilian Nuclear Program Assessment Commission, also known as the "Vargas Commission," recommended more intensive nuclear cooperation between the two countries and the "gradual establishment of a mechanism for mutual inspection of the two countries' nuclear activities". A series of initiatives consolidated the process of bilateral nuclear cooperation, resulting in the Joint Declarations signed at Brasilia in 1986, at Viedma in 1987, and at Iperó in 1988.

Both presidents visited Argentina's more sensitive nuclear facilities in 1987 and those of Brazil in 1988. This was followed by visits by nuclear technicians which intensified the exchange of information on their respective nuclear programs, further bolstering mutual confidence by demonstrating that both countries were capable of developing their own leading-edge technology for exclusively peaceful ends.

The commitments assumed previously by the two countries were reaffirmed in July 1990 by the Buenos Aires Joint Declaration. In November of the same year, the two heads of state signed the Brazilian-Argentine Joint Declaration on Nuclear Policy in the presence of the director-general of the International Atomic Energy Agency (IAEA) and the secretary-general of the Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (OPANAL). This document set up the foundations of a system of full scope safeguards and of the Common System for Accounting and Control of Nuclear Materials (SCCC), the aim of which is to ensure that nuclear materials used in all nuclear activities in Brazil and in Argentina are destined to exclusively peaceful ends. In addition, the document announced the start of negotiations with the IAEA towards an agreement on full scope safeguards and measures to update and upgrade the text of the Treaty of Tlatelolco with a view to its coming into force for the two countries.

In July 1991, the Agreement between Brazil and Argentina for the Exclusively Peaceful Use of Nuclear Energy was signed in Guadalajara, Mexico, and came into force on December 12th of the same year. This agreement formally sets up the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) whose function is to administer and apply the SCCC. On December 9th, 1992, ABACC headquarters were officially inaugurated by the foreign ministers of Brazil and Argentina who described the event as a decisive step by the two countries towards ensuring transparency in their nuclear activities.

Both Brazil and Argentina have had safeguard agreements in force with the IAEA since the 60s and 70s, deriving from cooperation agreements that Brazil signed with the United States of America and with Germany, and which Argentina signed with the United States, Germany, Switzerland and Canada. These (INFCIRC 66-type) agreements contemplate situations of cooperation and do not cover nuclear materials involved in each country's autonomous programs which, at present, under full scope safeguards set out in the Bilateral Agreement, are subject to the SCCC and verified and controlled by ABACC.

