

**ANNUAL REPORT**  
**1997**



**ABACC**



**ABACC**

**Brazilian-Argentine Agency for Accounting  
and Control of Nuclear Materials**

Av. Rio Branco, 123 - grupo 515  
20040-005 - Rio de Janeiro - RJ - Brasil  
Tel.: (55-21) 221.3464  
Fax: (55-21) 507.1857  
<http://www.abacc.org>  
E-mail: [postmaster@abacc.org.br](mailto:postmaster@abacc.org.br)

**General Supervision**  
Ana Claudia Raffo Calado  
Institutional Relations of ABACC

**Design & Graphic Production**  
Reposarte Gráfica e Editora Ltda.

# CONTENTS

1. Joint Declaration on the 5th Anniversary of the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials .....	4
2. Introduction .....	6
3. Activities of the Commission in 1997 .....	8
4. Activities of the Secretariat in 1997 .....	10
4.1. Institutional Activities .....	11
4.2. Technical Activities .....	19
4.3. Administrative & Financial Activities .....	33
5. Background - 5 Years of ABACC .....	36
6. Glossary .....	44



## JOINT DECLARATION ON THE 5TH ANNIVERSARY OF THE BRAZILIAN-ARGENTINE AGENCY FOR ACCOUNTING AND CONTROL OF NUCLEAR MATERIALS (ABACC)



**T**he Presidents of the Federative Republic of Brazil, Fernando Henrique Cardoso, and of the Republic of Argentina, Carlos Saúl Menem, during the ceremony celebrating the 5th Anniversary of the Activities of the Brazilian-Argentine Agency for the Accounting and Control of Nuclear Materials (ABACC).

### WHEREAS:

The cooperation between Brazil and Argentina for the development of the peaceful uses of nuclear energy has benefited from a process of building up mutual trust, which intensified from 1980 onwards;

The Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC), was set up in 1991 under the Agreement for the Exclusively Peaceful Use of Nuclear Energy, in order to apply safeguards to all nuclear materials in both countries, and is one of the essential pillars of the nuclear non-proliferation policy of Brazil and Argentina;

The start-up operations by ABACC in July 1992 laid firm basis resulting in the implementation of the Agreement for the Application of Safeguards between Brazil and Argentina, the International Atomic Energy Agency (IAEA) and the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC), from 1994 onwards, known as the Quadripartite Agreement;

The Quadripartite Agreement constitute, with regard to Brazil and Argentina, the Agreement for the Application of Safeguards with the International Atomic Energy Agency (IAEA) required by the Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (Treaty of Tlatelolco) and the safeguards stipulated in the Quadripartite Agreement are equivalent to those required by the full scope safeguards system stipulated by the Treaty on the Non-Proliferation of Nuclear Weapons (NPT);

The safeguards applied by ABACC have contributed to confirming the peaceful vocation of the Brazilian and Argentine nuclear programs with the international community and for this reason ABACC has acquired international acknowledgment and respect, and may even be useful as an example to other parts of the world;

### REITERATE:

Their commitment to continue with the development of nuclear energy for exclusively peaceful purposes.

Their willingness to extend the fruits of the cooperation in this area to other countries in the region that share the objectives of peaceful use of nuclear energy for economic and social development.

The support of the respective Governments for ABACC as the Agency responsible for the implementation of safeguards to which all nuclear materials are subject in Brazil and Argentina.

DECLARE:

Their intention of continuing with the close cooperation in all peaceful applications of nuclear energy and complementing each other in aspects which they reciprocally deem convenient as agreed.

Their satisfaction over the fact that ABACC has been building up impressive experience over the past 5 (five) years in the application of safeguards, with increasing improvement from the technical and operational view points, having fully and competently played the role assigned thereto in the process of mutual trust between Brazil and Argentina, and has fostered the international nuclear non-proliferation regime.

Brasília, 10 November 1997.

**FERNANDO HENRIQUE CARDOSO**

President, Federative Republic of Brazil

**CARLOS SAÚL MENEM**

President, Republic of Argentina



Carlos Menem and Fernando Henrique Cardoso sign the Joint Declaration on the 5th Anniversary of ABACC.



Outstanding among the events during 1997 - the fifth year of ABACC operations - is the signature of the Joint Declaration of the Presidents of Brazil and Argentina on 10 November. This Annual Report includes a transcription of this important declaration, in addition to the report on its activities during 1997, together with a summary of the achievements of ABACC over the past five years.

On 18 July 1991, the Agreement for the Exclusively Peaceful Use of Nuclear Energy was signed at Guadalajara, Mexico, which was promulgated by the Brazilian-Argentine Governments on 12 December this year. This Agreement set up the Brazilian and Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) in order to apply and administer the Common System for Accounting and Control of Nuclear Materials (SCCC) for these materials in both countries. ABACC started up operation in June 1992.

The immediate signature of the Agreement for the application of safeguards between Brazil, Argentina, the International Atomic Energy Agency (IAEA) and ABACC, called the Quadripartite Agreement, and the later accession of both countries to the Treaty of Tlatelolco and the Argentine signature of the Treaty on the Non-Proliferation of Nuclear Weapons - NPT supplemented the ratification of the commitment of both countries to the exclusively peaceful use of nuclear energy. In 1997, the Brazilian Government forwarded a message to the National Congress paving the way for Brazil to adhere to the NPT.

During the past five years ABACC has deployed considerable efforts in training its staff, including its inspectors, many of whom

are not on the ABACC staff, in accordance with the provisions of the Bilateral Agreement. Its technical cooperation with international agencies was also of the utmost importance, particularly EURATOM and the IAEA, as well as various countries, including the USA (specific agreement with the Department of Energy - DOE) and France. In addition to these countries, there was also appreciable cooperation with Japan, Korea and the United Kingdom. For the two countries signing the Bilateral Agreement, ABACC maintained technical cooperation activities not only with the Argentine Nuclear Regulatory Authority - ARN - *Autoridad Regulatoria Nuclear* and the National Atomic Energy Commission - CNEA - *Comisión Nacional de Energía Atómica*, and the National Nuclear Energy Commission - CNEN - *Comissão Nacional de Energia Nuclear* in Brazil. It also benefited from the steady support of Brazilian and Argentine technicians and laboratories.

ABACC has also taken part in the principal global symposia on safeguards, presenting technical works. It was invited to participate in a number of meetings and seminars on safeguards and non-proliferation.

ABACC is today equipped with:

- a highly reliable accounting system;
- a group of properly-qualified inspectors;
- a fully-implemented inspection and monitoring system;
- a solid technical support structure based on its own laboratories and human resources, in both countries, which is constantly fine-tuned; and
- a planning and evaluation system that

has proven effective in assessing nuclear activities in Brazil and Argentina, favored by the size of the system which allows good knowledge of the facilities and the nuclear program in both countries.

