

ARN

Autoridad Regulatoria Nuclear
Nuclear Regulatory Authority

ANS/LAS SYMPOSIUM ON “NEW TECHNOLOGIES FOR THE NUCLEAR FUEL CYCLE”

Rio de Janeiro, Brazil, June

21 – 25 2010



Autoridad Regulatoria
Nuclear
Presidencia de la Nación

ARN

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- 1. ARN WORK FOCUSED ON SAFEGUARDS AND NON PROLIFERATION ISSUES – BRIEF OVERVIEW**
- 2. CONSIDERATIONS ABOUT THE EVOLUTION OF INTERNATIONAL SAFEGUARDS, SOME ASPECTS**



Autoridad Regulatoria
Nuclear
Presidencia de la Nación

- 1950 Argentinean Atomic Energy Commission (CNEA) as competent authority in the control of the protection against the hazardous effects of ionizing radiation and the safety of installations.
- 1994 Nuclear Regulatory Board (ENREN)
an independent governmental body performing regulatory control activities previously under the competence of CNEA Regulatory Branch.
- 1997 Nuclear Regulatory Authority (ARN) as successor of ENREN, created under the frame of the Nuclear Activity National Act.

Safeguards and non-proliferation in Argentina

LEGAL ASPECTS & COMMITMENTS

NUCLEAR ACT 24804 – Article 1°

With regard to nuclear activities the Federal State shall establish the policy and it shall exercises R&D, regulation and control through the Atomic Energy Commission and the Nuclear Regulatory Authority...

In executing the nuclear policy, the obligations and commitments undertaken by the Argentine Republic by virtue of the Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (TLATELOLCO TREATY), the Treaty of Non Proliferation (NPT), the Quadripartite Safeguards Agreement as well as the commitments undertaken by the country with regard to the Nuclear Suppliers Group and the National Sensitive Export Regime SHALL BE STRICTLY OBSERVED.

A real example of peaceful use commitment cooperation and transparency

- TLATELOLCO NWFZ TREATY (1967) – Region free of Nuclear Weapons
- ARGENTINA, BRAZIL HAVE BROUGHT INTO FORCE ALL RELEVANT NUCLEAR NON PROLIFERATION TREATIES, AS WELL AS OTHERS IN THE REGION
- BRAZIL AND ARGENTINA HAVE BROUGHT INTO FORCE THE AGREEMENT BETWEEN ARGENTINA & BRAZIL FOR THE EXCLUSIVE PEACEFUL USES OF NUCLEAR ENERGY (1991)
- FULL SCOPE SAFEGUARDS WITH THE IAEA (1991-1994)
- NPT TREATY (1995)
- NSG & OTHER GROUPS & NUCLEAR COOPERATION AGREEMENTS
- ARGENTINA, BRAZIL, ABACC AND THE IAEA HAVE BEEN COOPERATING TOWARDS EFFECTIVE & EFFICIENT SAFEGUARDS

REGULATORY AUTHORITY

The NUCLEAR REGULATORY AUTHORITY (ARN) was established as an autonomous body reporting to the President of Argentina by Act 24804 known as the Nuclear Activity National Act, which came into force on April 25, 1997, and is empowered to regulate and control the nuclear activity with regard to radiation and nuclear safety, physical protection safeguards and nuclear non-proliferation issues. It must also advise the Executive on issues under its purview.