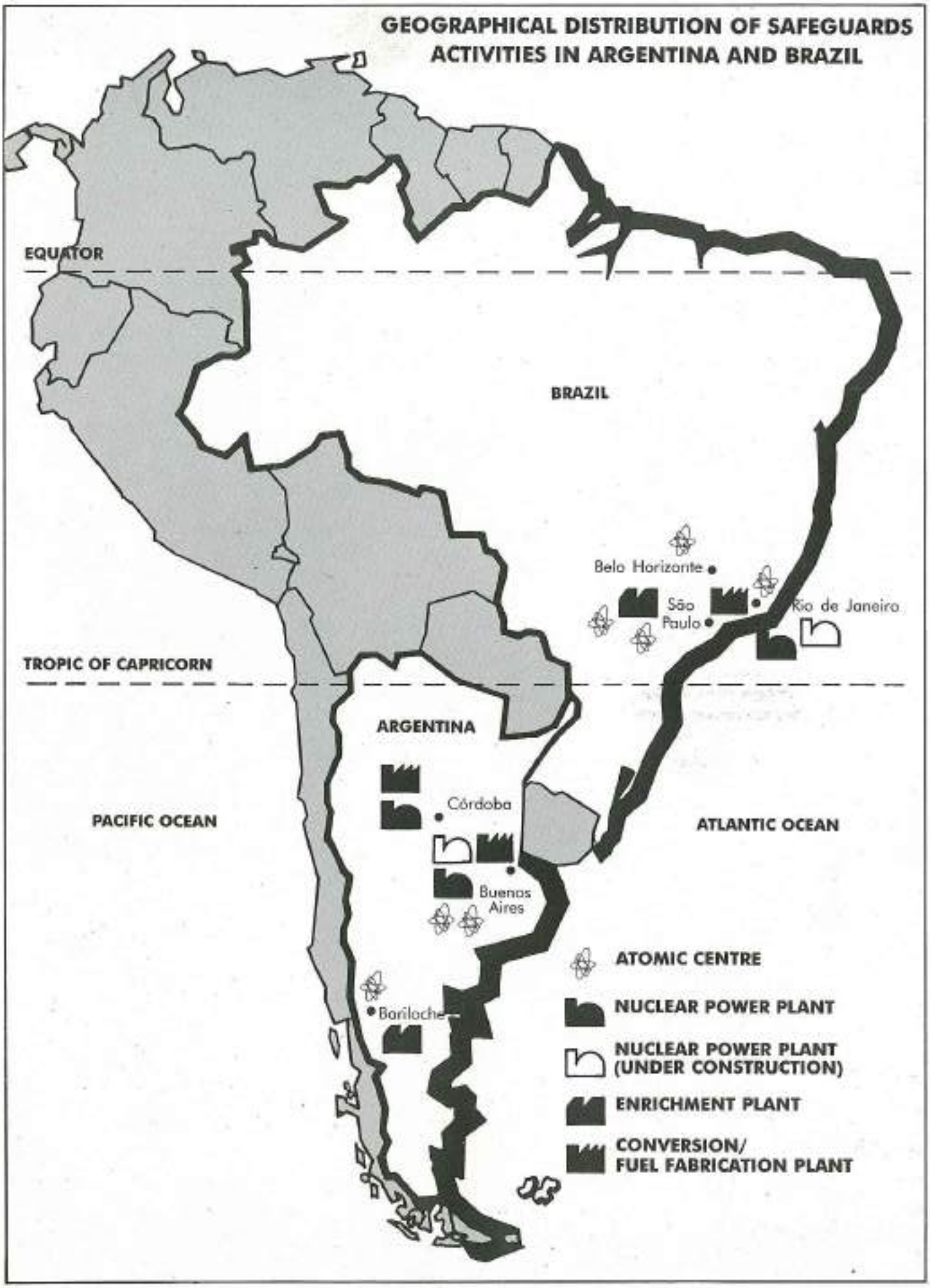
On December 13th, 1991, the Agreement between Brazil, Argentina, ABACC and the IAEA for the Application of Safeguards was signed by the two heads of state, by the secretary of ABACC and by the director-general of the IAEA. The quadripartite agreement, as it is known, comes into force on the date the IAEA receives notification from ABACC and the States Parties that the respective requirements for entry into force have been fulfilled.

At a special session of the OPANAL General Conference held in August 1992, Brazil, Argentina and Chile proposed amendments to articles 14, 15, 16 and 19 of the Treaty of Tlatelolco. These amendments were approved during the last General Conference, in May 1993. In general terms, the amendments are designed to update reporting requirements and procedures and special inspection mechanisms.

The most recent joint declaration was signed on May 26th, 1993, in Buenos Aires. In this, the two governments once again reaffirm the undertakings with regard to nuclear non-proliferation and speedy entry into force of the quadripartite agreement and the Treaty of Tlatelolco with its amendments.

Cooperation between Brazil and Argentina involves many other areas, including the creation of a common market, the Mercosul. In recent years, considerable progress has been made in trade relations between the two countries. It would not be correct to attribute this progress solely to the easing of nuclear tensions. It is, however, fair to say that bilateral trade relations would have been harder to develop if there did not exist the mutual confidence which has been established and strengthened in the nuclear field on principles of good neighborliness, friendship, cooperation, integration and complementarity.

(*) In November 1993, the Republic of Argentina ratified the Treaty of Tlatelolco and its amendments.