The activities of ABACC progressed satisfactorily during 1997, its fifth year in operation, with the most important point warranting attention among its achievements for the year being improvements in the implementation of coordination mechanisms between the IAEA and ABACC - reflected in the implementation of the Guidelines for the Coordination of Routine and Ad-Hoc Inspections - negotiating safeguard approaches for enrichment plants in Brazil and Argentina, and the progress in negotiations and approval of some Facility Attachments for Brazilian and Argentine installations.

Another outstanding achievement in 1997 is the approval of the wording of the Cooperation Agreement between ABACC and the IAEA, which should be signed shortly. A Cooperation Agreement with EURATOM is at an advanced stage in negotiation and will probably be signed in 1998. Additionally, contacts have been established with Japan and Korea, in order to exchange information and develop more effective technical cooperation.

Based on the nuclear material verification activities carried out in compliance with the basic commitment of the Bilateral Agreement, in 1997 ABACC did not detect any facts that could indicate any diversion of nuclear material for the fabrication of weapons or other nuclear explosive devices, following the procedures established by the Common System for Accounting and Control of Nuclear Materials - SCCC.

**Carlos Feu Alvim**  
*Secretary of ABACC*





The principal body of ABACC, the Commission met four times during 1997, at three ordinary meetings and one extraordinary meeting. In the course of these meetings, the Commission took eight formal decisions, among which the following warrant particular attention.

- The Annual Report of the Secretariat for 1996 was approved and, after the introduction of the corresponding modifications, was forwarded to the Governments of Argentina and Brazil in compliance with the provisions of the Bilateral Agreement for the Exclusively Peaceful Use of Nuclear Energy.
- The 1998 Work Plan of the Secretariat was approved, with an Operating Budget of US\$ 3,050,000 for 1998.
- The List of ABACC Inspectors was updated so that the Secretariat knows effectively with which inspectors it may count on for each country. The updated list is given in the Chapter on Administrative & Financial Activities.

The Commission also assessed the partial reports and the four-monthly balance sheets submitted by the Secretariat and issued the corresponding Guidelines for the activities to be carried out thereby, in relation to the

application of safeguards and implementation of International Agreements. Additionally, the Commission approved some updates in the Auxiliary Staff System and the *per diem* system, and requested the Secretariat to

Carlos Feu Alvim transfers the position of Secretary of ABACC to Elías Palacios

set up a Technical Cooperation Advisory Group in order to analyze the ABACC Technical Cooperation Program.

At the end of the year, and as established in Article XII of the Bilateral Agreement, the Commission officially recorded the transfer of the position of Secretary to Eng. Elías Palacios from 12 December 1997 onwards, with the position of Deputy Secretary held by Dr. Carlos Augusto Feu Alvim da Silva.



Members of the Commission meet at ABACC headquarters.

The Ad-Hoc Group which provides advisory services to the ABACC Commission on topics related to sensitive facilities, met in April and, having analyzed the documents submitted by the ABACC Secretariat and the Advisory Group for Non-Destructive Analysis (NDA), recommended the adoption of the procedures proposed by the Secretariat for the Pilcaniyeu enrichment plant facilities in Argentina and the Isotopic Enrichment Laboratory in Brazil. The Group also recommended some supplementary studies and measures. The Commission adopted the Report of the Ad-Hoc Group and requested the Secretary to implement the recommended measures.





## Full Members

### **F**ederative Republic of Brazil

**Celina Assumpção do Valle Pereira\***

Director General of the International  
Organisms Department  
Ministry of Foreign Affairs

(until June, Ambassador José Maurício Bastani was a  
Member of the Commission)

**José Mauro Esteves dos Santos**

President  
National Nuclear Energy Commission

### **R**epublic of Argentina

**Pedro Raúl Villagra Delgado**

Director-General for International Safety,  
Nuclear and Space Affairs  
Ministry of Foreign Affairs,  
International Trade and Religious Matters

**Dan Beninon**

Chairman of the Board  
National Nuclear Regulatory Authority



## **A**cted as Alternate Members

**Antonio Valin Guerreiro**

(alternate for  
Celina Assumpção do Valle Pereira)

**Laércio Antonio Vinhas**

(alternate for José Mauro Esteves dos Santos)

**Eduardo D'Amato**

(alternate for Dan Beninon)

**Pedro Sajaroff**

(alternate for Dan Beninon)

**Sonia Fernández Moreno**

(alternate for Dan Beninon)



## ACTIVITIES OF THE SECRETARIAT

- Institutional Activities
- Technical Activities
- Administrative & Financial Activities

## Management and Implementation of Safeguards Agreements

With regard to the Quadripartite Agreement between Brazil, Argentina, the International Atomic Energy Authority (IAEA) and ABACC as the safeguards agreement valid for the Treaty of Tlatelolco, in January and July 1997 ABACC forwarded a declaration to both the Brazilian and Argentine Governments on the application of safeguards in order for them to prepare the corresponding reports for the OPANAL Council, in compliance with the provisions of the Treaty.

## Coordination of Activities with the IAEA

Set up under the Quadripartite Agreement specifically to review the coordination arrangements between ABACC and the IAEA and the development of safeguard methods and techniques, the Liaison Committee met at the head offices of the National Nuclear Energy Commission (CNEN) under its new constitution, which now includes senior authorities in the safeguards areas from all four parties. The terms of reference of the Committee were re-defined, some relevant issues were reviewed from meetings prior to that of the Liaison Sub-Committee and of the Committee, such as the Initial Report, the state of Facility Attachments negotiations, inspection efforts undertaken by IAEA and ABACC in both countries, and the current state of procedures for coordinating inspections. The IAEA presented the Safeguards Implementation

Reports for 1995 and 1996 as well as the current status of the Program for Strengthening its Safeguards (Program 93+2), with comments from the parties.

The new representation level on the Liaison Committee may be interpreted as a positive indicator with regard to the position of the IAEA and the two countries in relation to the Quadripartite Agreement and their interest in the region-wide system implement under this Agreement.

The document negotiated between the Secretariat and the IAEA entitled "Guidelines for Coordination of Routine and Ad-Hoc Inspection Activities between the Agency and ABACC" (Pursuant to the Safeguards Agreement between Argentina, Brazil, ABACC and the Agency/INFCIRC 435), agreed at the last planning level meeting was formally adopted. This document establishes a basic framework for drawing up specific coordination protocols and in particular for common use of surveillance equipment, seals and other facility equipment, avoiding unnecessary duplication of efforts and maintaining the principle that both organizations should reach independent conclusions.

