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## BRAZILIAN-ARGENTINE AGENCY FOR ACCOUNTING AND CONTROL OF NUCLEAR MATERIALS (ABACC)

**Membership:** Argentina and Brazil.

**Established:** 18 July 1991 (Guadalajara Agreement).

**Background:** The Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) was established under the agreement between Argentina and Brazil for the exclusively peaceful use of nuclear energy, and signed at Guadalajara, Mexico on 18 July 1991. ABACC is responsible for the administration and application of the Common System of Accounting and Control (SCCC), which is a full-scope safeguards system applied to all nuclear activities covering all nuclear materials in both countries.

Highlights of Brazilian-Argentine Cooperation:

- 1980: Agreement between Brazil and Argentina on the peaceful uses of nuclear energy.
- 1985: Declaration of Foz de Iguassu on peaceful purposes of Argentine and Brazilian nuclear programs.
- 1986: Declaration of Brasilia.
- 1987: Declaration of Viedma: Brazilian delegation visits Pilcaniyeu gas diffusion enrichment plant in Argentina.
- 1988: Declaration of Ipero: Argentine delegation visits Aramar ultra-centrifuge enrichment plant in Brazil.
- 1990: Declaration of Buenos Aires.
- 1990: Second Declaration of Foz de Iguassu: basis for bilateral control.
- 1991: Signature of Bilateral Agreement (July).
- 1991: Entry into effect of Bilateral Agreement and the signature of Quadripartite Agreement (December).
- 1994: Signature by Argentina (January) and Brazil (May) of the Treaty of Tlatelolco.
- 1994: Entry into effect of the Quadripartite Agreement (March).

Under the Guadalajara Agreement, Argentina and Brazil undertook to use nuclear material and facilities under their jurisdiction or control exclusively for peaceful purposes; to prohibit and prevent in their territories, and to abstain from carrying out, promot-

ing or authorizing, directly or indirectly, or from participating in any way in the testing, manufacture, production, or acquisition by any means of any nuclear weapon; and to prohibit the receipt, storage, installation, deployment, or any other form of possession of any nuclear weapon.

ABACC has its headquarters in Rio de Janeiro, Brazil.

**The Quadripartite Agreement (INFCIRC/435):** The Quadripartite Agreement between Argentina, Brazil, ABACC, and the [International Atomic Energy Agency](#) (IAEA) is a full-scope agreement on the application of safeguards. It was signed on 13 December 1991 and entered into force on 4 March 1994.

The Quadripartite Agreement establishes the following basic undertakings:

- The States Parties undertake, pursuant to the terms of the agreement, to accept application of safeguards on all nuclear activities carried out within their territories or anywhere under their jurisdiction or control, for the sole purpose of verifying that such materials are not diverted to nuclear weapons or other nuclear explosive devices.
- The IAEA shall be entitled to ensure that safeguards are applied in accordance with the terms of the agreement, to all nuclear activities in any place under the States Parties' jurisdiction or control, for the sole purpose of ensuring that these materials are not diverted into unauthorized purposes.
- ABACC undertakes to apply its safeguards to nuclear materials in all nuclear activities carried out in the territories of the States Parties and to cooperate with the IAEA, pursuant to the terms of the agreement.
- The IAEA applies safeguards in a manner to allow verification of the results of the SCCC and thus ensure that no diversion of nuclear materials has occurred.
- Verification by the IAEA includes independent measurements and observations in accordance with the procedures specified in the agreement. In its verification, the IAEA considers the technical effectiveness of the SCCC used by ABACC.

- The States Parties, the IAEA, and ABACC cooperate to facilitate application of the safeguards provided for under the agreement. The IAEA and ABACC work to avoid unnecessary duplication of safeguards activities.

The principles regulating the implementation of the Quadripartite Agreement are:

- ABACC and IAEA should draw independent conclusions.
- ABACC and IAEA should coordinate their activities in order to avoid unnecessary duplication of safeguards efforts.
- ABACC and IAEA should, as much as possible, work together, according to compatible safeguards criteria issued by both agencies, bearing in mind the requirement of preserving technological secrecy.

Procedures for the implementation of safeguards include:

1. Nuclear material accounting, vitally important measures, which are based on the principle of data conservation; applied in Materials Balance Areas; and include measurements made in key points.
2. Containment and Surveillance supplementary measures which provide information on the movements of nuclear material, integrity of items verified, equipment, etc.