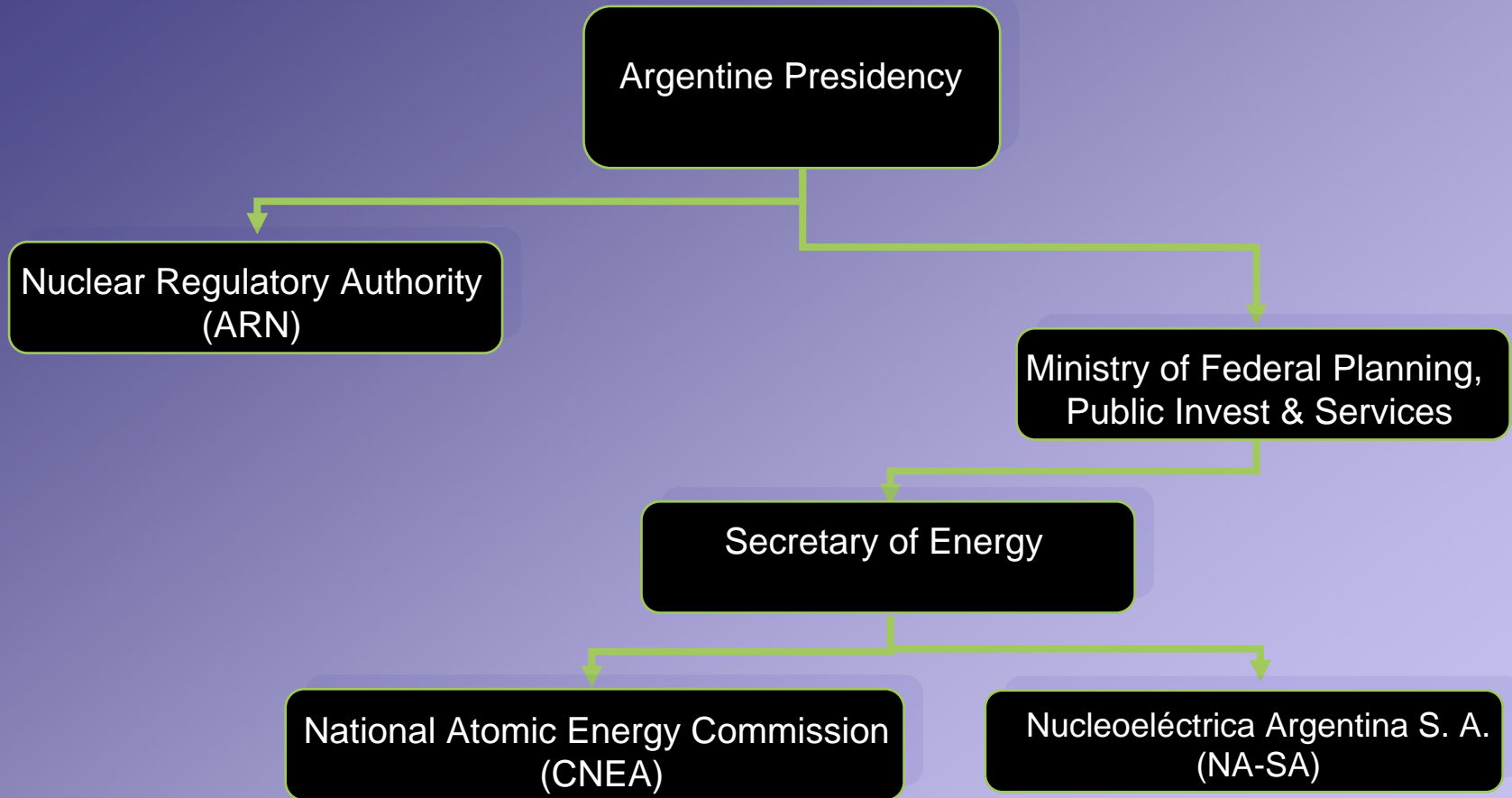
The objective of the Nuclear Regulatory Authority is to establish, develop and enforce a regulatory system applicable to all nuclear activities carried out in Argentina.

- It is an independent body
- More than 50 years of nuclear regulatory activity
- It has federal competence
- It deals with the 4 “regulatory branches” (+ security)
- It has a leading role in emergencies
- It has its own technical capacity
- It places strong emphasis on training
- It carries out a broad international activity