GEOGRAPHICAL DISTRIBUTION OF SAFEGUARDS ACTIVITIES IN ARGENTINA AND BRAZIL
EQUATOR
BRAZIL
Belo Horizonte
São Paulo
Rio de Janeiro
TROPIC OF CAPRICORN
ARGENTINA
Córdoba
Buenos Aires
Bariloche
PACIFIC OCEAN
ATLANTIC OCEAN
ATOMIC CENTRE
NUCLEAR POWER PLANT
NUCLEAR POWER PLANT (UNDER CONSTRUCTION)
ENRICHMENT PLANT
CONVERSION/ FUEL FABRICATION PLANT

INSTITUTIONAL ACTIVITIES

Secretariat communicated the results of the meeting to the United States government, listing the potential activities for cooperation agreed on during the meeting. These included certification of secondary uranium standards, ABACC participation in the CNEA-USDOE project to apply safeguards at enrichment plants, participation by ABACC inspectors and operators in training courses given by the US, participation by North American experts in courses given by ABACC, cooperation on non-destructive analytical methods and/or techniques, participation by North American laboratories in the program of inter-comparison promoted by ABACC, and the supply of equipment for inspections. In December, the Secretariat received a draft cooperation agreement from the DOE covering the points agreed on during the US mission's visit to ABACC. The draft text is being studied by the Secretariat which, in turn, forwarded it for consideration by the ABACC Commission.

3. At the end of 1993, the Secretary received an invitation from the British government to visit government institutions in England early in 1994 to discuss arrangements for a possible process of cooperation with the United Kingdom.

Other visits to the Secretariat

March: Deputy Secretary-General of the Organization for Economic Cooperation and Development (OECD), Ambassador Makoto Taniguchi.

April: Resident Representative of Brazil in Vienna, Ambassador Thereza Quintella.

July: Consul-General of the British Embassy in Brazil, Minister Councillor Peter Jenkins.

October: Ambassador of Argentina in Brazil, Ambassador Alieto Guadagni.

Lectures, symposia and seminars

March

Former Secretary of Science and Technology and former Minister of Education of the Brazilian government, Professor José Goldemberg, together with councillor Roberto Jaguaribe, former head of the Division of Intellectual Property and Sensitive Technologies of the Brazilian Ministry of External Relations, gave talks on initiatives in Brazil by the IAEA and other international organizations towards nuclear non-proliferation.

May

At the invitation of the IAEA, Deputy Secretary, Dr. Jorge A. Coll, participated as guest speaker in the workshop "Nuclear Weapon Free Zone in the Middle East", held in Vienna.

Two Secretariat officials, Dr. Alfredo Biaggio and Dr. Olga Mafra, gave a paper at the ESARDA congress held in Rome.

Secretary Dr. Carlos Feu Alvim took part in the meeting held by the Fundación Integración Argentina on "Energy: Myths and Reality - the Strategic Currency of Weaponry and the New Role of Atomic Energy", held in Buenos Aires.

The Secretary gave a talk during the Autumn meeting of the Argentine Nuclear Technology Association, held in Buenos Aires.

At the invitation of the Los Alamos National Laboratory and the IAEA, a Secretariat Planning and Evaluation Official, Dr. Marco A.S. Marzo, participated as guest speaker in the SSAC training course held in Santa Fé, New Mexico.

July

At the invitation of the Egyptian government, the Secretary participated as guest speaker at the workshop "Verification of Arms Control Agreements and Measures to Establish Confidence", held in Cairo.

September

The Secretary gave a paper to the Congress INTER JURA'93, in Rio de Janeiro, in which the Deputy Secretary and the Chargée for Institutional Relations, Dr. Ana Claudia Raffo, also participated.

The practice of safeguards is based on the records and verification of inventories of nuclear material. The SCCC, applied by ABACC, is designed to detect - in good time and with a reasonable degree of certainty - any diversion of significant quantities of nuclear material to the manufacture of nuclear weapons or nuclear explosive devices, according to the terms of the Bilateral Agreement.

In 1993, the ABACC Secretariat made a priority of applying the SCCC to nuclear materials present at facilities not controlled by the IAEA, with the aim of placing all Brazilian and Argentine nuclear facilities under either IAEA or ABACC safeguards by the end of the year.

