INFORME ANUAL
RELATÓRIO ANUAL
ANNUAL REPORT

2014

ABACC

Garantizando el uso pacífico de la energía nuclear en Argentina y Brasil

Garantindo o uso pacífico da energia nuclear na Argentina e no Brasil

Guaranteeing the peaceful use of nuclear energy in Argentina and Brazil

MIEMBROS DE LA COMISIÓN

Por la República Argentina

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Alterno: Héctor G. Fassi

Dr. Francisco Spano; Lic. Elena Maceiras
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General Director of the International Security, Nuclear and Space Affairs of the Ministry of Foreign Affairs and Worship
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On behalf of the Federative Republic of Brazil

Ambassador Paulo Roberto Campos Tarrisse da Fontoura
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Dr. Angelo Fernando Padilha
President of the Brazilian Commission of Nuclear Energy
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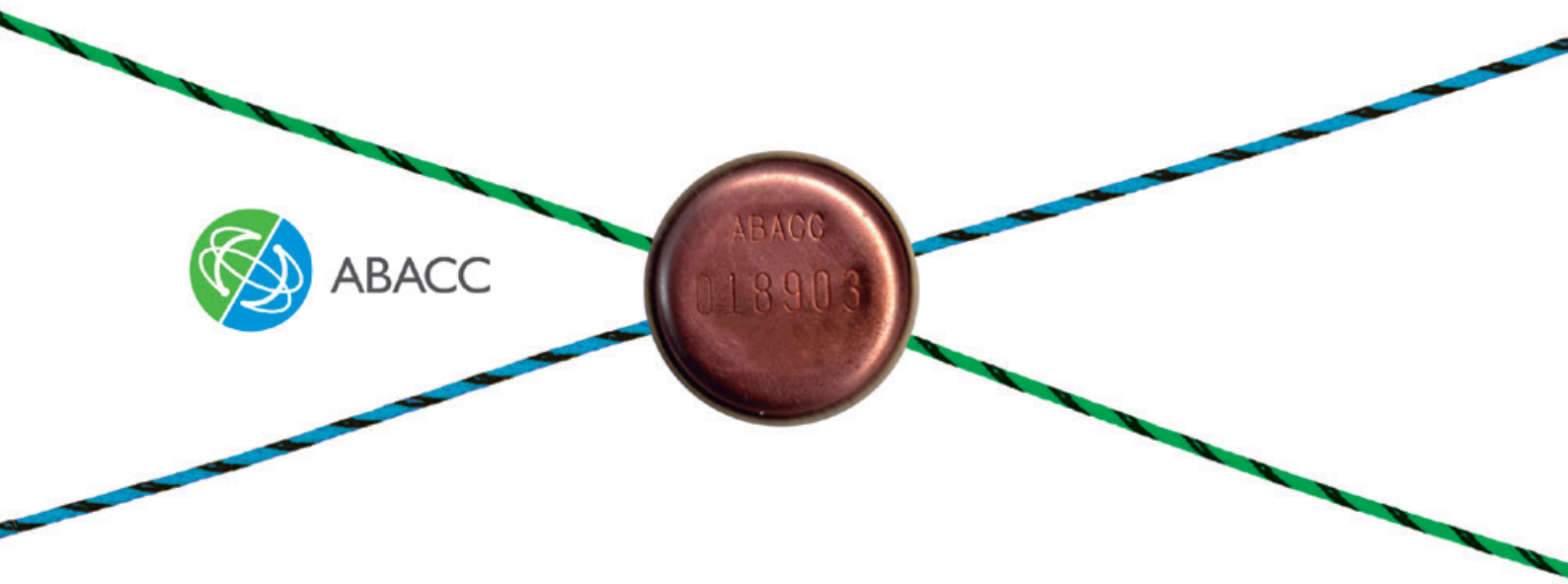

ANNUAL REPORT

MESSAGE FROM THE SECRETARY

The Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC), in accordance with article XI, item i, of the Agreement between the Federative Republic of Brazil and the Argentine Republic for the exclusively peaceful use of nuclear energy, and complying with that established in article 16, item h, of the Regulation of the Secretariat of ABACC, presents its 2014 ANNUAL REPORT. Since 2007, the report has been divided into areas of activity, in order to make it easier to understand.

Argentina and Brazil have established a safeguards system that is unique in the world. Through its consolidation and maturity over almost a quarter of a century, it has succeeded in gaining the respect of the international nuclear community.

In this respect, and with the objective of complying with its mission of the efficient and effective application of nuclear safeguards during 2014, ABACC performed routine and ad hoc inspections in the nuclear facilities of the two countries, in coordination with the International Atomic Energy Agency (IAEA) and with the national authorities. During the year, 118 inspections were performed - 62 in Argentine facilities and 56 in Brazilian facilities – which required an effort of 470 inspector-days in the field and a total availability of 1,070 inspector-days. As a result of this work, ABACC can confirm that Argentina and Brazil completed their activities in the nuclear field in total compliance with the commitments undertaken in the area of nuclear safeguards and nonproliferation. It is important to highlight that these results were possible due to the dedication and professionalism of the officers, the team of inspectors, and the support staff of ABACC.

This, added to the joint use by ABACC and the IAEA of state-of-the-art equipment and technology and the application of safeguards in the nuclear facilities of the two countries, not only complemented the verification, but also facilitated the application of safeguards of ABACC and the IAEA in a most efficient and robust manner.

During 2014, ABACC monitored the growth of the nuclear activities of Argentina and Brazil, responding to the safeguards challenges that arose. Among them, for example, the progress in the uranium enrichment facilities of the two countries, the start-up of the Central Nuclear Atucha II (recently named Presidente Dr. Néstor Carlos Kirchner), the progress of the Produção de Hexafluoruro de Urânio plant in Brazil and the start of the construction of the CAREM reactor in Argentina.

I would like to make a special mention to the role of cooperation with the IAEA in the application of safeguards. This cooperation, a pillar of the verification system and the axis of the regional and international safeguards, has been fundamental in the appropriate implementation of our nuclear verification activity.

In this period, ABACC played a leading role in providing a high level of interaction between the parties and contributing with technical proposals for the progress and conclusion of the safeguards approach

and activities for facilities that are important in the nuclear fuel cycle of both countries. Suffice to mention the progress of the unattended monitoring system to verify the fuel transfers at the Central Nuclear Embalse; and the safeguards procedures of the conversion plants and of the uranium enrichment facilities of Brazil and Argentina.