A proposal for ad-hoc procedures was prepared, for safeguards activities at the Enrichment Pilot Plant in Brazil, where commissioning began in 1997. As stipulated in the List of Actions drawn up by the parties involved in this negotiation, this proposal was forwarded to the IAEA for consideration.

The Operations areas of ABACC and the IAEA met in order to improve inspection coordination, seeking to pinpoint the factors





hampering coordination, with suggestions on how to solve these problems. Additionally, details of the ABACC and IAEA inspection schedules were discussed for both countries, with the necessary alterations.

A Level I coordination meeting was held by ABACC and the IAEA, with a follow-up session, in order to discuss a wide variety of issues. Outstanding among them were the following: a) conditions for common use of COBRA seals at the Embalse Nuclear Power Plant (first practical application of the Guidelines); b) difficulties in coordinating unannounced inspections and the possibility of establishing a common procedure for the verification of domestic transfers. Also noteworthy at these meetings was the mutual understanding that ABACC and the IAEA should strive to reduce inspection efforts, maintaining or increasing the effectiveness of the safeguards, as well as the fact that the wording of the Cooperation Agreement between the two agencies was settled. The status of actions pending from other meetings was also reviewed, such as the last meeting of the Liaison Committee, for instance.

Inspections by ABACC and the IAEA for 1998 were planned in accordance with the procedures agreed at the Working Group Meeting on Planning and Scheduling of Inspections, organized at the suggestion of the Liaison Committee. The Operations areas of ABACC and the IAEA analyzed difficulties resulting in alterations to the inspection schedules very close to the date of an inspection, seeking to resolve this problem as far as possible. The programs to be followed by Brazil and Argentina in 1998, initially discussed

by ABACC with the National Authorities of both countries, were analyzed and agreed by both Agencies.

### **Coordination with the National Authorities in Management of the SCCC**

A meeting was held at the start of the year between the ABACC Secretariat and the National Authorities of Brazil and Argentina to cover specific items vital for the smooth running of this system, including: the current situation of negotiations to the Facility Attachments, their prospects and asymmetries; the course of actions carried out by ABACC related to the IAEA Program for Strengthening its Safeguards System (Program 93+2); a review and update of the General Procedures of the Common System for Accounting and Control of Nuclear Materials (SCCC) in order to compatibilize them with the measures stipulated under the Program 93+2 (Part I); a review of the most effective channels of communication between ABACC and the National Authorities; technical cooperation and staff training activities; inspections coordination between ABACC and the IAEA, and the analytical capacity of Brazilian and Argentine laboratories to handle environmental samples.

Towards the end of the year, ABACC met with the Argentine National Authority to review pending issues and check the progress achieved in the implementation of the Bilateral Agreement and the Quadripartite Agreement.

Another joint meeting between ABACC and the National Authorities was held late in the year to discuss a number of issues, including

the status of negotiations for the Facility Attachments (FA); the need to review the General Procedures (GP) of the SOCC with regard to the export of nuclear material; the need to revise the GP-SOCC with regard to channels of communication; training for inspectors and specialists; technical cooperation between ABACC, the Argentine Regulatory Authority (ARN), and the National Atomic Energy Commission of Argentina (CNEA) and the National Nuclear Energy Commission in Brazil (CNEN); verification of domestic transfers, and the supply to ABACC of the operating programs for the most important facilities, in order to act as a basis for the inspections schedule, in the most realistic possible manner.

### Upgrading (Strengthening and Rationalization) of Safeguards

The ABACC Secretariat took part as an Observer in the meetings of the Committee established by the Board of Governors of the IAEA in order to draft a Protocol Additional to the INFCIRC/153, through which the Member States could agree with the measures of Part II of the Program for Strengthening the Safeguards System (Program 93+2). The Secretariat was represented at the first meeting of the year in January, as well as at the second meeting in April.

### Secretariat Operations

On 16 January, Dr. Elías Palacios assumed his functions at ABACC as the most senior member in the Argentine hierarchy, taking over the position of Deputy Secretary.

Early in the year, the Secretary of ABACC traveled to Tokyo to take part in a seminar at the invitation of the Japanese Government, and met with the director of the Nuclear Material Control Center (NMCC). On this occasion, agreements were reached over some topics for possible technical cooperation. On the same opportunity, contacts were made with the Safeguards Director of EURATOM over more intensive contacts with ABACC.

Taking advantage of the same trip and pursuant to understandings reached during a visit of the Director of the Korean Atomic Energy Research Institute to ABACC, a visit to Korea was scheduled for the Secretary. In addition to visits to nuclear power plants and CANDU-type power plants, contacts were established with the authorities at the Ministry of Science and Technology, who seemed most interested in the ABACC model. The Secretary also gave a lecture at the Technology Center for Nuclear Control (TCNC). There was an immediate, fruitful exchange of experience, and bases were established for future cooperation. Within this context, a Senior Researcher from the Safeguards Department of this Center visited the ABACC offices in October and exchanged ideas with ABACC officers on matters of common interest, agreeing that the first topic to be undertaken jointly would be the application of safeguards at CANDU-type reactors.





The fifth anniversary of ABACC was celebrated by a number of events, the most important of which was an act involving the presidents of Brazil and Argentina. On 10 October, the ABACC Secretariat organized the technical seminar entitled ABACC: Five Years

From left: Aníbal Herrera Vegas, Dr. Coll and Aníbal Sardenberg



Wide-angle view of the seminar (Puntes auditorium)

Applying Safeguards, held in the auditorium of *Puntes Centrais Eléctricas S.A.* The Secretary of ABACC, Carlos Feu Alvim, opened the event, and the Secretary of Strategic Affairs of the President's Office of the Federative Republic of Brazil, Ambassador Ronaldo Sardenberg gave a speech stressing the importance of ABACC as a control agency. The former Secretary of ABACC, Dr. Jorge Coll, made a presentation on the five years of ABACC applying safeguards.

This seminar consisted of two technical sessions: one on regional safeguards and the

other on the implementation of safeguards. The first session was chaired by Dr. José Mauro Esteves dos Santos, the President of the National Nuclear Energy Commission (CNEN), with speeches on the implementation of safeguards by EURATOM; the implementation of IAEA and ABACC safeguards; the role of the national systems in the application of safeguards; (d) the Quadripartite Agreement in light of Program 95+2; and the application of IAEA safeguards in the USA. At the second session, chaired by the Director of Operations-B of the IAEA Safeguards Department, Dr. Dirk Schriefer, presentations were given on: safeguards in CANDU-type reactors; safeguards in an Argentine CANDU-type reactor; safeguards at enrichment plants in Japan; and

safeguards at enrichment plants in Brazil and Argentina. The Ambassador of the Argentine Republic in Brazil, Ambassador Jorge Hugo Herrera Vegas, gave the closing speech, and the Deputy Secretary of ABACC,

Eng. Elías Palacios declared the seminar closed.