Generally speaking, the process may be described as follows:

- ABACC receives an initial inventory declaration of all nuclear material present in each country and any inventory changes from the National Authorities (NAs) of Brazil and Argentina.
- The inventory is input into a data bank and the verification of such inventory is planned and performed.
- ABACC convenes Brazilian inspectors to carry out inspections in Argentina and Argentine inspectors to inspect facilities in Brazil.
- ABACC also receives information on the design of facilities. This information is provided by a Technical Questionnaire (TQ) of each facility.
- ABACC studies the information in the TQs and carries out inspections to verify the information.
- Periodically, by way of reports, the NAs notify of any inventory variations that occur at each facility. These are input into the data bank.
- After the verification of the initial inventory of each facility is concluded, ABACC plans and performs inspections to periodically verify the nuclear material. In this kind of verification, the inspectors use specific equipment and collect samples of nuclear material to be analyzed later at laboratories chosen by ABACC, outside the samples' country of origin.
- Periodically, ABACC sends inspection results to the corresponding NAs.
- On the basis of the information contained in the TQs and the results of the design verification inspection results, ABACC drafts Implementation Manuals (IMs) for each of the facilities. These drafts are negotiated with the respective NAs and the Operators. Once the IMs come into force, ABACC carries out the activities provided for therein on a routine basis.

Note: The IMs detail all accounting and control procedures to be used at the facility, set the frequency and types of inspections provided for and describe all the requirements to be met by the Operator in terms of the records, reports and measurement of nuclear material.

ABACC administered SCCC implementation activities satisfactorily throughout 1993. At the end of the year, practically all the facilities containing nuclear material declared by Brazil and Argentina and not subject to international safeguards before the Bilateral Agreement came into force, had been verified. In order to reach this goal, the various technical areas of the ABACC Secretariat undertook the activities called for in the 1993 Work Plan, which were systematically monitored and fulfilled.

Records, Reports and Accounting of Nuclear Material

At the beginning of 1993, the ABACC Secretariat already had a data bank, which it had built up the previous year, designed to store information on the inventories of nuclear material. The first information on inventories was received by the Secretariat in September 1992 and input into the data bank.

In preparing its accounting reports, the ABACC Secretariat set up a systematic procedure consistent with what is known as Code 10 of the model of the General Part of the IAEA Subsidiary Arrangements. This initiative was taken so there would be no need to modify the report format when the Quadripartite Agreement comes into force.

The Secretariat submitted to the ABACC Commission a set of procedures to be adopted with regard to accounting reports. Once approved, these procedures came to form Annex I to the SCCC General Procedures. Subsequently, the data bank designed to store information on nuclear material inventories submitted by the NAs was modified in accordance with Annex I. This data bank is being updated routinely so that the information mentioned may be analyzed for consistency.

The ABACC Secretariat set up a working group, comprising a number of its officials in addition to Brazilian and Argentine experts, to advise it on implementation of recording and reporting procedures in keeping with SCCC provisions. The group met three times in 1993 establishing, as a result, specific accounting procedures to be incorporated into the IMs of the facilities.

During meetings held with the NAs in September, the accounting inventories dated June 30th, 1993, from all the areas containing nuclear material in each country, were reconciled and accounting reports received by the ABACC Secretariat from then on were recorded and analyzed for consistency.

In addition, the Secretariat selected a number of facilities already safeguarded by the IAEA in order to study the transition from the recording system presently in use (based on IAEA document INFCIRC 66/Rev.2) to the system provided for in the SCCC, to be used under the Quadripartite Agreement.

Inspections

By the end of 1992, the Secretariat had received information in the form of TQs from 53 percent of Brazilian and Argentine facilities containing nuclear material subject to the SCCC alone. At the beginning of 1993, 47 percent of all such facilities had been subject to TQ verification inspections. In the course of the year, the remaining TQs were received and their verifications proceeded with a view to confirming all the information necessary for drafting the respective IM for each facility. By the end of the year, the Secretariat had verified practically all the TQs for facilities (94 percent) subject to the SCCC alone. At facilities considered sensitive because technology secrets are involved and where the implementation of safeguards must thus respect the intrusion issue, verification of this kind is in progress. Nonetheless, the first inspections were completed in 1993.