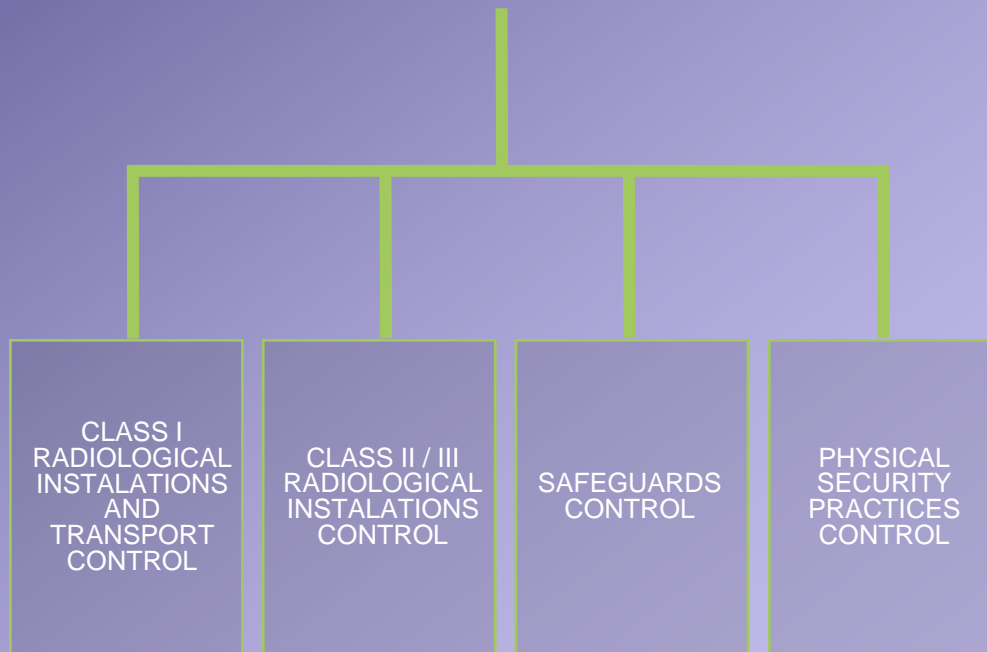
FACULTIES OF THE REGULATORY BODY

- Issue of regulatory standards.
- Grant the corresponding licenses to nuclear installations and personnel.
- Submit requirements to the Responsible Organizations
- Carry out inspections and audits to verify compliance with licenses and authorizations issued.
- Perform studies and evaluations.
- Apply sanctions in the case of non-compliance with any obligation by the license holder.
- Approve emergency plans and procedures.