The ABACC Secretariat also took advantage of the ceremony opening the third course for ABACC inspectors on 30 October in Buenos Aires to organize an event celebrating the fifth anniversary of the Agency, in the auditorium of the Argentine National Atomic Energy Commission. Speeches honoring ABACC were given by Minister Julio Freyre, representing the Argentine Chancellor; the Brazilian Ambassador in Buenos Aires, Ambassador Luis Felipe de Seixas Corrêa; the





From left: Dr. Coll, Dr. Beninson, Min. Freyre, Dr. Fou Adrin, Amb. Setras Carrera, Amb. Román-Morey and Eng. Palacios.

Secretary-General of the Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean, Ambassador

Henrique Román-Morey; the President of the Argentine Nuclear Regulatory Authority, Dr. Dan Beninson; and the former Secretary of ABACC, Dr. Jorge Coll.

On 10 November, the Presidents of Brazil, Fernando Henrique Cardoso, and Argentina, Carlos Saúl Menem, signed a Joint Declaration on the occasion of the fifth anniversary of ABACC, unveiling a commemorative plaque at ceremony held at the Planalto Palace in Brasília.

At the invitation of the Secretary-General of the Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean -

Carlos Menem and Fernando Henrique Cardoso unveil the plaque commemorating the 5<sup>th</sup> Anniversary of ABACC.



OPANAL, ABACC took part as an observer in the XV regular period of sessions of the General Conference of this organization, held in Mexico



Argentine authorities present at the ceremony.

City in July.

ABACC also took part as an Observer at the 41<sup>st</sup> General Conference of the IAEA held

in Vienna, Austria, from 29 September to 3 October. ABACC was represented by its Secretary and the responsible for Institutional Relations, Ana Claudia Raffo. On this occasion, the Secretary of ABACC gave a speech on the activities and prospects of ABACC. The Technical Cooperation Agreement between ABACC and the IAEA was approved during this General Conference and should be signed by the General Director of the IAEA and the Secretary of ABACC on a date still to be defined.

The Working Group of the IAEA's Standing Advisory Group for Safeguards Implementation (SAGSI) met at the ABACC offices for two days in October. ABACC staffers gave presentations on the background to the establishment of the agency, its work plan for 1998 and its priorities, the coordination and activities between ABACC and the IAEA and the activities being carried out in cooperation with other organisms and agencies. Discussions were also held over cooperation with the IAEA and the implementation of the safeguards covered in the Quadripartite Agreement, the development of future relations between ABACC, the IAEA and the Member States, and options to fine-





tune the implementation of safeguards; the implementation of current measures to strengthen safeguards; the possible future role of ABACC as a regional agency for the implementation of the Protocol Additional to the Quadripartite Agreement and international cooperation with ABACC, based on its needs and intended to enhance its technical capacity. Both ABACC and the members of the SAGSI Working Group noted that the exchange of information was very fruitful.

In January, the home page of ABACC was launched at the following address: <http://www.abacc.org>. This Internet site contains general information on ABACC, in addition to its publications and works presented at symposia, seminars and congresses. The 1996 Annual Report and two issues of ABACC News were published and widely distributed. The



Members of the  
SAGSI Working Group

articles in these publications are available for consultation at the ABACC site on the Internet.

In 1997, ABACC was represented at the following technical and scientific events:

- International Seminar on Nuclear Weapon-Free Zones in the Next Century (*Las Zonas Libres de Armas Nucleares en el Próximo Siglo*), organized by OPANAL in Mexico City in February. Participation of the

Deputy Secretary, Elías Palacios.

- Technical Topical Meeting on Software Tools for Remote Monitoring, a Symposium held at the Sandia National Laboratory, and organized by the International Remote Monitoring Project. Presentation of the work entitled "ABACC Activities in Remote Monitoring", in February. Participation of Technical Support Officer Luis Rovere.

- Symposium on The Role of National and Regional Safeguards: Past, Present and Future, held in Tokyo in February. Participation of the Secretary, Carlos Feu Alvim.

- 1st Uranium Enrichment Exercise of the ESARDA Working Group on Techniques and Standards for Non-Destructive Analysis, held at Geel, Belgium, in February. Participation of Technical Support Officer Gevaldo Almeida, and Consultant Inspector Osvaldo Cristallini.

- Russian International Conference on Nuclear Material Protection, Control and Accounting, held at Obninski, Russia, in March. Participation of the Secretary.

- Training course on State Systems of Accounting for and Control of Nuclear Materials held in the USA in May. Participation of Planning and Evaluation Officer Marco Marzo, at the invitation of the IAEA and the US Department of Energy, as an instructor.

- Workshop on the Use of New Levels of Radiological Protection in Brazil held at the Radioprotection and Dosimetry Institute (IRD-CNEN), to celebrate the 25<sup>th</sup> anniversary of this Institute, in May. Participation of the Deputy Secretary.

- Workshop on Safeguards: Verification Techniques and Related Experience, held in Vienna in May. Presentation of the work

entitled "Nuclear Verification in Argentina and Brazil", by the Secretary.

- ESARDA Congress held in Montpellier, France. Works presented: "Some Comments on Termination of Safeguards under Article 10a of the Quadripartite Agreement (Article 11 of INFCIRC/435)" by Alfredo Biaggio and Marco Marzo; and "ABACC Records Auditing Procedures" by Rubén Nicolás, in May. Participation of Planning and Evaluation Officer Alfredo Biaggio, and Accounting Officer Rubén Nicolás.

- Workshop on Middle East Security, at the invitation of the Stockholm International Peace Research Institute - SIPRI, in order to give a presentation on "The ABACC model" in Stockholm, in May. Participation of

- International symposium on Nuclear Fuel Cycle and Reactor Strategies, organized by the IAEA, in Vienna, Austria, in June. Work presented: "Regional Safeguards Arrangements: The Argentina-Brazil Experience" by Marco Marzo and Horacio Lee Gonzales (ABACC), Maria Clarisse Lobo Iskin (CNEN) and Hugo Vicens (ARN). Participation of Operations Officer Horacio Lee Gonzales, and Planning and Evaluation Officer Marco Marzo.