In February 1993, the Secretariat began to carry out nuclear material inventory verification inspections. At year-end, 94 percent of the facilities not subject to IAEA safeguards - including sensitive facilities - had been subject to verification of this kind.

During the initial inventory verification inspections, several control activities were performed including non-destructive analyses on nuclear material and samples were taken to be later subjected to destructive analyses. In the latter case, samples taken in Argentina are sent to Brazil and vice versa

In all, Argentine and Brazilian inspectors performed 46 inspections, corresponding to an annual load of 376 inspector-days.

Placing seal during inspection activity

Planning and Evaluation

On the basis of the information contained in TQs for facilities subject to the SCCC alone and the results of related verification inspections, the Secretariat drafted IMs for 71 percent of the facilities verified and discussed 26 percent of these drafts with the respective NAs and operators. IMs for 9 percent of the facilities were approved by the ABACC Commission and came into force during 1993.

The SCCC General Procedures were reviewed and two annexes were incorporated: the first presents a detailed explanation on the use of nuclear material accounting report forms, and the second contains a summary on routine communications channels for the application of the SCCC.

Taking into account that both countries have sensitive facilities - those that technological, industrial and commercial secrets ought to be preserved - and that the respective IMs were not in force, the Secretariat negotiated ad hoc procedures for initial inventory verification and other ad hoc inspections with the NAs of Brazil and Argentina.

The Secretariat drew up a purchasing plan which provides for the purchase by 1994 of portable equipment for non-destructive analyses and analytical and isotopic standards for destructive analyses budgeted at US$ 1,15 million. Equipment purchases in 1992 amounted to US$ 150,000 and, in 1993, to US$ 200,000. Equipment purchases were prioritized in such a way as to meet the needs of carrying out the activities planned for ABACC's first two years of operations.

The portable equipment purchased is maintained and stored in an area made available to ABACC by the Brazilian NA at the Safeguards Laboratory (LASAL) of the CNEN's Radioprotection and Dosimetry Institute (IRD). The Argentine NA also offered an area on CNEA premises for storage and maintenance of ABACC equipment. The administrative measures necessary for certain equipment to be transferred to Argentina on a permanent basis are already complete.

Twenty-seven inspectors received specific training in the proper use of methods and equipment for non-destructive analyses during inspections.

Inspectors undergoing training at Safeguards Laboratory (LASAL)

Sample analysis is one of the elements indispensable to fulfillment of ABACC's verification activities. In this connection, in order to determine the quality of sample analyses by several laboratories, the Secretariat, in cooperation with the two countries, has been undertaking a program of inter-comparison of analyses with Argentine and Brazilian laboratories. It has also contacted a number of laboratories elsewhere which also participate in this program as an additional reference. In 1992, a group was set up to advise the Secretariat and, in 1993, it met twice to coordinate this program and set out a schedule of activities. The first inter-comparison of uranium analyses is in progress. Laboratories in Brazil, Argentina and elsewhere have already received the samples. The chemical analysis of these samples will be performed on the basis of standards acquired by ABACC. Although ABACC had difficulty acquiring standards for performing the isotopic analyses on the international market, secondary standards were prepared jointly by Brazil and Argentina and will also be used to calibrate instruments for non-destructive analysis. Nevertheless, the Secretariat recently received an offer of international cooperation in analyzing and certifying these as secondary standards.

With support and cooperation from COPESP, the ABACC Secretariat undertook the task of taking measurements of non-destructive analysis for the purpose of evaluating the consistency of the equipment acquired, of the calibration parameters and the measuring techniques before these are used by inspectors in verifications. The measuring included verification of COPESP items with enrichment, certified by destructive analysis and made available to ABACC.

The samples taken during the initial inventory verification inspections are being analyzed at Brazilian or Argentine laboratories. The results of these analyses, as well as those of the non-destructive analyses, figure in the respective inspection reports and are compared with the values declared by the operators of the facilities verified, from which the samples were taken. At year-end 1993, no significant discrepancy had been detected.