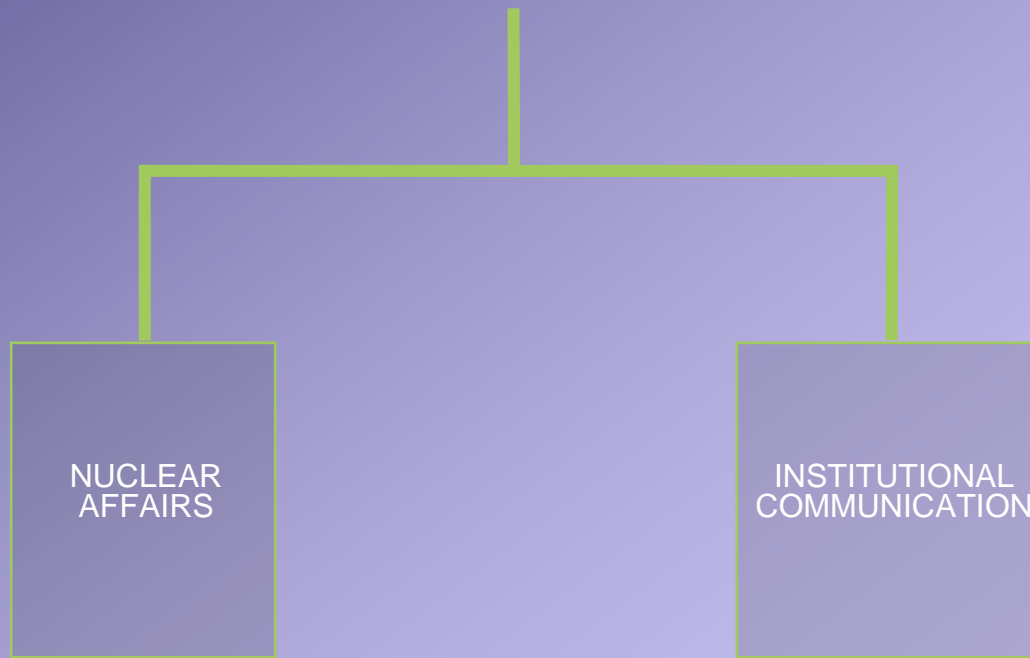
NUCLEAR ENERGY IN ARGENTINA



RADIOLOGICAL SAFETY, PHYSICAL PROTECTION AND SAFEGUARDS



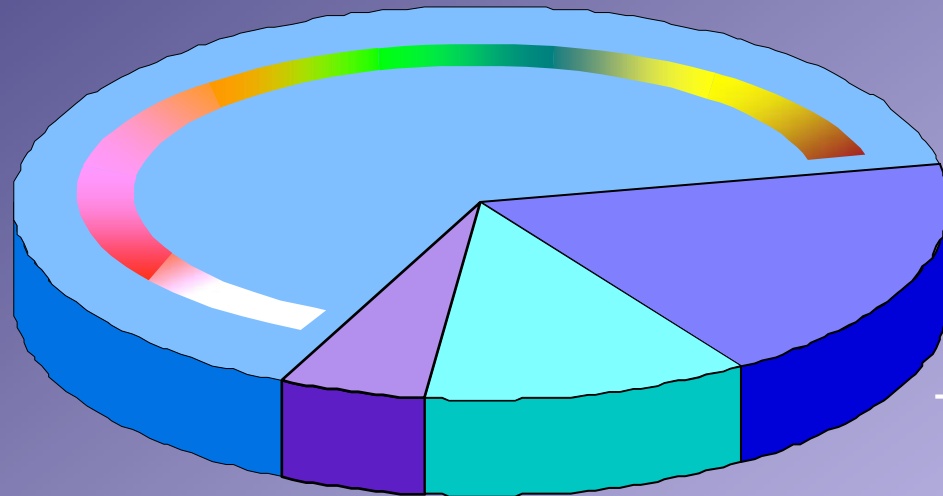
NUCLEAR AFFAIRS AND INSTITUTIONAL COMMUNICATION



HUMAN RESOURCES

DISTRIBUTION BY SPECIALIZATION

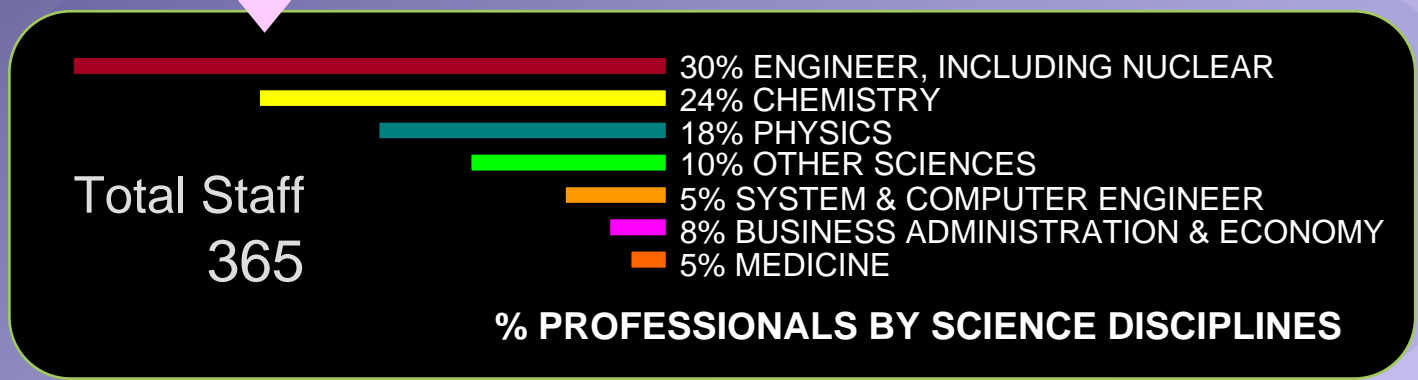
64%
PROFESSIONALS



19%
TECHNICIANS

5%
LOGISTICS










12%
ADMINISTRATIVE



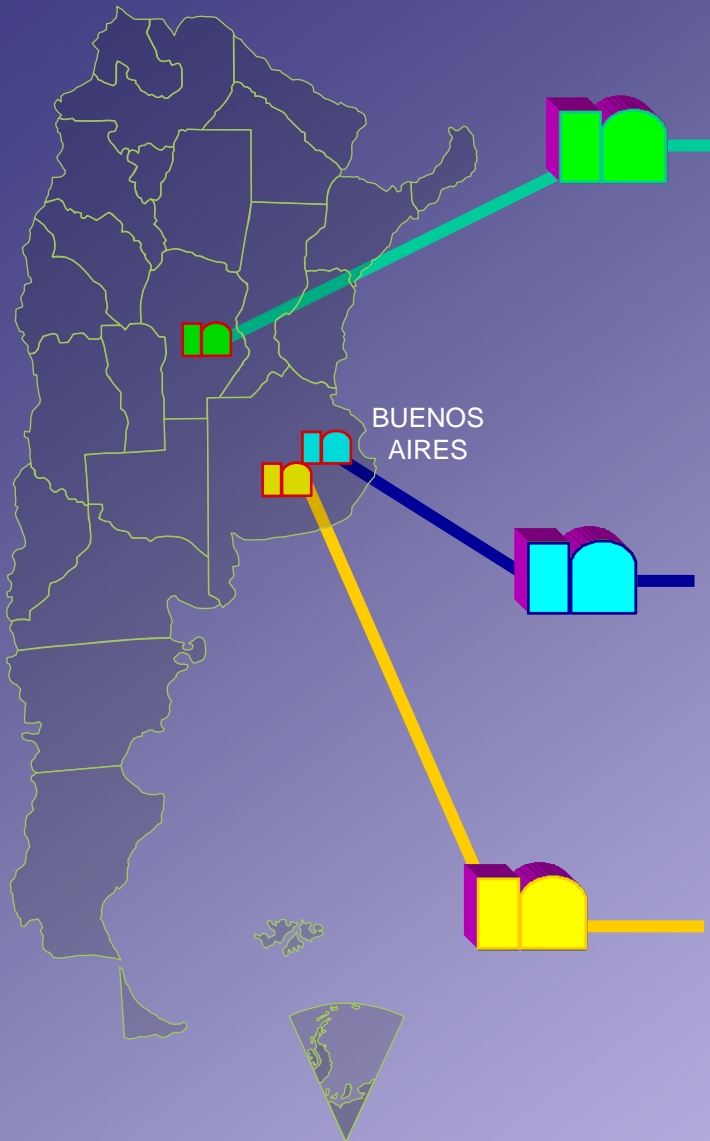


ARGENTINA
2.790.000 km²
~1600 USERS
OF RM

20.000
YEARLY
OPERATIONS
OF
TRANSPORT
OF
RADIOACTIVE
MATERIALS

-  NUCLEAR RESEARCH CENTER
-  URANIUM MINING AND MILLING
-  FABRICATION OF NUCLEAR FUEL
-  RESEARCH REACTORS
-  UO₂
-  U – ENRICHMENT FACILITY
-  MEDICAL CENTER
-  NPPs
-  ~ 1600 USERS OF RM





EMBALSE NUCLEAR POWER PLANT

PHWR - 600 MW
700 km from Buenos Aires

ATUCHA I NUCLEAR POWER PLANT

PHWR - 335 MW
112 km from Buenos Aires

ATUCHA II NUCLEAR POWER PLANT *UNDER CONSTRUCTION*

PHWR - 693 MW
112 km from Buenos Aires



Operating Nuclear Power Stations	2
Nuclear Power Stations under construction	1
Research Reactors and Critical assemblies	6
Particle accelerators	5
Radioisotope or radioactive source production plants	4
High dose irradiating facilities	5
Nuclear fuel cycle related installations	13
CNEA's radioactive waste management areas	1