- Symposium on the Globalization of Nuclear Activities organized by the Latin American Section of the American Nuclear Society (LAS/ANS), Rio de Janeiro, in June.

Presentation of the work entitled: "The Importance of a Regional Organism in the Application of Modern Safeguards" by Ana Claudia Raffo and Elías Palacios. Participation of the Secretary, the Deputy Secretary and the Responsible for Institutional Relations of ABACC, Ana Claudia Raffo.

- Round Table on Assessment of International Nuclear Safeguards Agreements, organized by the Brazilian Nuclear Energy Association - ABEN, Rio de Janeiro, in June. Participation of the Secretary.

- 38<sup>th</sup> Annual Meeting of the Institute of Nuclear Materials Management - INMM, Phoenix, USA, in July. Presentation of works entitled: "Algorithm to determine the Calibration Parameters for a NDA method of Inventory Verification in a



Exhibition of panels on ABACC activities.

Diffusion Enrichment Cascade" by Geraldo Almeida and Carlos Feu Alvim (ABACC); and "Measurements of Short Time Cooled PWR Fuel Element with a Fork Detector" by Howard Menlove and Douglas Reilly (LANL); Olga Mafra, Geraldo Almeida and Luis Rovere (ABACC); Emmanouel Gryntakis (IAEA); Osvaldo Calzetta Larrieu (CABA/CNEA). Participation of the Deputy Secretary and Technical Support Officer Geraldo Almeida.

- Symposium on International Safeguards organized by the IAEA in Vienna, in October. Presentation of the following works: "Basic Aspects of a Safeguards Approach for a



The inspection efforts in Argentina shrank due to trimmer inspection efforts at the Embalse Nuclear Power Plant. The various activities carried out during the Physical Inventory Verification inspections, Interim inspections and inspections of the transfer of spent fuel elements to the dry storage silos were analyzed in detail by ABACC, the IAEA and the Nuclear Regulatory Authority (ARN), agreeing on the simplification of some procedures. Additionally, the implementation and acceptance of the dual containment system at almost all the silos reduced the inspection efforts of both agencies. Further modifications proposed by the Embalse Working Group for the transfer of spent fuel elements to the dry



Inspection activities



storage silos are now being field-tested, which could well reduce inspection efforts even more at this facility.

Argentina	Brazil
Containment seals placed: 324	Containment seals placed: 215
Containment seals removed: 306	Containment seals removed: 127

Work continued on detailing the inspection activities for the Inspection Handbook and the Inspection Data-base Program which is already used routinely by the

inspectors. Discussions continue on the integration of this data-base with others already in operation at ABACC, as well as shifting to software that is more user-friendly.

## Technical Support

In 1997, the following equipment was received in order to meet the requirements of verification and measurement activities for nuclear materials, as well as containment and surveillance.

### Verification and Measurement:

- 1 Hyper-pure low-power Germanium plane detector;



Inspection activities



Some containment seals used by ABACC.

- 1- 25% efficiency hyper-pure Germanium coaxial detector;

- 1 Dewar for liquid nitrogen and accessories;

- 1 Slab type neutron detector;

- 1 Portable probe with scaler and ratemeter;

Isotopic standards from the Russian Federation with enrichment in the range of 0.1992 - 20.997% for calibration of mass spectrometers.



Records were maintained of the doses received by employees and inspectors through dosimetric films.

In 1997, seventeen samples of nuclear materials

were taken, thirteen of which were analyzed, with four currently undergoing the transfer and analysis process.

A modification was introduced into the experimental surveillance system installed by ABACC at the Isotopic Enrichment Laboratory (LEI) in order to reduce the number of events recorded. With this new configuration, a light beam is used to detect the opening of the access gates to the controlled perimeter, eliminating the volume detector within the area. This new set of three experiments resulted in the establishment of requirements for the definitive system. The revisions of the surveillance system were undertaken jointly with the IAEA.

ABACC is testing surveillance systems in order to define the system to be used for safeguard purposes. In July, the EMOSS surveillance system loaned to ABACC by the *Commissariat à l'Énergie Atomique* (CEA) in France was installed at the Isotopic Enrichment Laboratory (LEI) in order to carry out a series of field trials, assessing the feasibility of its future use. Various tests were carried out at the perimeter access gate, analyzing the system response speed, image quality, camera location, etc. Later, revisions were undertaken jointly with the IAEA.

#### Containment and Surveillance:

- 2 Automatic COBRA optical seal readers, 100 seals, and 500m of optic fiber for seals.

- 1 Gemini System, redundant, with two digital cameras and accessories.

- 1 EMOSS-1 System (on loan under the cooperation Program with CEA/France).

The availability and entry into operation of inspection equipment continued throughout the year, with calibration and maintenance activities carried out by the ABACC Technical Support area and qualified, accredited agencies and institutions such as the Nuclear Engineering Institute (maintenance) and INMETRO (calibration). Work continued on supplementing the infrastructure required for the inspections, with the design and construction of tools and accessories.





A Gemini system consisting of two cameras was installed for trials at the feeder and withdrawal stations of the Brazilian Enrichment Pilot Plant (USIDE), in mid-July. The first revision after a period of two months was undertaken jointly with the IAEA in early October, after which the manufacturer was requested to resolve various problems.

In June, the IV ABACC Inter-Comparison Program was held, with the participation of Brazilian, Argentine and U.S. technicians (New Brunswick Laboratory (NBL) / Department of Energy (DOE)). At this meeting, the materials, standards and analytical schemes were defined for the second exercise of this Program, which is currently under way.

The bases were also established for the participation of ABACC analysis network laboratories in the Safeguards Measurement Evaluation Program - SME currently being run by the NBL/DOE, after distribution of the samples.

In addition to these Programs, ABACC received an invitation from the *Commission d'Établissement des Méthodes d'Analyse - CETAMA/CEA* to participate in the Program entitled *Évaluation de la Qualité du Résultat d'Analyse dans l'Industrie Nucléaire - EQRAIN*. This invitation was extended to

Brazilian and Argentine laboratories in the ABACC analytical network that have already received samples and are analyzing them.

## Accounting and Data Processing

The accounting records data-base was updated through processing 3,476 lines of inventory changes and 3,122 lines covering the nuclear material inventory, corresponding to 551 accounting reports received from Argentina and Brazil from January through December 1997. The transmission of accounting reports on magnetic media, which began officially during the second quarter of this year, has continued with

no problems and few errors have been detected on the diskettes forwarded by the parties.

The data collected during the inspections carried out in 1997 were used to update the audit records data-base, involving the processing of 286 lines of accounting data.