Taking sample during initial inventory verification

ABACC sponsored a course for its Argentine and Brazilian inspectors, which was coordinated and organized by the CNEA and held in Buenos Aires from June 7th to July 2nd, 1993. Speakers from Argentina and Brazil and experts from the USA, Japan and the IAEA collaborated on the course.

Participants in the course for ABACC inspectors in Buenos Aires

ABBREVIATIONS

CEA: Comissariat à l'Energie Atomique

CETAMA: Commission d'Établissement des Méthodes d'Analyses

CNEA: National Atomic Energy Commission of Argentina

CNEN: National Nuclear Energy Commission of Brazil

COPESP: Brazilian Navy Special Projects Coordination Bureau

DOE: United States of America Department of Energy

ESARDA: European Safeguards Research and Development Association

EURATOM: European Atomic Energy Community

IAEA: International Atomic Energy Agency

IM: Implementation Manual

IRD: Radioprotection and Dosimetry Institute

LASAL: Safeguards Laboratory

NA: National Authority

OECD: Organization for Economic Cooperation and Development

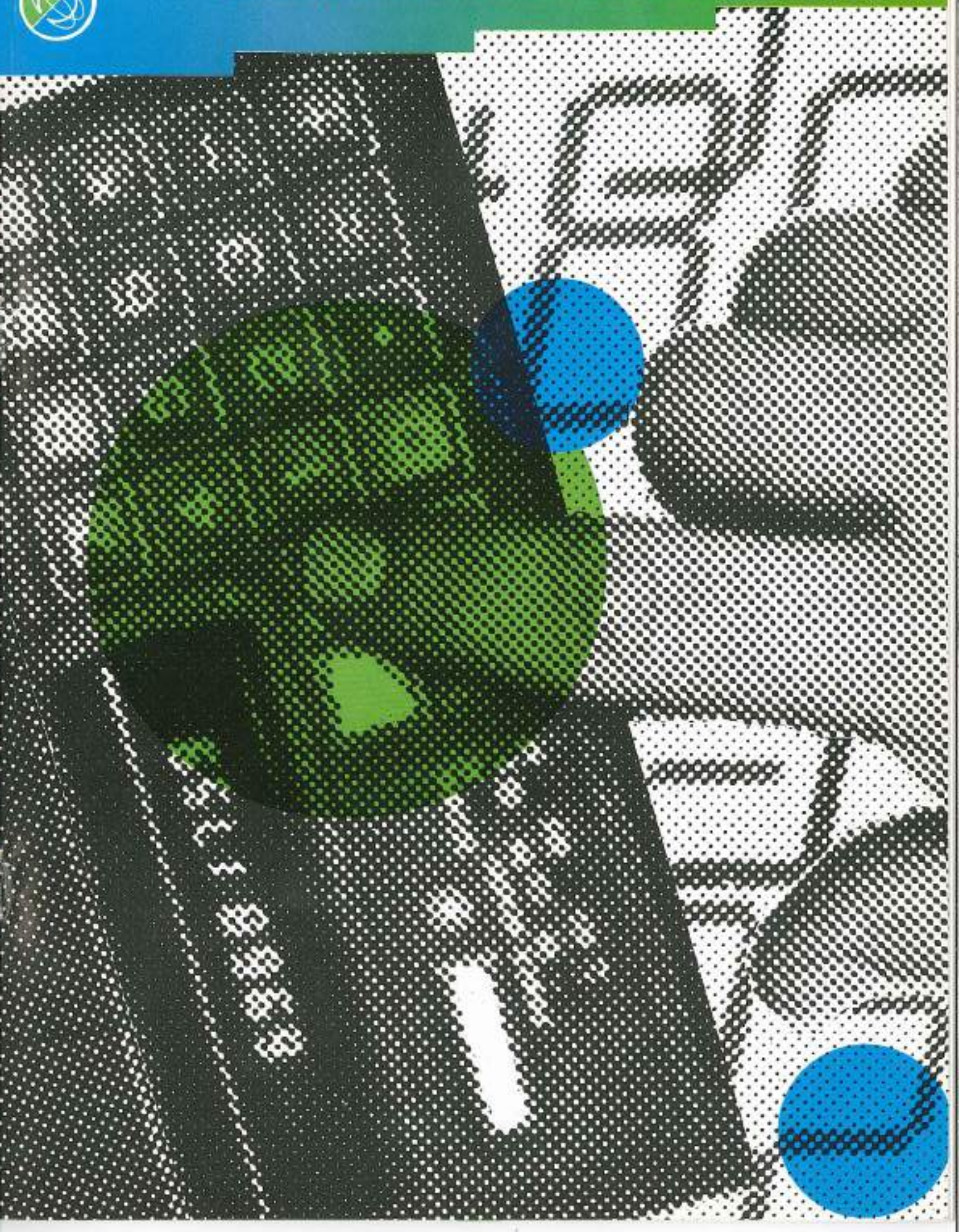
OPANAL: Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean

SCCC: Common System for Accounting and Control of Nuclear Materials

SSAC: State System for Accounting and Control

TQ: Technical Questionnaire

ADMINISTRATIVE AND FINANCIAL ACTIVITIES



During 1993, the Secretariat issued seven internal rules which regulate administrative activities in logistical support of the ABACC headquarters and the holding of inspections.

Human Resources

The organs of ABACC are the Commission - its directive body, formed by four members of which each government appoints two - and the Secretariat - its executive body.

The personnel of the Secretariat was completed during 1993 and today comprises a Secretary and Deputy Secretary, the nationalities of which alternate each year, and its staff, currently comprising six Senior Professional Technical Officials (three from each party), two Professional Administrative Officials, four Auxiliaries and approximately sixty inspectors seconded by the Parties (thirty from each country) which report to the Secretariat while performing inspection duties.

The inspectors are specialists who work for the National Authorities or for another official organization in either country and are convened by the ABACC Secretariat as necessary. The body of inspectors includes not only individuals with ample experience in inspections at the national level, but also specialists in various areas of interest relating to safeguards.

The organic structure of the Secretariat comprises a Technical Unit and an Administrative and Financial Unit. The former includes the areas of nuclear material accounting, planning and evaluation, operations and technical support.

In 1993, the Secretariat retained an attorney on a temporary basis in Argentina, whose functions are representation and technical support there.

As laid down in the Bilateral Agreement, on December 12th, 1993, Dr. Jorge A. Coll came to perform the function of Secretary of ABACC and Dr. Carlos Feu Alvim that of Deputy Secretary.

Funding

The annual budget of ABACC is US$ 2 million. This amount does not include the salaries of inspectors and consultants, who are paid directly by the countries, nor the purchase of equipment, which is effected with sums in addition to the budget.

Both governments' contributions to the ABACC budget stem from an obligation with the force of law. Both Argentina and Brazil contributed equally to its budget.

In 1993, ABACC's budget was set at US$ 2.5 million (including equipment purchases) and fund availability was maintained within the operational limits set.

The management of ABACC funds is reflected in the Statement of Accounts relating to fiscal year 1993.

STATEMENT OF ACCOUNTS
at december 31st, 1993
(values in US$)

1. REVENUE	
Brazilian Government Contribution	1,237,500.00
Argentine Government Contribution	1,237,500.00
Finance Revenue	70,327.16
TOTAL	**2,545,327.16**
2. EXPENSES	
Payroll	821,371.01
Temporary Assistance	15.00
Travel	413,164.96
Technical Support	15,102.12
Office and Vehicles	191,030.06
Financial Expenses	30,727.74
General	62,705.15
TOTAL	**1,534,116.04**
3. INVESTMENTS	
Technical Support	150,656.40
Office and Vehicles	38,926.29
General	659.34
TOTAL	**190,242.03**
4. LETTERS OF CREDIT & EQUIPMENT ADVANCE PAYMENT	**122,005.35**
5. YEAR-END BALANCE	**698,963.74**

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