Nuclear material deposits	3
Mining facilities	8
CNEA's laboratories	22
Teletherapy centres	180
Medical nuclear centres	300
Gammagraphy installations	65
Industrial meters and petroleum industry applications	301
Other uses	693

YEAR 2008

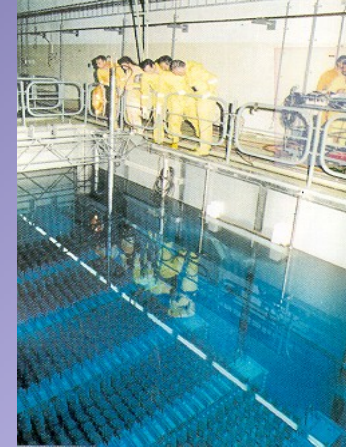
INSTALLATIONS
UNDER
REGULATORY
CONTROL

TOTAL 1610
INSTALLATIONS



NATIONAL SAFEGUARDS OBJECTIVE

To ensure -with a reasonable level of certainty- that nuclear materials, materials, equipment, installations and relevant information are not used for any unauthorized purpose, and that nuclear activities are in compliance with international non-proliferation agreements and undertakings of Argentina.



The SSAC of Argentina

GOAL

To design and enforce control measures assuring the continuity of knowledge about possession, use and movements of nuclear materials as the primary element for the prevention and detection of unauthorized uses of nuclear materials.

Safeguards and the SSAC of Argentina

ARN STANDARD AR 10.14.1

No one can receive, possess, store or transfer any nuclear material without the relevant License or Authorization issued by the ARN. Licenses and Authorizations are issued once the applicant has fulfilled all relevant requirements related to radiation protection, nuclear safety, safeguards and physical protection.