Software is being developed that will allow the inspectors to undertake the audit of the records using a notebook computer, with later data entry by diskette into the ABACC records audit base, as well as including this data in the computerized reports prepared by the inspectors after the inspection.



Sampling nuclear material





The tests for the software developed by ABACC were concluded, leading to computerized readings of data in reports forwarded on diskette by Argentina and Brazil, as well as updating the ABACC accounting data-base and generating diskettes with reports forwarded to the IAEA. Consequently, from the second quarter onwards, the accounting reports from the countries to ABACC and from ABACC to the IAEA were officially transmitted by magnetic media.

The Accounting area also took part in analyzing the nuclear material accounting procedures described in the Facility Attachments being negotiated.

Continuing the exchange of information and experiences with the Safeguards Department at EURATOM, the Accounting Officers met for two days in May with professionals from the Accountancy and Data Evaluation areas, together with inspectors from this Organization, to discuss the current status of the accounting system and similarities in procedures for auditing the records of the EURATOM and ABACC inspections. This exchange was very positive and many similarities were noted between the audit systems of the two organizations.

The Accountancy Officers also attended a meeting with the IAEA Operations Division in May to discuss and learn about record audit procedures for both organizations, pursuant to the request of the Liaison Committee, designed to fine-tune these activities during the inspections. Some results can already be seen from these discussions: (a) more uniform audit procedures, between ABACC and the IAEA, making them more consistent and simpler; (b)

the IAEA inspectors are receiving the Inventory Change Reports - ICR, during the pre-inspection meeting at ABACC, not yet available at the IAEA, which allows the two organizations to compare the records and reports covering the same audit period. ABACC should prepare a report on this action to present at the next meeting of the Liaison Committee scheduled for 1998.

## Enhancing the Technical Capacity of ABACC

The Technical Cooperation Agreement under discussion between ABACC and EURATOM is almost approved. Although the agreement has not yet been signed, contacts have been maintained between the two organizations, in order to select high-priority topics for ABACC from among the possible cooperation areas. Under this scheme, correspondence was exchanged with the Safeguards Directorate of EURATOM and the Joint Research Center—Ispra on how to launch this cooperation and in which areas. As part of this cooperation, a technician from JRC/Ispra was a speaker at the third Safeguards Course for ABACC Inspectors held in Buenos Aires. On this occasion, and later during his visit to the ABACC offices, details of cooperation projects to be launched in the near future were discussed.

Under the technical cooperation program with the U.S. Department of Energy (US / DOE), the annual meeting of the Permanent Coordinating Group - PCG set up to coordinate cooperation activities was held in November in Buenos Aires. ABACC suggested re-structuring

the training project that embrace two activities (Action Sheets – AS) for the annual Inspectors' course, and Workshops / Seminars focused on advanced measurement techniques. With this new suggestion, all general training is allocated to a single Action Sheet, with specific training allocated to the individual Action Sheet for these matters, such as environmental sampling, containment and surveillance, etc. ABACC also suggested finalizing the Action Sheet for remote monitoring trials at the Embalse silos, as well as starting work on a remote monitoring Action Sheet designed to upgrade the technical capacity of both countries in this area, in order to provide technical advisory services to ABACC for the specification, analysis, development and maintenance of these systems. The Action Sheet for laboratory Intercomparison was replaced by a new version covering a broader range of objectives, including a quality control program for the laboratories in the ABACC analytic network. The other projects were maintained (Containment, Surveillance, Environmental Sampling, Data Processing, and NDA Measuring Systems).

## Staff Training and Capacity-Building

During the first week in March, an environmental monitoring seminar was held at the premises of the National Nuclear Energy Commission (CNEN), in Rio de Janeiro. This seminar was organized under the cooperation agreement between ABACC and the U.S. Department of Energy - DOE, as well as the cooperation agreement between CNEN and the DOE. The presentations were given by U.S. technicians from the Pacific Northwest National Laboratory and the Oak Ridge National Laboratory, attended by fourteen Brazilian inspectors and four Argentine inspectors.

In April, two ABACC inspectors training courses were held on the use of the MORE automatic surveillance film review systems, in Buenos Aires and Rio de Janeiro, respectively. These courses were given by technical staff from the IAEA Safeguards Department Training Section, assisted by technicians from the Division of Operations of this Agency, together with ABACC officers. This course represents an

EMOSS surveillance equipment being tested at the ABACC offices.



GEMINI surveillance equipment being tested at the ABACC offices.





laboratories and the characterization of UF<sub>6</sub> for use with isotopic working standards.

In response to the ABACC request and in cooperation with the New Brunswick laboratory, the laboratories in the ABACC analytic network began to participate in the Safeguards Measurement Evaluation (SME) program. The bases for the ABACC participation in this program were established at the Intercomparison Program held in June, and are already being implemented.

In November, a workshop on environmental sampling was held at Ezeiza Atomic Center (Argentine Nuclear Regulatory Authority - ARN laboratories) in Buenos Aires. This workshop was attended by: four Argentine inspectors, two Brazilian inspectors and two Brazilian specialists in environmental sampling measurement. The lectures were given by specialists from the ARN, ABACC, CNEN and DOE, and included practical training in taking samples. The interaction between Brazilians and Argentines, whether or not they were operating in the safeguards area, highlighted the need for further development in the environmental sampling area.

Additionally, activities were launched for an Intercomparison of the analytical results of safeguards sampling between ABACC and the IAEA, continuing through 1998.

## Information Treatment

As already described, data transfers between the National Authorities and ABACC, as well as between ABACC and the IAEA, are now handled by diskette, representing considerable

progress in data reliability and ease of processing.

Upgrade activities continue under way for the inspection and accountancy data-bases which are already in operation.

ABACC officers took part in a workshop on the analysis of safeguard information held in Washington, DC, USA, in October, under the cooperation agreement with the U.S. Department of Energy (DOE).

## Advisory Services of the Secretariat for Technical Training and Capacity-Building

The Secretariat has made good use of the knowledge and know-how of technical staff in both countries in many of its technical activities, particularly the NDA group activities.

The ABACC Commission approved the establishment of a Technical Cooperation Advisory Group for the Secretariat, consisting of technicians appointed by the National Authorities of Brazil and Argentina. The first meeting of this Group took place in April in order to study and analyze the ABACC Technical Cooperation Program prepared by the Secretariat.

A group of specialists invited by the ABACC Secretariat met to analyze the IAEA Report on



Practical exercise in workshop of NDA

the results of environmental monitoring at the Isotopic Enrichment Laboratory in Brazil. This group concluded that the results

confirmed that this facility had not enriched uranium above the declared amounts.