Therefore, the excellent work environment and the cooperation of the Liaison Committee of the Quadripartite Agreement – a decisive and guiding mechanism in important questions with respect to the implementation of safeguards in Brazil and Argentina – whose thirteenth meeting took place in July this year, indicated significant advances in substantive aspects of the safeguards in the framework of the aforesaid Agreement.

Furthermore, the technical cooperation is of fundamental importance to assure that ABACC remains in the vanguard of new technology and that, in coordination with the IAEA, it seeks the technological changes that have an impact on the application of safeguards. During this period, ABACC and the IAEA arrived at an agreement in the common use procedures of the "Next Generation Surveillance System". In cooperation with the national authorities of Brazil and Argentina, they advanced the possibility of the remote transmission of the state of health of safeguards equipment.

In this technical context, during 2014, ABACC reiterated the decision to validate the sampling method of uranium hexafluoride, known as "ABACC-Cristallini", and began its implementation. To achieve this, ABACC, together with the Support Programs for the Safeguards of Brazil and Argentina, continued pushing for the approval of the method by the IAEA. This method is based on the adsorption capacity of UF6 in alumina pellets and allows for the substitution with important technical advantages of the traditional UF6 sampling, minimizing costs, facilitating transport and reducing radioactive rejects.

It is important to highlight that ABACC is close to completing twenty-five years of existence. During this time, its creators, Argentina and Brazil, have confirmed their total commitment with the strategic decision and with the development and exclusively peaceful use of nuclear energy, through an architecture whose foundations are trust, cooperation and verification. The growing bilateral nuclear integration has translated into specific projects with the construction, in both countries, of multipurpose reactors that will produce essential radiopharmaceuticals for health. This is a process that ABACC has accompanied since the beginning and confirms the significance and validity of the elected model. This model responds to the actual realities of these countries and a region that for over five decades has been declared a zone free of nuclear weapons.

The mature relationship with the IAEA, built over time, allows the two institutions to work in harmony and with significant objectivity. The cooperation agreements between the agencies for the application of safeguards have been developed and put into practice, respecting the basic principles of the

Quadripartite Agreement: the joint performance of the inspections, the coordination of activities in order that they avoid the duplication of human resources and materials, and the independence of the conclusions.

With respect to the basis of these principles, countless mechanisms have been developed for joint action in the use of equipment, personnel and the analysis of the application of safeguards, which has resulted in a significant optimization of resources. The strong interaction of ABACC with the other international players, who are involved in the application of safeguards regimes and favorable to an exchange of experience and knowledge, provides an enriching result for everybody. ABACC has benefitted from cooperation with the IAEA, with EURATOM, with the United States Department of Energy, with the nuclear institutions of the European Community and with the national authorities of Argentina and Brazil.

The participation in international forums of associations that act in the area of safeguards, such as ESARDA and the INMM, allows for the exchange of ideas and important experiences for the qualification of ABACC.

I would also like to emphasize the participation of ABACC as an observer at the meeting of the Board of Governors of the International Atomic Energy Agency, since 2011.

The role of ABACC regarding the Treaty of Tlatelolco should be pointed out, and also the interaction between ABACC and OPANAL, in the quest that the guarantee models are successful in the peaceful use of nuclear energy and the absence of all types of weapons of mass destruction.

Moreover, based on the declarations of the two governments in recent years, ABACC and the IAEA, together with interested parties, should look in the near future towards the application of the Special Procedures established in Article 13, of the Quadripartite Agreement. This establishes the nuclear materials that should be submitted to safeguards as a result of the Agreement and that are used in the propulsion or nuclear operation of any vehicle, including submarines and prototypes.

Since its creation, ABACC has operated with institutional policies devoted to a permanent technical capability of its human resources. The application of these policies and the aforementioned use of state-of-the-art equipment are important factors for its success and the independence of its conclusions.

A determining factor in the achieved success is the recognition and permanent support that the governments of Brazil and Argentina have provided to ABACC. This has been demonstrated by the

historic series of joint declarations of recent governments, which took specific form in the pledge that the chanceries and members of the Commission established to assure the good performance of ABACC, guaranteeing the budgetary resources required for its operation and preserving its institutional independence. These were essential procedures to allow the performance of its mission and to achieve the objectives for which it was created.

The formation of the staff of ABACC, as much its operational team as its inspectors, is an unmistakable demonstration of this support: they all come from institutions that operate in the nuclear area of the two countries. The technical cooperation of ABACC with the laboratories of the distinct organisms and institutions of Argentina and Brazil has always counted on the complete backing of the two governments. This support is materialized in the obtainment of the results of the verifications performed by ABACC, respecting the independence and the credibility of the institution.

In accordance with the policy of the periodic renovation of its staff, in 2014, the Secretariat of ABACC wishes to thank and recognize Orpet José Marques Peixoto and Erwin Gaspar Galdoz for the important work they developed during their period as officers of ABACC. Similarly, we welcome, from the beginning of the year, Luis Carlos Machado da Silva, a new Brazilian Planning and Evaluation Officer and Aníbal Bonino, a new Argentine Technical Support Officer. I am certain that their recognized professional skills will contribute to the continued improvement of our work.

Finally, I would like to take advantage of this opportunity to announce that on January 8, 2015, my contract as the Argentine secretary of ABACC will end. After 9 years in this position, I would like to express my gratitude for the collaboration and support received from the members of the ABACC Commission during my term of office.

Similarly, I would like to express my thanks to my colleagues at ABACC, without distinction of nationality, with whom I have shared almost a decade of work and whose friendship and human quality I have felt profoundly.

I would like to wish every success to Sergio Solmesky, who has been appointed by the ABACC Commission to occupy the position of Secretary for the Argentine Republic in my place.

Antonio Abel Oliveira
SECRETARY OF ABACC
(FOR THE ARGENTINE REPUBLIC)

ACTIVITIES OF THE COMMISSION

The Commission, the highest hierarchical body of ABACC, is responsible for providing the technical and policy guidelines to be applied by the Agency. The Commission has four members, two Argentines and two Brazilians.

The members from Brazil were Ambassador Paulo Roberto Tarrisse da Fontoura and Dr. Angelo Fernando Padilha. The members from Argentina were Ambassador Gustavo Eduardo Ainchil and Dr. Francisco Spano, who was subsequently replaced by Lic.Elena Maceiras.

In accordance with that stipulated in the Regulations of the Commission, three ordinary meetings were held: in April, August and November.