The SSAC of Argentina

A competent SSAC should set up procedures and requirements for the holders of nuclear materials. A pillar of this system is the accountancy of all nuclear materials and its independent verification.

The SSAC is designed and enforced in a way that:

- **Ensures that nuclear materials are imported, exported, produced, transferred, stored, used, only by authorized or licensed installations.**
- **Keeps an updated system database of all nuclear material present in the country.**
- **Verifies compliance with licenses and permits**

Safeguards and non proliferation Argentina

LEGAL ASPECTS & COMMITMENTS

- **BILATERAL AGREEMENT: Argentina and Brazil**
- **EXCLUSIVELY PEACEFUL USE OF NUCLEAR ENERGY, SCCC and ABACC**
- **QUADRIPARTITE SAFEGUARDS AGREEMENT (BASED ON THE SCCC AND ON IAEA COMPREHENSIVE SAFEGUARDS -INFCIRC/153)**
- **INTERNATIONAL COOPERATION AGREEMENTS**

The SSAC of Argentina

- **NUCLEAR ACT 24804**

ESTABLISHES FUNCTIONS AND GOALS FOR NATIONAL SAFEGUARDS AND THE REQUIREMENT TO FULFILL INTERNATIONAL SAFEGUARDS AND OTHER NON PROLIFERATION OBLIGATIONS

- **ARN REGULATORY NORMS, REQUIREMENTS AND GUIDELINES**

YEAR 2008 - TOTAL INSPECTION EFFORT

Area under regulatory control	Person-days
Radiological and nuclear safety	2832
Safeguards	456
Physical protection	156

ABACC

The ARN performed in 2008 its obligation to cooperate with ABACC in the implementation of the “Common System of Accounting and Control of Nuclear Materials”, by contributing 20 inspectors who carried out 264 person-days of inspection in Brazilian facilities.



ABACC



OIEA








BILATERAL AGREEMENT - 1991

QUADRIpartite SAFEGUARDS AGREEMENT ARG/BRA/ABACC/IAEA-1994

ARN provides the Brazilian-Argentine Agency with inspectors for the application of the “Common System of Accounting and Control of Nuclear Materials”; ARN staff also serves in the Secretariat of ABACC.

References

-  ATOMIC CENTER
-  NUCLEAR POWER PLANT
-  NUCLEAR POWER PLANT UNDER CONSTRUCTION
-  URANIUM DIOXIDE CONVERSION PLANT
-  URANIUM ENRICHMENT PLANT

SAFEGUARDS ACTIVITIES (Cont.)

IN ITS NATIONAL VERIFICATION ROLE, the Argentine SSAC:

•CONTROL AND VERIFY ALL NUCLEAR ACTIVITIES IN THE COUNTRY

- Grants authorizations and licenses to any user of nuclear materials in Argentina.

- Verifies operators' full compliance with ARN standards, regulatory requirements, licenses and authorizations and validity of the design information. NATIONAL INSPECTORATE

- Evaluates any comments provided by ABACC and the IAEA on the DIQ, inspections, C&S failures

- Requests operators any amendments and amplifications of information that may be required.

SAFEGUARDS ACTIVITIES (Cont.)

In its coordination role, the Argentine SSAC:

•FACILITATE ABACC AND IAEA SAFEGUARDS

- Submits all accounting and operational reports to ABACC as well as all notifications required in the Bilateral and Quadripartite Agreements, and coordinates the resolution of any error).
- Interacts with the operators of nuclear installations to establish procedures to ensure prompt access to the installations and to facilitate international safeguards inspections and other verification activities.

SAFEGAURDS ACTIVITIES (Cont.)

In its coordination role, the Argentine SSAC:

COOPERATES WITH ABACC AND THE IAEA IN THE IMPLEMENTATION OF BILATERAL AND INTERNATIONAL SAFEGUARDS

Cooperates with ABACC and the IAEA in facilitating the planning of safeguards inspections through the provision of accurate operational information of all “Material Balance Areas” (MBAs) in Argentina, and accompanies the international safeguards inspections.

- Provides notifications to nuclear installations of any matter related to national and international safeguards inspections.