The administration activities of the Secretariat, which consist of providing support for the functioning of ABACC and the implementation of inspections for the control of nuclear materials, continued satisfactorily.



## FINANCIAL STATEMENTS FOR THE YEAR ENDING

on 31 December 1997 (US\$)

<b>1. REVENUES</b>	<b>3,618,643.80</b>
Contribution from the Governments of Brazil & Argentina	3,050,000.00*
Other Contributions	500,000.00**
Financial Revenues	68,643.80
<b>2. EXPENSES</b>	<b>3,308,347.62</b>
Staff	1,782,880.90
Travel	661,105.20
Technical Support	163,946.79
Temporary Assistance	7,949.52
Technical Cooperation	11,632.44
Offices	214,400.31
Utilities	94,769.92
Vehicles & Transportation	13,948.57
Outsourced Services	172,031.00
General	41,033.41
Financial	9,546.79
Technical Cooperation Agreements	135,102.77
<b>3. DEPRECIATION DURING THE YEAR</b>	<b>171,341.19</b>
<b>4. INVESTMENTS DURING THE YEAR</b>	<b>177,207.21</b>
ABACC-General	28,877.49
Technical Cooperation Agreements	148,329.72
<b>5. LETTERS OF CREDIT &amp; OUTSTANDING ADVANCES</b>	<b>50,199.04</b>
<b>6. RESULTS FOR THE YEAR</b>	<b>138,954.99</b>

(\*) Revenues pending receipt on 31/12/97: US\$ 935,766.57. In January/98 ABACC received US\$ 671,278.57 and, on the publication date of this Annual Report, is pending receipt of US\$ 264,488.00.

(\*\*) Financing from the Non-Proliferation and Disarmament Fund (NDF) in the USA for investment in staff training and the purchase of equipment under the ABACC/DOE Cooperation Agreement.

Outstanding among the principal administrative and financial activities are the following:

- Annual Economic and Financial Balance Sheet of ABACC for 1997 prepared and approved by the ABACC Commission.
- An independent external audit was carried out and the corresponding report was forwarded to the Commission.
- The administrative and financial activities of the Secretariat proceeded normally.

**Carlos Augusto Feu Alvim da Silva**  
Secretary

**Elías Palacios**  
Deputy Secretary

### Technical Area

**Alfredo Lucio Biaggio**  
Planning & Evaluation Officer  
**Horacio Lee Gonzales**  
Operations Officer  
**Rubén Nicolás**  
Nuclear Materials Accounting Officer  
**Luis Alfredo Tomás Rovere**  
Technical Support Officer

**Marco Antonio Marzo**  
Planning & Evaluation Officer  
**Olga Mafra Guidicini**  
Operations Officer  
**Lilia Crissiuma Palhares**  
Nuclear Materials Accounting Officer  
**Gevaldo Lisboa de Almeida**  
Technical Support Officer

### Administrative Area

**Marcio Costa**  
Administrative & Financial Manager

**Ana Claudia Raffo Caiado**  
Responsible for Institutional Relations

### Office Staff

**Luiz da Costa Gonçalves**  
**Maria Isabel Reyes Gonzalez**  
**Teresinha Curvelo**  
**Maria Dilma Marcolan Cosetti**  
**Mauro de Souza de Jesus**  
**Max Teixeira Facchinetti (\*)**

### Representatives in Argentina

**Camilo Eduardo Paganini (\*)**  
**Oswaldo Alberto Cristallini (\*)**  
**Leonor Onorati (\*)**

(\*) Autocomensus





	Argentina	Brazil
Consultant Inspectors	Camillo Eduardo Paganini Eduardo Díaz Edúardo Francisco Santos Jorge Antonio Coll Nazario Eduardo Alberto D'Amato Osvaldo Alberto Cristallini Sonia Fernández Moreno	Bernardino Coelho Pontes Fernando da Costa Magalhães Laércio Antonio Vilhas Orpet José Marques Peixoto
Inspectors	Alfredo Lucio Biaggio Alicia Jiménez Dávila Analía Delia Saavedra Carlos Eduardo Rodríguez Carlos Daniel Llacer Daniel Héctor Giustina Eduardo Jesús María Baldocchi Elena Maceiras de Jefimowicz Elías Palacios Gustavo Alfredo Bustos Horacio Martín Lee Gorzales Hugo Albani Hugo Edgardo Vicens Jorge Alberto Chagaray Jorge Omar Remedi Jorge Oscar Gómez Juan Carlos Gensoli Juan Marcos Ferro Juan José Kunst Laura Beatriz Castro de Rossi Leonardo Juan Sobehart Liliana Inés De Lio Lucía Isabel Valentino de Pereyra Luis Alberto Giordano Luis Alfredo Tomás Rovero Luis Rocchetti Marcelo Rojo María Liliana Mairal Mauricio Guillermo Bacher Osvaldo Alberto Calzetta Larrea Pablo Adelfang Pablo Carlos Florido Roberto Horacio Cesario Rubén Fernando Lavayén Rubén Osvaldo Nicolás Susana Beatriz Papadópulos	Bertha Flich de Araujo Carlos Augusto Feo Alvim da Silva Célia Christiana Paschoa Portoghesi Cláudio Luiz de Oliveira Cléber Lopes de Oliveira Cyro Teiti Enokihara Dulce Maria Daher Eduardo de Braga Melo Fábio Cordeiro Dias Florentino M. Palácio Francisco de Assis Brandão Geraldo Lisboa de Almeida Ivan José Tornazelli Ivan Santos João Batista Borges Joel Alvarenga de Souza José Afonso de Barros Filho José Augusto Perrotta José Cláudio Pedrosa José Gláucio Motta Garone José Henrique Barbosa Bezerra José Henrique Buchmann José Osvaldo Vieira Lima José Roberto Tavares de Paiva José da Silva Guimarães Leonardo Souza Dunley Lilia Cristhuma Palhares Luiz Antônio de Mello Marco Antonio Saraiva Marz Maria Clarisse Lobo Iskin Miriam Dias Pacheco Olga Mafra Guidicini Pedro Dionísio de Barros Roberto Stasiulevicius Sérgio Gavazza Sérgio Gonçalves de Almeida Sonia Valéria Gonçalves Vítorio Emílio da Silveira Nunes Walter Pereira

basic safeguards criteria for ABACC were drawn up. The specific criteria for each type of facility will be prepared on a case-by-case basis, shaped by the safeguards approaches to be applied at the various facilities.

Additionally, in order to check the quality of the sample analyses undertaken by various laboratories in the ABACC analytical network, an intercomparison program was undertaken

with positive results, involving twelve of the fifteen laboratories invited to participate.