At the April meeting, the Commission received the Secretariat-Commission version of the 2013 Annual Report for approval and the 2014 budget estimate. The Audit Report and the Summary of the Accounting Report for the period were also presented.

At the August meeting, the 2015 Work Plan and Budget were approved by the Commission. The Secretariat presented also the list with the name of the three Brazilian candidates for the position of Planning and Evaluation Officer by the Commission.

At the November meeting, Sergio Solmesky was contracted to occupy the highest hierarchical Argentine position in ABACC.

In accordance with the regulatory procedure regarding the rotation of the members of the Secretariat, the Minutes for the Transfer of the Secretariat were signed. Dr. Odilon Marcuzzo do Canto became the Secretary of ABACC and Antonio Abel Oliveira became the Deputy Secretary.

APPLICATION OF SAFEGUARDS

Results achieved in 2014

ABACC fully complied with its mission of applying nuclear safeguards in Argentina and Brazil, as established in the Agreement between the Federative Republic of Brazil and the Argentine Republic for the Exclusively Peaceful Use of Nuclear Energy and satisfying the criteria established by the Common System of Accounting and Control of Nuclear Materials.

The activities for the application of the bilateral safeguards were coordinated with the International Atomic Energy Agency, as provided in the Quadripartite Agreement and in accordance with the criteria established between the two organizations.

Based on the results obtained in the inspections and in the performed verification activities, ABACC can confirm that no indication of non-compliance was detected with respect to the clauses of the Agreement between the Federative Republic of Brazil and the Argentine Republic for the Exclusively Peaceful Use of Nuclear Energy.

In order to obtain these results, ABACC counted on the support of its entire team and the cooperation of the Autoridad Regulatoria Nuclear, the Comissão Nacional de Energia Nuclear and the International Atomic Energy Agency.

The nuclear activities of the two countries are expanding, which requires a greater work effort by ABACC in the development of the safeguards approach, in inspection and verification activities, and also in technical support activities.

This year, ABACC, in coordination with the International Atomic Energy Agency, performed 118 inspections in which 1,070 inspector-days were made available:

- **597 in Argentina,** for the inspections themselves, the pre-inspection and post- inspection activities, and the technical activities for equipment installation and maintenance.
- **473 in Brazil,** for the inspections themselves, the pre-inspection and post- inspection activities, and the technical activities for equipment installation and maintenance.

Main activities developed in the facilities of Argentina

During 2014, ABACC performed 62 inspections in 28 Argentine facilities among the 45 under safeguards according to the Bilateral and Quadripartite Agreements, applying the specific safeguards approach and criteria.

This item includes only the activities referring to the inspections and verifications that had the highest profile during the year, as well as the technical activities and the advances obtained in the development and approval of the safeguards approach, procedures and techniques.

CENTRAL NUCLEAR EMBALSE

In addition to the routine inspections, the inspectors from ABACC and the IAEA verified the spent fuel transfer campaign from the storage pool to the silos. This took 123 inspector-days and represented a large part of the ABACC inspection effort in Argentina.

The task to implement the Unattended Monitoring System – UMS that will monitor the verification of the spent fuel transfers to the silos continued throughout the year. The collaboration of the Autoridad Regulatoria Nuclear and the operator were fundamental in this work.

ABACC, in conjunction with the IAEA, reviewed all the procedures of use of this system. They will be tested during the next transfer campaign. Once in operation, this system will significantly reduce the inspection effort at this facility.

CENTRAL NUCLEAR PRESIDENTE JUAN DOMINGO PERÓN[1]

ABACC and the IAEA analyzed the safeguards procedures to be used for the verification of the spent fuel transfers from the Central Nuclear Presidente Juan Domingo Perón to the Central Nuclear Presidente Dr. Néstor Carlos Kirchner. These procedures include the use of containment and surveillance equipment that, together with the routine inspections, will maintain information about the transferred fuel.

ABACC and the IAEA followed-up the development of the design for the dry storage deposit that is under construction, in order to determine the safeguards procedures to be adopted.

The monitor and the battery source were replaced in the Integrated System for Counting Spent Fuel Elements and maintenance was carried out on the surveillance system.

CENTRAL NUCLEAR PRESIDENTE DR. NÉSTOR CARLOS KIRCHNER[2]

ABACC and the IAEA placed the Integrated System for Counting Spent Fuel Elements into operation and the new Next Generation Surveillance System.

These activities allow the reactor to enter into operation satisfying the safeguards criteria. The Central is already subject to the normal regime of inspections by ABACC and the IAEA.

FÁBRICA DE ELEMENTOS COMBUSTIBLES NUCLEARES DE CONUAR

Short notice random inspections based on the agreed procedure and the annual physical

[1] In 2014, the Central Nuclear Atucha I changed its name to the Central Nuclear Presidente Juan Domingo Perón.
[2] In 2014, the Central Nuclear Atucha II changed its name to the Central Nuclear Presidente Dr. Néstor Carlos Kirchner.

inventory verification inspection were performed together with activities for the design information verification.

REATOR PROTÓTIPO CAREM 25

The first inspection of the design information verification was performed for the prototype of the CAREM 25 reactor – the name given to the Central Argentina de Elementos Modulares to designate the design of this medium and low power electric generation reactor.

PLANTA DE CONVERSIÓN A UO_2

ABACC and the IAEA performed inspections for the verification of the domestic transfers of the nuclear material, the verification of the campaign for the recuperation of residues, as well as the verification of the physical inventory and design information.

ABACC presented the general lines of the safeguards approach of this facility to the IAEA. These were based on the parameters analyzed by the ABACC-IAEA-ARN workgroup and have uranyl nitrate as the initial point of application of safeguards.

MOCK UP LABORATORY

The safeguards approach of this uranium enrichment laboratory is already in operation. It has been applied in the verification of the physical inventory and in successive performed inspections.

Main activities developed in the facilities of Brazil

During 2014, ABACC performed 56 inspections in 17 Brazilian facilities among the 27 under safeguards according to the Bilateral and Quadripartite Agreements, applying the specific safeguards approach and criteria.

This item includes only the activities that had the highest profile in respect of the performed inspections and verifications, as well as the technical activities and the advances obtained in the development and approval of the safeguards approach, procedures and techniques.

CENTRAL NUCLEAR ALMIRANTE ÁLVARO ALBERTO – ANGRA 1

In addition to the routine inspections at the facility, a new support was installed for the camera that performs the temporary surveillance of the reactor core, which will be used during the fuel recharging. This support will improve the safety conditions of the inspectors during the installation and operation of this camera.