Coordinates administrative arrangements to ensure the timely availability of Argentine ABACC’s inspectors to perform inspections in Brazil

- Coordinates and negotiates with ABACC and IAEA any safeguards implementation aspect.

SAFEGUARDS ACTIVITIES IN ARGENTINA

- Having competent SSAC with its own verification capabilities allows Argentina –inter alia - to:
- Ensure to the government authorities that nuclear material is not diverted to unauthorized uses and that design information of nuclear facilities remains valid.
- Have a reasonable certainty that nuclear materials are adequately accounted for and the measurement systems at nuclear facilities comply with international standards.
- Cooperate with ABACC & IAEA in applying efficient and effective safeguards.

SAFEGUARDS ACTIVITIES UNDER THE QUADRIPARTITE SAFEGUARDS AGREEMENT

Increased cooperation between ABACC & IAEA in applying efficient and effective safeguards, a new impetus

The NPT Review Conference notes that bilateral and regional safeguards can play a key role in the promotion of transparency and mutual confidence between States, and that they can also provide assurances concerning nuclear non-proliferation

SAFEGUARDS ACTIVITIES UNDER THE QUADRIPARTITE SAFEGUARDS AGREEMENT

Increased cooperation between ABACC & IAEA in applying efficient and effective safeguards, a new impetus

**THE AGREEMENT PROVIDES FOR COOPERATION
BETWEEN BOTH ORGANIZATIONS AND THE NOTION TO
AVOID DUPLICATION OF EFFORTS UNDER CERTAIN
PRINCIPLES**

MORE CAN BE DONE IN THIS AREA

SAFEGUARDS ACTIVITIES UNDER THE QUADRIPARTITE SAFEGUARDS AGREEMENT

Increased cooperation between ABACC & IAEA in applying efficient and effective safeguards, a new impetus

Need for ABACC and the IAEA to reach independent conclusions,

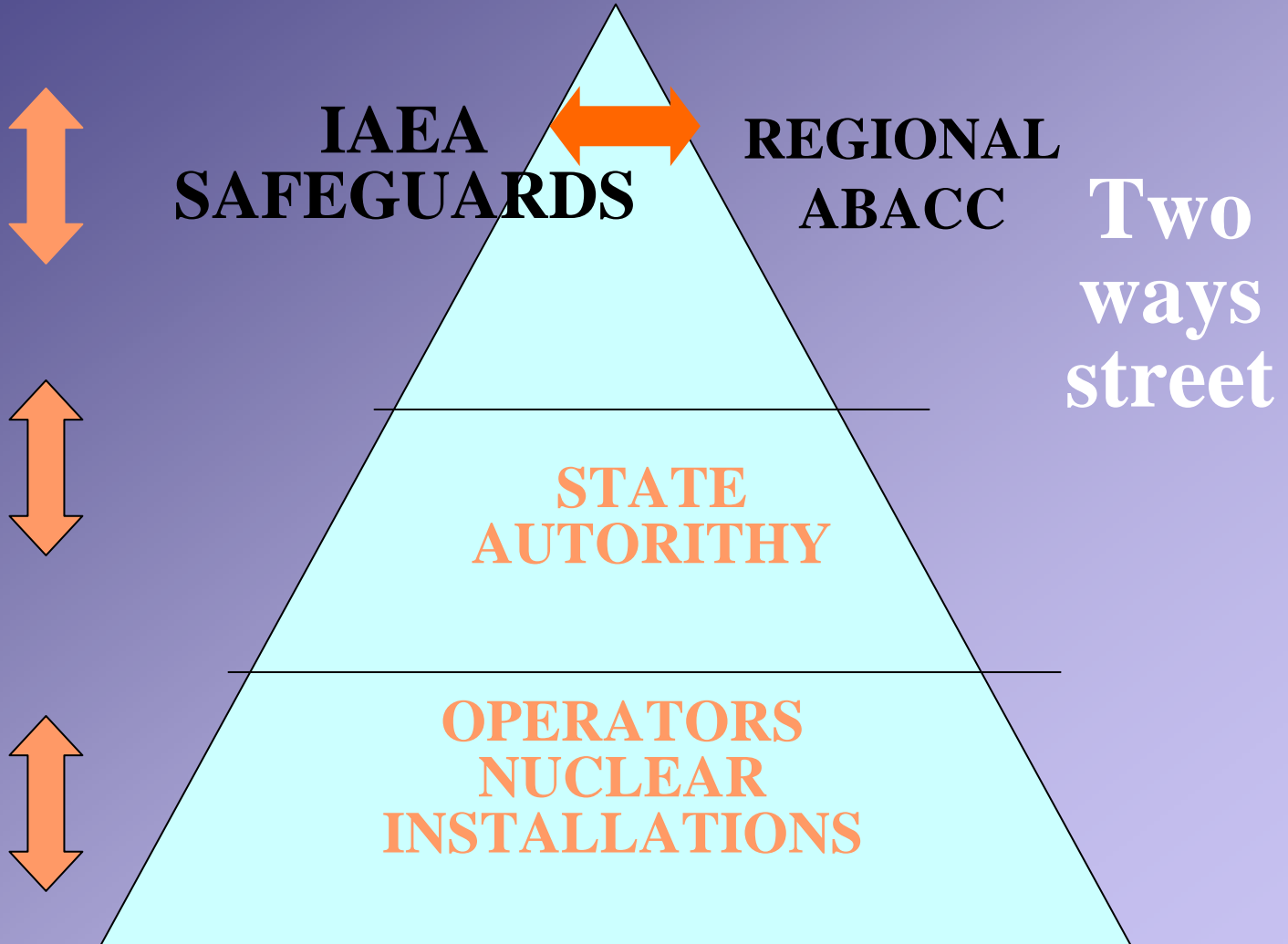
Need to coordinate to the extent possible verification activities, in particular unnecessary duplication of ABACC's safeguards,