Summing up activities for 1994: by year-end, ABACC had brought all nuclear materials used in all nuclear activities in Brazil and Argentina under its control, with a start made on the implementation of the Quadripartite Agreement.



## COORDINATION OF ACTIVITIES WITH THE IAEA

The main drive in 1995 was focused on coordinating activities between ABACC and the IAEA, in order to progress and fine-tune the implementation of the Quadripartite Agreement. To do so, many meetings were held at all three coordination levels.

This was not an easy task, as both organizations had to try hard with much goodwill to resolve various problems that arose, varying from discrepancies between inspectors in the field through to lengthy discussions on criteria interpretation.

However, all these problems were finally resolved. The design verification of the few remaining facilities was completed, and the inspections were efficiently coordinated, with an inspection effort for ABACC of 683 inspector/days in the field and 1,489 inspector/days available to the Secretariat.

The principal activity still lacking for completing the implementation of the Quadripartite Agreement - approval of the Facility Attachments - also began this year, with bilateral and trilateral discussions of the draft texts for twelve facilities.

However, considerable progress was achieved in wording the ad-hoc procedures for inspections of sensitive facilities.

Particularly note worthy in 1995 was the wording of the first draft of the document entitled Guidelines for the Coordination of Routine and Ad-Hoc Inspections, designed to avoid unnecessary duplication of activities, based on the principle that ABACC and the IAEA should draw independent conclusions.

The activities undertaken in 1995 lead to the conclusion that the Quadripartite Agreement was virtually implemented, with the exception of the Facility Attachments.



ABACC and the IAEA at a coordination meeting.

## STRENGTHENING SAFEGUARDS

**A**BACC activities in 1996 were focused on enhancing its coordination with the IAEA, as well as monitoring the initial efforts of this agency to implement Part I of its Program for Strengthening the Safeguards system (Program 93 + 2).

The enhancement of coordination between ABACC and the IAEA achieved appreciable progress through the approval and entry into effect of the document mentioned before entitled Guidelines for the Coordination of Routine and Ad-hoc Inspections, which laid down the bases for avoiding unnecessary duplication of efforts. These guidelines are already being deployed by inspectors in the field, although they are limited so far to sharing instruments, tools and equipment, without taking human resources into account.

Within this context, the Common System for Accounting and Control of Nuclear Materials - (SCCC) is particularly noteworthy, as it was designed to apply conventional safeguards, meaning controlling nuclear materials and facilities declared by the countries. Therefore, in parallel to the implementation of the SCCC by ABACC, the IAEA prepared its program to improve the effectiveness and efficiency of its safeguards system, designed to detect materials and facilities not declared by the States. In 1996, it launched the application of Part I of this Program.

The ABACC Secretariat received a specific directive from the Commission to accompany the IAEA in its efforts to implement this program. The Secretariat thus took part in IAEA visits to check the consistency of the initial inventory, as well as discussions and initial measures designed to implement Part I thereof.

Although its role in this Program warrants further consideration, in 1996 ABACC launched its remote monitoring and data transmission activities, and fostered the development of particle analysis capacity in Brazil and Argentina.

In parallel, ABACC also attended meetings held in Vienna as an observer, preparing the Model Protocol Additional to the Agreements between States, and the IAEA for the Application of Safeguards (INFCIRC/540), covering the implementation of Part II of the IAEA Program for Strengthening Safeguards.

*ABACC and IAEA inspectors  
working on the maintenance of  
an Ion Peak Detector...*



*... and testing the  
equipment  
together.*





ABACC inspection efforts in 1996 reached 623 inspector/days in the field, with 1,415 inspector/days available to the Secretariat.

As a result of its efforts during 1996, the coordination between ABACC and the IAEA for

the application of the Quadripartite Agreement progressed satisfactorily, while ABACC also began preparations for its participation in the implementation of the IAEA Program for Strengthening Safeguards.



ANTN:	<i>Asociación Argentina de Tecnología Nuclear</i> (Argentine Nuclear Technology Association)
ABEN:	<i>Associação Brasileira de Energia Nuclear</i> / Brazilian Nuclear Energy Association
ARN:	<i>Autoridad Regulatoria Nuclear</i> / Nuclear Regulatory Authority
AS:	Action Sheet (DOE-ABACC Agreement)
CEA:	<i>Commissariat à l'Énergie Atomique</i> / Atomic Energy Authority
CETAMA:	<i>Commission d'Établissement des Méthodes d'Analyses</i> Commission for the Establishment of Methods of Analysis
CNE:	<i>Central Nuclear Embalse</i> / Embalse Nuclear Power Plant
CNEA:	<i>Comisión Nacional de Energía Atómica</i> / National Atomic Energy Commission
CNEN:	<i>Comissão Nacional de Energia Nuclear</i> / National Atomic Energy Commission
CONUAR:	<i>Combustible Nuclear Argentina S.A.</i>
DIQ:	Design Information Questionnaire
DOE:	U.S. Department of Energy
DAMRI:	<i>Département des Applications et de la Métrologie des Rayonnements Ionisants</i> - CEA / Department for the Application and Metrology of Ionizing Radiation
ESARDA:	European Association for Safeguards Research and Development
EURATOM:	European Atomic Energy Community
FA:	Facility Attachment
IAEA:	International Atomic Energy Agency
ICR:	Inventory Change Report
INFCIRC:	Information Circular (IAEA) (INFCIRC/435: Information Circular which published the Quadripartite Agreement)
INMM:	Institute of Nuclear Materials Management
INVAP:	<i>Investigación Aplicada S.E.</i>
IPEN:	<i>Instituto de Pesquisas Energéticas e Nucleares</i> Nuclear and Energy Research Institute
IRD:	<i>Instituto de Radioproteção e Dosimetria</i> / Dosimetry and Radioprotection Institute
LEI:	<i>Laboratório de Enriquecimento Isotópico</i> / Isotopic Enrichment Laboratory
LOF:	Location Outside Facility - any place where nuclear material is used or stored in quantities equal to or less than 1 Kg. effective
MBA:	Material Balance Area
MBR:	Material Balance Report
NDF:	Non-Proliferation and Disarmament Fund
NPT:	Treaty on the Non-Proliferation of Nuclear Weapons
OPANAL:	<i>Organismo para la Proscripción de Armas Nucleares en América Latina y el Caribe</i> Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean
PIL:	Physical Inventory List
SCCG:	<i>Sistema Comum de Contabilidade e Controle de Materiais Nucleares</i> Common System for Accounting and Control of Nuclear Materials
USIDE:	Uranium Enrichment Pilot Plant (Brazil)