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FÁBRICA DE COMBUSTÍVEL NUCLEAR – RECONVERSÃO E PASTILHAS/COMPONENTES E MONTAGEM

Short notice random inspections in accordance with the current procedure and the annual physical inventory verification inspection were performed together with activities for the design information verification of the facility.

CENTRO TECNOLÓGICO DA MARINHA EM SÃO PAULO

Announced and unannounced inspections were performed jointly by ABACC and the IAEA at the Planta Piloto para Enriquecimento de Urânio and

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FÁBRICA DE COMBUSTÍVEL NUCLEAR – ENRIQUECIMENTO

Announced and unannounced ABACC - IAEA joint inspections were performed, as established by the safeguards approach.

Important progress was made in the application of safeguards in this facility, such as the entry into force of the safeguards procedures for the controlled visual access in the cascades; the taking of the depleted UF_6 samples in the process line, as an alternative to the full compliance with the inspection targets; improvements in the content of the notification for the anticipated operational information; and the installation of additional weighing, surveillance and containment systems.

at the Laboratório de Enriquecimento Isotópico, as established by the safeguards approach.

The modules of the surveillance cameras installed at the Planta Piloto de Enriquecimento de Urânio and at the Laboratório de Enriquecimento Isotópico were replaced after the performance evaluation.

LABORATÓRIO DE DESENVOLVIMENTO DE ELEMENTOS DE SEPARAÇÃO ISOTÓPICA

The safeguards approach of this laboratory is already in force and has been applied in the inspections performed during the year.

TECHNICAL ACTIVITIES DEVELOPED AT ABACC

ABACC has constantly developed several actions for the efficient application of safeguards. Among them we can highlight:

UPDATE OF THE ACCOUNTING DATABANK

The accounting databank was updated with information from the Inventory Variation Reports, from the Material Balance Reports and from the Physical Inventory Lists received from Argentina and Brazil.

UPDATE OF THE SOFTWARE FOR THE JOINT AUDITING REGISTER – SJAR

The activities for the maintenance of the ABACC software to process the accounting data of the Brazilian and Argentine facilities continued thoughout the year by the e-Gamma program in the case of Brazil, these data are generated developed by CNEN. In the future, will also process the accounting data of the Argentine facilities generated by a program in development by the Autoridad Regulatoria Nuclear. This work will provide greater support to the accounting and audit system during the inspections.

SYSTEM FOR INSPECTION REPORTS EMISSION

A new program for the emission of Inspection Reports is in the testing phase. The results obtained in this phase will be compared to the results of the current program. Once approved, the program will be implemented for routine use.

NEXT GENERATION SURVEILLANCE SYSTEM

The security software of the ABACC Next Generation Surveillance System cameras were updated, which introduced improvements for joint ABACC – IAEA use. The authentication certificates and data cryptography were produced and installed, duly validated by the certification authority . The cameras are available for joint use.

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TECHNICAL TRAINING

One of the most important activities for the effective development of its inspectors and technical team is professional training, which always seeks excellence in performance; consequently, the Argentine and Brazilian inspectors participate regularly in the training programs offerd by ABACC.

With respect to the importance that ABACC bestows upon this activity, courses and individual training are offered that, in many cases, are designed specifically for the type of facility to be inspected. These activities are held at the ABACC headquarters or at the specific facilities and has the collaboration of the national authorities and their laboratories, and the operators of the facilities, among others.

In addition to this training program, ABACC cooperates in regional safeguards courses with the national authorities of Argentina, Brazil and the IAEA. Part of the international cooperation projects that ABACC is involved in is focused on the training of inspectors.

This year, the following courses were offered:

TRAINING IN THE USE OF THE NEUTRON COLLAR AND THE PROCEDURES FOR THE SHORT NOTICE RANDOM INSPECTIONS

Date: *August 6 - 8*
Location: *Indústrias Nucleares do Brasil - Resende, Brazil*

Organized by ABACC, in collaboration with the Indústrias Nucleares do Brasil and CNEN, this course included the participation of one instructor from the IAEA, two instructors from ABACC and one Argentine instructor from ARN.

8 Argentine inspectors from ABACC were trained during this course.

TRAINING FOR INSPECTORS FROM ABACC AND THE IAEA IN THE PROCEDURES FOR THE ANNOUNCED AND UNANNOUNCED INSPECTIONS AT THE BRAZILIAN ENRICHMENT FACILITIES

Date: *September 1 - 5*
Location: *Laboratório de Salvaguardas/CNEN, Rio de Janeiro and Indústrias Nucleares do Brasil - Resende, Brazil*

Organized by ABACC, with the collaboration of CNEN, Indústrias Nucleares do Brasil and the Centro Tecnológico da Marinha em São Paulo. The course was held at the Laboratório de Salvaguardas of the CNEN and at the Indústrias Nucleares do Brasil-Resende. The training

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included the participation of instructors from ABACC, from the IAEA, from the Indústrias Nucleares do Brasil, from Laboratório de Salvaguardas of the CNEN, from the Centro Tecnológico da Marinha em São Paulo and from the US Department of Energy.

10 Argentine inspectors from ABACC and 5 inspectors from the IAEA were trained on this course.

TRAINING FOR INSPECTORS FROM ABACC IN CONTAINMENT AND SURVEILLANCE SYSTEMS

***Date:** October 6 - 10*
***Location:** ABACC, Rio de Janeiro, Brazil*

The training was organized by ABACC, with the collaboration of Sandia National Laboratories. 4 instructors from ABACC and 2 instructors from Sandia participated.

14 Brazilian inspectors from ABACC were trained.

New technology, equipment and developments for the application of safeguards

ABACC is concentrating its efforts in the following systems and techniques, taking into account their joint use with the IAEA:

SYSTEM OF CONTAINMENT BY EOSS SEALS WITH A GUARANTEE OF AUTHENTICATION

ABACC and the IAEA are analyzing the criteria and procedures for the joint use of the EOSS seals to replace the VACOSS seals. The EOSS seals have an authentication system with higher security levels than the VACOSS seals.

NEXT GENERATION SURVEILLANCE SYSTEM WITH A GUARANTEE OF AUTHENTICATION

ABACC and the IAEA have installed the Next Generation Surveillance System at the Laboratório de Enriquecimento Isotópico of the Unidade de Enriquecimento Almirante Álvaro Alberto, at the Planta Piloto para Enriquecimento de Urânio, at the Fábrica de Combustível Nuclear – Enriquecimento and at the Central Nuclear Presidente Dr. Néstor Carlos Kirchner.