When performing their activities, they shall work jointly in accordance with compatible criteria,

Need to allow IAEA to fulfill its obligations under the agreement.

SAFEGUARDS STRUCTURE

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The Argentine Experience of States Systems of Accounting and Control of Nuclear Materials (SSAC)

CONCLUSIONS

The existence of adequate legislation and robust nuclear regulatory infrastructures is essential to ensure adequate accounting and control of nuclear material in peaceful nuclear activities within a country

The SSAC is a requirement, not an option. However, consideration needs to be given to the country specific characteristics.

The Argentine Experience of States Systems of Accounting and Control of Nuclear Materials (SSAC)

CONCLUSIONS

The Argentine experience for SSAC, whose landmarks are the existence of a robust SSAC and the establishment of a reciprocal safeguards system between Argentina and Brazil (SCCC) and its insertion within comprehensive international safeguards has been a fruitful experience. This may serve as an example for similar initiatives elsewhere in the world.

The Argentine Experience of States Systems of Accounting and Control of Nuclear Materials (SSAC)

CONCLUSIONS

Cooperation between the Argentine & Brazilian SSAC, ABACC and the IAEA is a necessary condition for a successful implementation of safeguards and to minimize the burden to peaceful nuclear activities. This is essential to build up international confidence and effective and efficient safeguards

The Argentine Experience of States Systems of Accounting and Control of Nuclear Materials (SSAC)

CONCLUSIONS

Increased cooperation under strengthened safeguards between the SSAC (national and regional) and the IAEA is one of the most promising measures to increase safeguards effectiveness and efficiency

A real example of cooperation and transparency, how to make it better: Safeguards at State level

- **TLATELOLCO NWFZ TREATY (1967)**
- **ARGENTINA, BRAZIL AND ALL LATIN AMERICAN COUNTRIES HAVE BROUGHT INTO FORCE ALL RELEVANT NUCLEAR NON PROLIFERATION TREATIES,**
- **BRAZIL AND ARGENTINA HAVE BROUGHT INTO FORCE THE AGREEMENT BETWEEN ARGENTINA & BRAZIL FOR THE EXCLUSIVE PEACEFUL USES OF NUCLEAR ENERGY (1991)**
- **FULL SCOPE SAFEGUARDS WITH THE IAEA (1991)**
- **NPT TREATY (1995)**
- **NSG & OTHER GROUPS & NUCLEAR COOPERATION AGREEMENTS**

Further consideration should be given on the value that factors like the ones presented has on how Agency's safeguards should be applied at the level of States: Increased cooperation between IAEA and ABACC could and should be enhanced to the fullest extent possible

The evolution of IAEA Safeguards to State level seem to be the way forward

Final Remark

“The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose.”

To help to ensure sustainable peaceful nuclear energy expansion, it has a crucial role in promoting Safety and Security and in implementing Safeguards

Thank you very much for your kind attention!

Muchas gracias por su atención

ARN

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