The verification process has three distinct stages:

1. Examination of material supplied by the country, including:
  - Information on the design of facilities under safeguards;
  - Accounting reports detailing movements and inventories of nuclear material;
  - Documents covering facility operations providing data for preparation of the reports; and
  - advanced notifications of international transfers.
2. Collection of information by the ABACC as to the outcome of:
  - Inspections to verify design information;
  - Inspections to verify records and reports, and to verify nuclear material; and
  - Special inspections in case of any serious discrepancy.
3. Assessment of information supplied by the country and collected by the inspectors, in order to determine if the information supplied by the country is complete, correct, and valid.

Brazil and Argentina forward the following reports to ABACC:

- Inventory Change Report (ICR), listing all inventory changes taking place over a specified period (for instance, monthly);
- Material Balance Report (MBR), consolidating the material balance over a period (for instance, one year) based on the physical inventory of nuclear material found in a material balance area; and
- Physical Inventory Listing (PIL), carried out regularly (for instance, annually), listing the physical inventory of nuclear material on a specific date.

The objective of ABACC inspections is to verify the validity of the information it receives. The safeguards system used by ABACC relies on the following types of inspections:

1. Visits, which verify information on the facility design.
2. Routine inspections, which verify conformity between reports and records; location, identification, quantity, and composition of nuclear materials; and information on possible causes of material unaccounted for (MUF), differences between shipper-receiver, and discrepancies against book inventory.
3. Ad Hoc Inspections, which verify the information contained in the initial report; identify and verify variations in the situation between the date of the initial report and the date of entry into effect of the Application Manuals; and identify and, if possible, verify the quantity and composition of nuclear materials before transfer to, from, or between the Member States.
4. Special Inspections, which verify the information contained in the special reports; or are used when ABACC feels that the information supplied by a Member State and the information obtained during the routine inspections are not adequate to fulfill its responsibilities. An inspection is considered as special when it is additional to routine inspection activities or implies access to additional information or places.

During the inspections, ABACC inspectors:

- audit documents;
- count and identify items;
- carry out non-destructive measurements of nuclear material;
- apply and verify surveillance equipment and seals; and
- obtain samples of nuclear materials for comprehensive analysis.

At the end of each inspection mission, the inspectors return to ABACC Headquarters to prepare the inspec-

tion report. On the basis of this report, ABACC prepares its inspection assessment, which is forwarded to the national authority of the country, corresponding to the notification of the results thereof.

Since its establishment, ABACC has performed more than 1,200 inspections in 75 nuclear facilities of Argentina and Brazil, representing a total inspection effort of over 4,400 inspectors' days. Accounting and control activities have been performed by a group of 10 professional technicians, with the support of 70 inspectors made available by the two countries, and with around \$20 million in financial resources.

ABACC maintains technical cooperation with several international entities such as the IAEA and EURATOM, and with several other countries, including the United States, France, the Republic of Korea, Japan, and the United Kingdom.

### Developments:

**2004:** On September 17, the 9<sup>th</sup> Meeting of the Quadripartite Agreement's Technical Subcommittee took place in Vienna, Austria. The subcommittee is a forum of the [Quadripartite Agreement](#) to discuss technical issues related to the implementation of safeguards. The forum seeks to improve the effectiveness and efficiency in the application of international and regional safeguards.

The meeting identified potential fields for the application of remote monitoring and of the "unified uranium" category and established work teams for the discussion of the safeguards approach proposed for each one of the conversion plants submitted to the Quadripartite Agreement.

### Principal Organs:

**ABACC Commission:** The commission consists of four members (two members from each country). Among the commission's duties are monitoring the functioning of the SCCC, procuring necessary resources to establish the secretariat, supervising the functioning of the secretariat, preparing a list of qualified inspectors to carry out inspection tasks, and reporting to the parties every year on the implementation of the SCCC.

### Developments:

**2005:** The first two meetings of the year by the commission took place on March 7 and July 4. The meetings considered activity reports, economic and financial balance sheets, the external audit report and the 2006 work plan, and the budget of ABACC. A

report was presented on the status of the negotiations related to the safeguards approach at the uranium enrichment plant of *Indústrias Nucleares do Brasil* (INB), as well as on the tasks carried out after the negotiation. The commission approved the text of the [2004 Annual Report](#). During the second meeting, the new website of the ABACC was launched at [www.abacc.org](http://www.abacc.org).

At its meeting on July 4, the commission decided to summon an ad-hoc advisory group to analyze the safeguards approach for the commercial uranium enrichment plant of INB under negotiations between IAEA and Brazil.

The meeting of the ad-hoc group, consisting of Argentine and Brazilian experts, was held in Rio de Janeiro, Brazil on August 1 and 2. The ad-hoc group considered that the general guidelines, the criteria and the set of actions of the safeguards approach were appropriate and recommended analyzing the possibility of transmitting the "normal operation" signal of the surveillance systems in order to speed up the response in case of a failure. Additionally, the group advised performing periodical reviews of the proposed actions.