TRANSMISSION OF THE STATE OF HEALTH OF SAFEGUARDS EQUIPMENT

ABACC presented the national authorities with a conceptual and technical proposal of the State of Health of Safeguards Equipment to meet with the requirements discussed between ABACC, the CNEN and the ARN for the implementation of the technique in nuclear facilities in Argentina and Brazil.

CERTIFICATION OF THE ABACC-CRISTALLINI SAMPLING TECHNIQUE

The ABACC-Cristallini technique for the sampling of UF_6 is a significant contribution for the more efficient application of safeguards. It has the advantage of reducing the quantity of nuclear material taken at the facilities and simplifying the transport of the samples of radioactive material, among other benefits.

ABACC has developed several activities for the certification of the technique. The next step will be an inter-comparison exercise in which laboratories from Argentina, Brazil, the IAEA, the Oak Ridge National Laboratory and the New Brunswick Laboratory will participate.

ABACC-IAEA COOPERATION

ABACC and the IAEA have been working to establish actions to increase cooperation and to optimize activities for inspection, audit and the joint use of equipment.

Two initiatives are promising and are in the discussion phase. They are:

USE OF ANALYTICAL RESULTS

This initiative proposes the development of a methodology for IAEA to use the results of the destructive analyses performed by ABACC, thereby avoiding the duplication of effort and maintaining the independence of the conclusions of each agency.

To achieve this, it is fundamental to define the requirements and procedures that ABACC and the Network of Supporting Laboratories to ABACC must satisfy to enable the use of the results by the IAEA. As soon as ABACC receives these information they will be analyzed them with the network of laboratories.

USE OF ACCOUNTING AUDITS

As part of the activity of verification, ABACC and the IAEA perform joint accounting audits during the inspections using the Software for the Joint Auditing of Registers developed by ABACC. The proposal of this cooperation action is that the IAEA uses the results obtained by ABACC to arrive at its own conclusions.

Management of the Quadripartite Agreement and of the Common System for Accounting and Control of Nuclear Materials

ABACC, the IAEA and the countries cooperate in the appropriate application of the safeguards established in the Bilateral and Quadripartite Agreements. In order to achieve this, there are several forums such as meetings of the Liaison Committee and the Technical Subcommittee; bilateral, trilateral and quadripartite meetings of technical nature and of coordination in which ABACC, the IAEA and the national authorities participate, as appropriate. Whenever necessary, technical visits are performed to satisfy the required demands with respect to the application of safeguards.

A large part of the positive results obtained in the application of safeguards in the two countries is the result of the extensive discussions held at the technical and coordination meetings that took place during the year between ABACC, the States and the IAEA.

Situation of the design information questionnaires and the application manuals

The Design Information Questionnaires contain the main characteristics of the facilities and the nuclear processes required for the determination of the safeguards procedures to be implemented in the facilities. The Application Manuals are the documents that describe these procedures in general.

The Design Information Questionnaires are updated periodically, either for changes in the facilities, or from information obtained during the inspections.

During the year, 16 Design Information Questionnaires were submitted for review. There are 12 Application Manuals in force for Brazilian facilities and 27 for Argentine facilities. ABACC, in conjunction with the IAEA, is reviewing and preparing 35 Application Manuals.

PRESENCE AT EVENTS

The participation at events held by similar objective institutions allows ABACC to be up to date with new developments that take place in the international scenario. It provides the opportunity to exchange ideas with specialists in the field and allows for the disclosure of the work of ABACC. The participation at the IAEA meetings, the institution with which ABACC has the Quadripartite Agreement, offers the opportunity to monitor what is being developed in the member countries.

This year, ABACC participated in the following events:

- **2014 SPRING MEETING OF INTERNATIONAL PANEL ON FISSILE MATERIALS**

  March 19 – 21
  Rio de Janeiro, Brazil

- **INMM 55TH ANNUAL MEETING**

  July 20 – 24
  Atlanta, United States

  Paper presented:
  Origin of ABACC and the systems of regional safeguards in the application of international safeguards.

- **MEETING OF THE IAEA BOARD OF GOVERNORS**

  September 16 – 20
  Vienna, Austria

- **58TH IAEA GENERAL CONFERENCE**

  September 13 – 27
  Vienna, Austria

- **SYMPOSIUM ON INTERNATIONAL SAFEGUARDS: LINKING STRATEGY, IMPLEMENTATION AND PEOPLE**

  September 1 – 5
  Vienna, Austria

- **WORKSHOP: NUCLEAR DEBATES IN LATIN AMERICA - CARNEGIE-PUC/IRI WORKSHOP**

  November 6 – 7
  Rio de Janeiro, Brazil

TECHNICAL COOPERATION

Technical cooperation with other countries and similar objective organizations is important in order to keep ABACC involved and participating in new developments by applying state-of-the-art technology to operate more effectively and efficiently in the application of safeguards.

WITH THE US DEPARTMENT OF ENERGY

At the 19th Meeting of the Permanent Group of Coordination of the Cooperation Agreement between ABACC and the US-DOE, the actions for all the projects were reviewed. The projects below were discussed in more detail:

- **Action Sheet 21** - Laboratory Quality Assurance through Analytical Standards and Sample Exchange Programs
- **Action Sheet 22** - Cooperation on Developing a Spent Fuel Gross Defect Detection System at ATUCHA-I
- **Action Sheet 26** - Evaluation of the "ABACC-Cristallini Technique" for sampling UF_6 for Isotopic Determination

WITH THE EUROPEAN COMMISSION

ABACC and the European Community, through the Joint Research Center, is collaborating in the use of advanced technology, with potential use in the application of safeguards. The two cooperation projects in the area of equipment in which important progress was made during the year were:

- **3D Laser System Project**
  In addition to the training of inspectors and officers of ABACC, this project considers the use of 3D laser LFR technology to verify alterations in the configuration in piping and equipment in nuclear facilities, with a potential use in design verification activities.
- **Ultrasonic Seals Project**
  This project has the objective the development and use of ultrasonic seals in spent fuel stored in hard to access locations in the fuel storage pools, as well as the training of inspectors and officers of ABACC.

WITH THE KOREA INSTITUTE OF NUCLEAR NONPROLIFERATION AND CONTROL – KINAC

ABACC has two projects with KINAC. They are:

- **Technical Cooperation Project #1**:
  Cooperation and Training
- **Technical Cooperation Project #2:**
  Cooperation on interchanging safeguards concepts on how to improve the collaboration between R/SSAC Systems and the IAEA.

In order to support these two projects, the president of KINAC, Mr.Young-Myung Choi and his delegation, were at ABACC to participate in the 11th annual meeting of coordination of the technical cooperation projects in development between the two institutions.

INSTITUTIONAL ACTIVITIES

In accordance with that established in item i), of Article XI, of the Agreement between the Federative Republic of Brazil and the Argentine Republic and in the Regulation of the Commission of ABACC, the Secretariat of ABACC sent the 2013 Annual Report to the representatives of the Ministry of External Relations of Brazil and of Argentina, for subsequent delivery to the governments of the two countries.

As determined in decision COM-RO-DEC 94-13, of the Commission of ABACC, the Secretariat sent the reports required by the Treaty of Tlatelolco to the governments of Brazil and Argentina, in January and July. These included the information that ABACC had not found any event that could indicate any diversion of significant quantities of nuclear materials to any activity prohibited by the provisions of this Treaty.

The secretaries and officers of ABACC participated in forums and meetings held regularly in the nuclear sector when there was the opportunity to interact with authorities, scholars and technicians from different institutions in Brazil, Argentina and abroad, who were interested in the activities developed by ABACC. They were also invited to participate at events. Among them, a presentation was made at the seminar “The contribution of OPANAL and ABACC to the establishment of Free Zones of Nuclear Weapons”, organized by the Ministry of External Relations with the support of the Alexandre de Gusmão Foundation. Another presentation was “Regional Perspectives: the ABACC experience” delivered at the “Primero curso de verano sobre desarme nuclear y no proliferación” for Latin-American and Caribbean diplomats, organized by the Government of Mexico, in coordination with the James Martin Center for Nonproliferation Studies of the Monterey Institute of International Studies.

Several delegations visited ABACC to learn more about the activities developed in the application of safeguards: a delegation from the Secretariat of Strategic Matters of the Presidency of the Republic of Brazil, from the National Academy of Sciences, from the Brookhaven National Laboratory, from the Nonproliferation Department of the British Ministry of Foreign Affairs and from the Korea Institute of Nuclear Nonproliferation and Control.

On the occasion of the 13th Liaison Committee Meeting, Argentina and Brazil offered the Deputy Director General and head of the Department of Safeguards of the IAEA and delegation, technical visits to the nuclear facilities of the two countries.

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ADMINISTRATIVE AND FINANCIAL ACTIVITIES

The administration of the financial resources, the accounting activities and the internal controls were performed in accordance with the internal regulations and achieved good results in 2014. This is confirmed by the report from the external independent auditors who escamined all the administrative and financial documents of the agency, in response to that established in the statutory regulations. The auditors examined the operations, the books and the accounting records and the supporting documents in accordance with the standards used in Brazil. It was concluded that the financial statements of ABACC adequately represented the assets and financial position and did not demonstrate evidence of any aspect or situation that could affect them.

The continued policy of the Secretariat to evaluate the costs and the investments of the institution are emphasized, whether from the point of view of merit or by adjustment for a balanced budgetary performance.

HUMAN CAPITAL AND ECONOMIC RESOURCES

ABACC is formed by a Secretariat organized into technical and administrative sectors and a Commission with representatives from Argentina and Brazil.

The Secretariat has 22 employees including the secretaries, officers and administrative personnel in Rio de Janeiro and Buenos Aires. Currently there are 54 Argentine inspectors and 49 Brazilian inspectors, who are considered as officials while they are on safeguards missions. In order to maintain the impartiality of the results, the inspections are crossed: the Brazilian inspectors perform the inspections in Argentina and vice-versa. The technical capability and the reputation of the ABACC officials and inspectors are a fundamental support for the competence of ABACC.

During the year, ABACC used economic resources of five million dollars to comply with its mandate and objectives. Argentina and Brazil contributed equally towards the ABACC budget.

OUTLOOK FOR 2015

In order to comply with its mandate, established in the Bilateral Agreement and its role in the Quadripartite Agreement, ABACC has to maintain a state-of-the-art technical infrastructure, both in new technology and equipment, as well as monitoring evolution and anticipating changes. It also has to develop and continually update the approach, the procedures and the techniques that assure the effective application of safeguards. The relationship of parity and partnership with the IAEA in these aspects has been a principle that governs the relationship between the agencies.

ABACC will continue its verification work for the exclusively peaceful use of nuclear energy in Argentina and Brazil, in the context of the policy of nuclear nonproliferation adopted by the two countries.

With respect to the technical evolution regarding safeguards, the Secretariat of ABACC will be alert to new developments that may occur in the international scenario, continually seeking to update and improve its work, through agreements of technical cooperation and participation in important forums, such as the Support Program for the Application of IAEA Safeguards,

Among the main activities that ABACC aims to perform in 2015, the following are highlighted:

- Acquire new equipment and technology for application in safeguards, principally in the area of surveillance, containment and measuring equipment for non-destructive testing, in accordance with the ABACC work plan.
- Proceed with the programmed replacement of the surveillance systems in facilities that have old systems. ABACC has developed a strategic plan of acquisition for these systems over a five year period.
- Finalize the safeguards approach at the Planta de Conversión a UO_2 in Córdoba, and develop a new approach and procedures of appropriate safeguards for the commissioning of the Unidade de Produção de Hexafluoreto de Urânio, in Iperó, Brazil, taking into consideration the use of the Short Notice Random Inspections as one of the most important safeguards procedures.
- Continue with the development of safeguard approaches and the implementation of safeguards in new facilities, with emphasis on the expansion of the Planta de Enriquecimento de Urânio das Indústrias Nucleares do Brasil, for the dry storage deposit at the Central Nuclear Presidente Juan Domingo Perón, for the radioisotope producer reactors and for the Prototype Reactor Project - CAREM 25, in Argentina.

- Make the unattended monitoring system operational so that, in conjunction with the inspections between PIVs and the unannounced inspections, it will replace the current regime of permanent inspections in the transfer campaigns of spent fuel elements to the silos at the Central Nuclear Embalse.
- Implement the procedures and technology of safeguards required to cover the transfers of fuel from the reactor core of the Central Nuclear Embalse to the storage pools and other activities included in the extended working life of the Central.
- Implement the procedures and technology of safeguards to cover the transfers of spent fuel from the Central Nuclear Presidente Juan Domingo Perón to the Central Nuclear Presidente Dr. Néstor Carlos Kirchner.
- Assure the technical capability of ABACC in matters of non-destructive and destructive procedures; invite ad hoc groups to develop a program of technical updates and improvements for ABACC.
- Initiate the implementation of a quality management system in all the operational areas of ABACC.