**Secretariat:** The secretariat consists of a Secretary and a Deputy Secretary, whose nationalities are alternated each year; a staff of 10 technical officers (including the Secretary and Deputy Secretary), two administrative officers, eight support staff, and 85 inspectors.

Among the duties of the secretariat are implementing directives and instructions issued by the Commission, performing necessary activities for the implementation and administration of the SCCC, and informing the commission immediately of any discrepancy in the records of either of the parties that emerges from the evaluation of the inspection results.

### Verification and Compliance:

**Verification:** Brazil and Argentina have established the Common System of Accounting and Control of Nuclear Materials (SCCC) in order to verify that nuclear materials used in all nuclear activities in both countries are not diverted to purposes prohibited by the agreement. The objective of ABACC is to administer and implement the SCCC: to carry out inspections, to designate inspectors, to evaluate inspections, to engage the necessary services to ensure fulfillment of the SCCC objectives, to represent the parties before third parties in connection with the implementation of the SCCC, and to take legal action. The Quadripartite Agreement between the two Governments, the ABACC, and the International Atomic Energy Agency (IAEA) gives the IAEA the responsibility of

applying full safeguards in both countries. *Compliance*: If a country was found to be in non-compliance, the IAEA would refer the case to the United Nations Security Council.

#### Developments:

**2005:** On March 29 and 30, a coordination meeting between ABACC and the IAEA was held in Vienna. Both agencies performed a review of the situation concerning the application of safeguards under the Quadripartite Agreement. Information was exchanged with regard to the inspection activities scheduled for the next six months.

**2004:** In February, a coordination meeting between ABACC and the Brazilian National Authority (CNEN) was held to discuss the revision of the terms of the 1993 Agreement of Mutual Cooperation. The meeting considered the introduction of a mechanism to allow for the automatic renewal of the agreement. The meeting also discussed the current status of the Projects of Technical Cooperation and devised general guidelines for inspectors.

On March 15, a coordination meeting between ABACC and the National Argentine Authority (ARN) was held. The meeting reviewed the current status of the Technical Cooperation between CNEN and the ARN. The meeting also discussed issues related to the application of safeguards in the nuclear power plants of Atucha I and Embalse.

On September 13-17, ABACC held negotiations on the facility attachments in Brazilian and Argentine facilities in Vienna, Austria. Regarding the Brazilian facilities, the update of the document corresponding to Indústrias Nucleares do Brasil's fuel manufacturing plant was completed, including the stage for the conversion of UF<sub>6</sub> into UO<sub>2</sub> pellets. An agreement was reached regarding the Argentine Embalse station's document and only a decision by the IAEA is pending for the distribution of the final texts. With regard to the Atucha I Nuclear Power Plant, the facility attachment is at an advanced negotiation stage and a decision from the IAEA is being awaited with regard to the ARN's proposal to use the unified uranium category in order to simplify the registration of the nuclear loss. Currently, only a few facilities in operation are missing the approval of their documents.

The 1993 Agreement of Mutual Cooperation between ABACC and the Brazilian National Nuclear Energy Commission was renewed on November 5.

**2003:** On August 15, Ambassador Celso Amorim of Brazil and Ambassador Rafael Bielsa of Argentina developed a Memorandum of Agreement which reaf-

firmed their countries' "engagement with the disarmament and the non-proliferation of mass destruction weapons."

**2002:** On 16 September at the 46<sup>th</sup> General Conference of the IAEA, the Secretary of the ABACC, Elias Palacios, stated that the IAEA and ABACC are expected to reach an agreement soon on the first guidelines for joint inspection activities at specific facilities. He stated that the conclusion of these guidelines will allow the optimization of the inspection effort applied by the two organizations. The conclusion of these two documents is also a requirement to reach a proceeding known as the "New Partnership Approach" between the IAEA and ABACC in the near future.

**2001:** On 14 August, at the occasion of the tenth anniversary of the ABACC, Brazil and Argentina signed a joint declaration creating the Brazil-Argentine Agency on Nuclear Energy Applications (ABAEN). Through ABAEN, the two countries pledged to cooperate in such areas as the nuclear fuel cycle, nuclear waste, and nuclear energy reactors. This cooperation aimed at promoting the right conditions for the design and execution of joint projects and supplements the Argentine-Brazilian Standing Committee on Nuclear Policy.

**2000:** A technical cooperation agreement discussed between ABACC, the Technology Center for Nuclear Control (TCNC), and the Korea Atomic Energy Research Institute, came into effect on 31 January. The purpose of this arrangement is to foster cooperation between ABACC and the TCNC with regard to accounting and control of nuclear materials.

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