INSPECTORES DE LA ABACC
INSPETORES DA ABACC
ABACC INSPECTORS

Inspectores Argentinos
Inspetores Argentinos
Argentine Inspectors

Aldo Ernesto Pérez
Analía Saavedra
Aníbal Damián Coppo
Beatriz Norma Gregori
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Carlos Alberto Rojas
Carlos Daniel Llacer
Carlos Darío Fernández
Carlos Eduardo Rodríguez
Christian Fabián Elechosa
Daniel Ángel Geraci
Daniel Héctor Giustina
Darío Osvaldo Colombo
Dora Norma Vidal
Enrique Cinat
Erwin Gaspar Galdoz
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Luis Alfredo Rovere
Marcelo Rojo
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María Carolina Bianchi
María Teresa Alonso Jiménez
Mauricio Guillermo Bachoer
Néstor Daniel Mosquera
Néstor Hugo Fruttero
Norberto Ariel Novello
Norberto José Bruno
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Sergio Adrián Menossi
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Thais Hernández Sánchez
Walter Adrián Truppa

Inspectores Consultores
Inspetores Consultores
Senior Technical Inspectors

Alfredo Lucio Biaggio
Aníbal Bonino
Antonio Abel Oliveira
Elena Maceiras
Elías Palacios
Sonia Fernández Moreno

Inspectores Brasileños
Inspetores Brasileiros
Brazilian Inspectors

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Celia Christiani Paschoa Portoghese
Cláudio Luiz de Oliveira
Cleber Lopes de Oliveira
Cyro Teiti Enokihara
Dilmar Araújo Junior
Dulce Maria Daher
Fábio Cordeiro Dia
Florentino Menchero Palacio
Francisco José de Oliveira Ferreira
Geraldo Renha Junior
Gevaldo Lisboa de Almeida
Hebe Peixoto Schirmer
Irineu do Amaral Gurgel Filho
Ivan José Tomazelli
Ivan Santos
João Batista Borges
Jorge Eduardo Silva Cardoso Santos
José Afonso Barros Filho
José Augusto Perrotta
José Cláudio Pedrosa
José da Silva Guimarães
José Gláucio Motta Garone
José Henrique Buchmann
José Roberto Tavares de Paiva
José Wanderley Santana da Silva
Leonardo Souza Dunley
Lilia Crissiuma Palhares
Luiz Antônio da Silva
Luiz Antônio de Mello
Marcos Sodré Grund
Maria Clarisse Lobo Iskin
Marco Aurélio Monteiro Dutra
Max Teixeira Facchinetti
Miriam Dias Pacheco
Olga Y. Mafra Guidicini
Orpet José Marques Peixoto
Pedro Dionísio de Barros
Ricardo Gonçalves Gomide
Robson Ramos
Sergio Barros Paixão
Silvio Gonçalves de Almeida
Walter Pereira
Wilians Roberto Baldo

Inspectores Consultores
Inspetores Consultores
Senior Technical Inspectors

Bernardino Pontes
Carlos Feu Alvim
Fernando da Costa Magalhães
Francisco de Assis Brandão
Laércio Antônio Vinhas

INSTALACIONES BRASILEÑAS SUJETAS AL ACUERDO CUATRIPARTITO
INSTALAÇÕES BRASILEIRAS SUJEITAS AO ACORDO QUADRIPARTITE
BRAZILIAN FACILITIES UNDER THE QUADRIPARTITE AGREEMENT

NOMBRE / NOME / NAME
Arranjo Grafite-Urânio Subcrítico
Armazenagem ARAMAR
MBA1 – Estocagem
MBA2 – Transferência Gasosa
Central Nuclear Almirante Álvaro Alberto – Unidade 1
Central Nuclear Almirante Álvaro Alberto – Unidade 2
Central Nuclear Almirante Álvaro Alberto – Unidade 3 (En construcción)(Em construção)(Under construction)
Coordenadoria de Desenvolvimento e Tecnologia de Combustíveis (IPEN-CNEN/SP)
Fábrica de Combustível Nuclear - Enriquecimento
MBA1 – Estocagem
MBA2 – Processo
Fábrica de Combustível Nuclear – Reconversão e Pastilhas / Componentes e Montagem
Instalação de Estocagem de Elementos Combustíveis (En proyecto)(Em projeto)(In the planning stage)
Laboratório de Desenvolvimento de Elementos de Separação Isotópica
MBA1 – Estocagem, Purificação e Transferência, Tratamento de Rejeito
MBA2 – Laboratórios
MBA3 – Processo
Laboratório de Desenvolvimento de Instrumentação e Combustível Nuclear
Laboratório de Enriquecimento Isotópico da Unidade de Enriquecimento Almirante Álvaro Alberto
Laboratório de Espectroscopia a Laser
Laboratório de Geração Núcleo-elétrica
Laboratório de Materiais e Combustível Nuclear– (CDTN/CNEN-MG)
Laboratório de Materiais Nucleares
Laboratório de Salvaguardas
Planta Piloto de Enriquecimento de Urânio
MBA1 – Estocagem
MBA2 – Processo
Projeto Reprocessamento
Reator Argonauta
Reator IEA-R1
Reator IPR-R1
Reator Multipropósito Brasileiro (En proyecto)(Em projeto)(In the planning stage)
Subcrítica Universidade Federal de Pernambuco
Unidade de Armazenamento Complementar de Combustível Irradiado da CNAAA (En proyecto)(Em projeto)(In the planning stage)
Unidade Crítica IPEN/MB-01
Unidade de Produção de Hexafluoreto de Urânio
Unidade Crítica IPEN/MB-01
Unidade de Produção de Hexafluoreto de Urânio

INSTALACIONES ARGENTINAS SUJETAS AL ACUERDO BILATERAL Y CUATRIPARTITO
INSTALAÇÕES ARGENTINAS SUJEITAS AO ACORDO BILATERAL E QUADRIPARTITE
ARGENTINE FACILITIES UNDER THE BILATERAL AND QUADRIPARTITE AGREEMENT

NOMBRE / NOME / NAME
Bunker de Almacenamiento
Central Nuclear Atucha I
Central Nuclear Atucha II
Central Nuclear Embalse
Circuito Experimental de Alta Presión
Circuito Experimental de Baja Presión
Departamento de Instrumentación y Control
Depósito Central de Material Fisionable Especial
Depósito Central de Material Fisionable Especial Irradiado
Depósito de Material Nuclear
Depósito de Uranio Enriquecido
División Productos de Fisión
División Materiales Nucleares
Fábrica de Elementos Combustibles Nucleares
Fábrica de Elementos Combustibles – Reactores de Investigación
Facilidad de Almacenamiento de Combustibles Irradiados de Reactores de Investigación
Facilidad Experimental de Conversión por Vía Seca
Laboratorio Alfa
Laboratorio Química Analítica en Medios Activos
Laboratorio de Física Nuclear
Laboratorio de Enriquecimento Isotopico por Laser
Laboratorios de la Gerencia de Química
Laboratorio de Nanoestructura
Laboratorio de Química Analítica
Laboratorio de Recuperación Uranio Enriquecido
Laboratorio de Salvaguardias

NOMBRE / NOME / NAME
Laboratorio Facilidad Radioquímica
Laboratorio Materiales Fabricación Aleaciones Especiales
Laboratorio para Ensayos Post-Irradiación
Laboratorio Mock Up
Laboratorio Triple Altura
Material Nuclear en Usos No Nucleares
Planta de Conversión a Hexafluoruro de Uranio
Planta de Conversión a UO_2
Planta Piloto de Enriquecimiento de Uranio
MBA 1: Almacenamiento
MBA 2: Proceso
Planta de Fabricación de Elementos Combustibles para Reactores de Investigación
Planta Piloto de Combustibles Avanzados
Planta de Fabricación de Polvos de Uranio
Planta de Producción de Polvos de Uranio (En proyecto)(Em projeto)(In the planning stage)
Reactor Prototipo CAREM 25 (En construcción)(Em construção)(Under construction)
Reactor Argentino 0
Reactor Argentino 1
Reactor Argentino 4
Reactor Argentino 6
Reactor Argentino 8
Reactor Argentino 3
Reactor Multipropósito Argentino (En proyecto)(Em projeto)(In the planning stage)

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Apoyo Técnico
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Selma Chi Barreiro

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Colaboradores – en la oficina de Buenos Aires
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Secretário adjunto
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Deputy secretary
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Administration and Finances
Rubén Gerardo Novo

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Collaborators – at the offices in Buenos Aires
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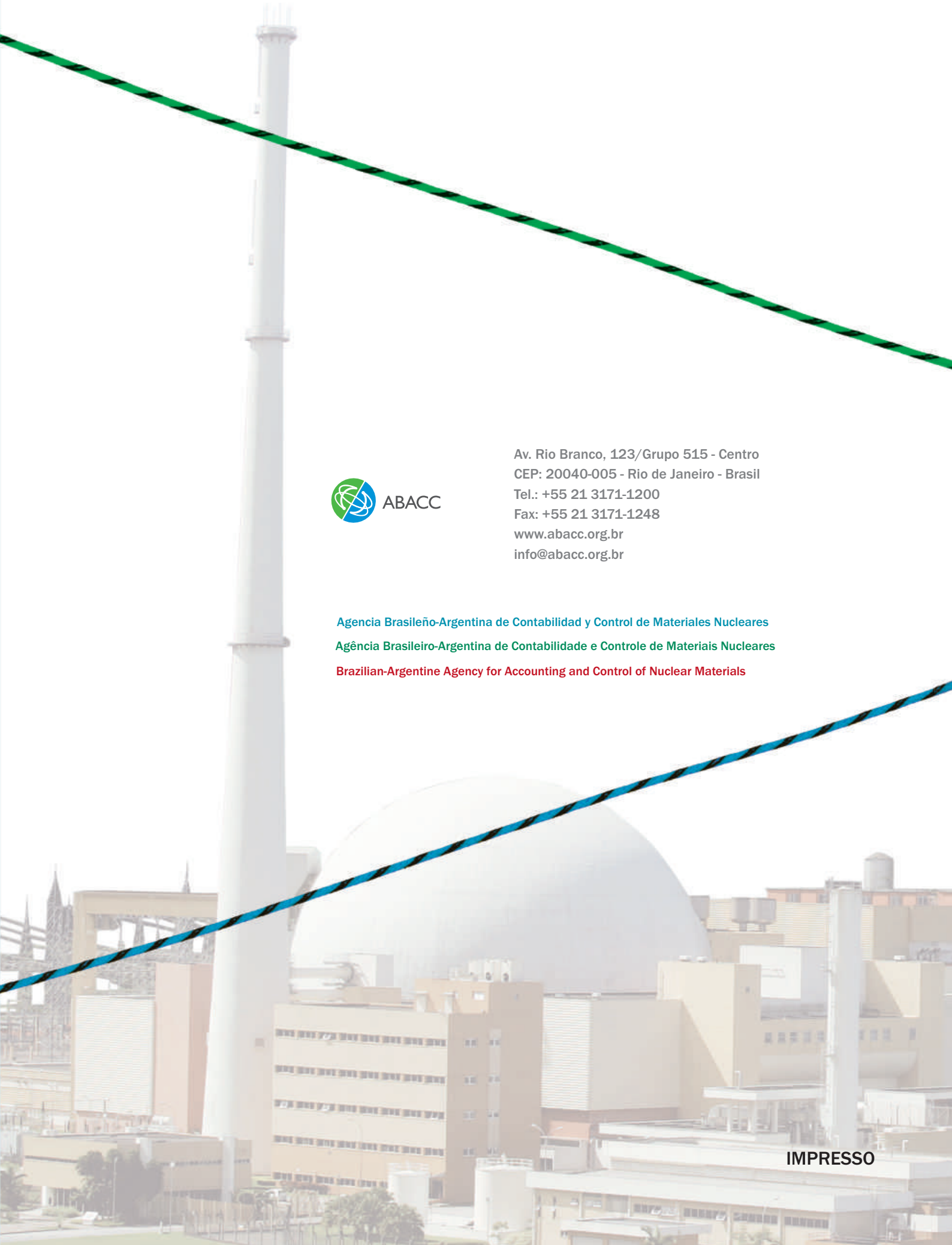

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Agencia Brasileño-Argentina de Contabilidad y Control de Materiales Nucleares

Agência Brasileiro-Argentina de Contabilidade e Controle de Materiais Nucleares

Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials

IMPRESSO