EVOLUTION OF NUCLEAR SECURITY REGULATORY ACTIVITIES IN BRAZIL

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INTRODUCTION

This presentation intends to give a brief overview of the evolution of the nuclear security regulatory activities in Brazil, as a consequence of the creation of the Nuclear Security Office in the Brazilian National Nuclear Energy Commission

SUMMARY

STRUCTURE

ATRIBUTIONS AND OBJECTIVES

LEGAL FRAMEWORK

BRAZILIAN NUCLEAR PROGRAM

WORKING STRATEGIES

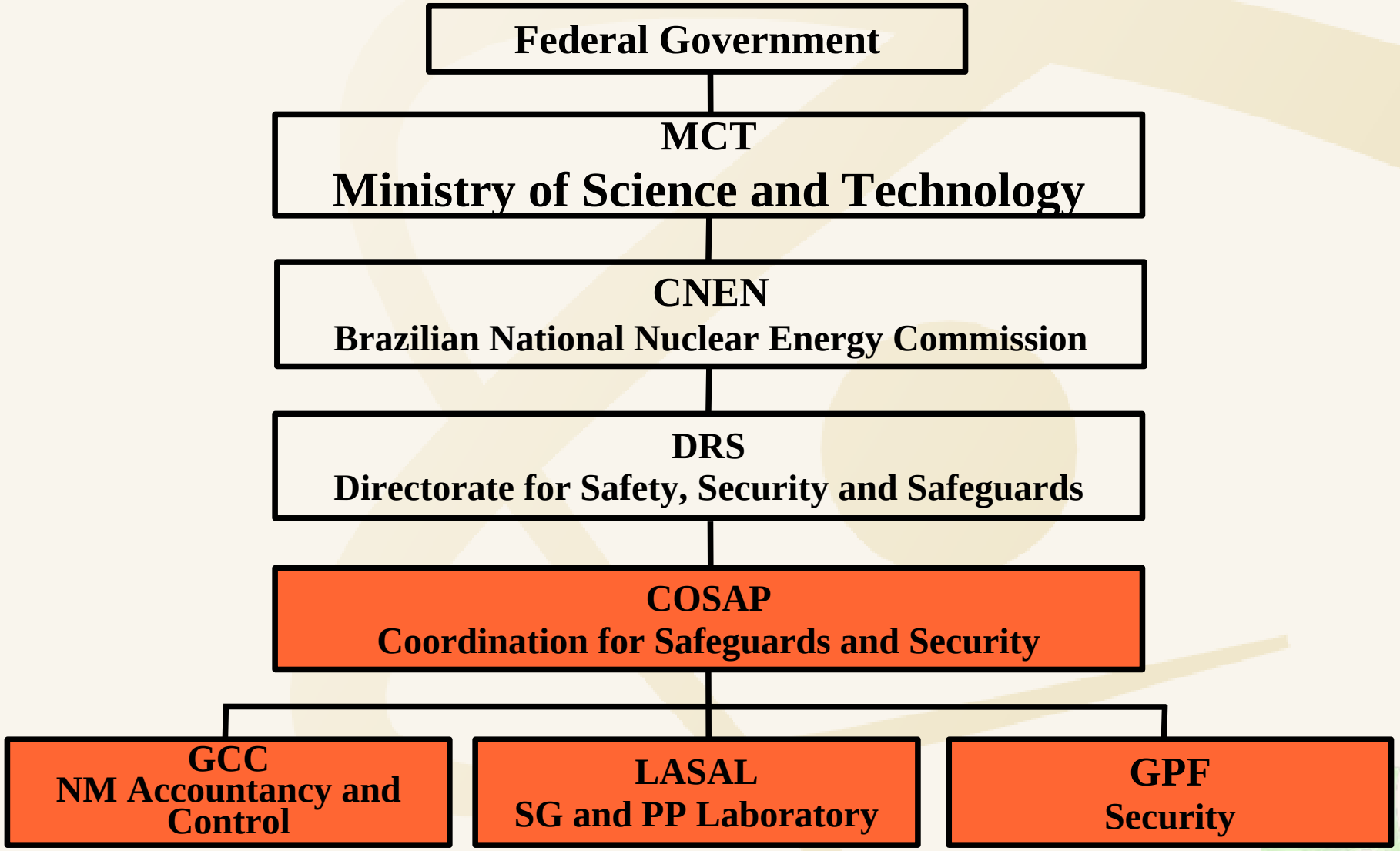
ACHIEVEMENTS

RESULTS (2004 – 2008)

DIRECTIONS FOR THE FUTURE

CONCLUSIONS

STRUCTURE


Federal Government
MCT
Ministry of Science and Technology
CNEN
Brazilian National Nuclear Energy Commission
DRS
Directorate for Safety, Security and Safeguards
COSAP
Coordination for Safeguards and Security
GCC
NM Accountancy and Control
LASAL
SG and PP Laboratory
GPF
Security

STRUCTURE

BEFORE FEBRUARY 2004

Nuclear Security/Physical Protection dealt by each Safety specific area (reactors, fuel cycle, radioactive facilities...)

CHANGING OF THE WORLD SCENARIO (After 2001)

CREATION OF THE NUCLEAR SECURITY OFFICE

CNEN Directorate For Safety, Security and Safeguards created the Nuclear Security Office (GPF)

Under Coordination for Safeguards and Security (COSAP)

CNEN "Information Bulletin" # 03, March 1st, 2004

GPF MAIN ATTRIBUTIONS AND OBJECTIVES

ATTRIBUTIONS

- Licensing "Operational Units of the Nuclear Area" under criteria CNEN Physical Protection Regulation (CNEN - NE – 2.01)
- Point of Contact for illicit trafficking for IAEA and MERCOSUL
- Disseminating Nuclear Security
- Point of Contact to the SIPRON for Nuclear Security Issues

OBJECTIVES

- Evaluate PP Systems of Brazilian Operators (documentation assessment and inspections/auditing):
  - Prevent, detect and respond to attacks or direct sabotage acts;
  - Prevent, detect and respond to theft of nuclear and other radioactive materials
  - Prompt localize and recover diverted material

FINAL GOAL: protect the workers, the general public, the environment and the property

LEGAL FRAMEWORK

➢ Brazilian

- Brazilian Federal Constitution (1988) ⇨ Nuclear Energy strictly for peaceful applications
- Creation Law of CNEN (1956)
- Regulation CNEN NE-1.04 – Licensing of Nuclear Facilities
- Regulation CNEN NE-6.02 – Licensing of Radioactive Facilities
- Regulations for the transport of NM and RM
- *Regulation CNEN NE-2.01 PHYSICAL PROTECTION*

➢ International Binding and non Binding

- CPPNM
- UNSCR 1540
- INFCIRC 225
- IAEA Nuclear Security Series

LEGAL FRAMEWORK

Regulation CNEN NE-2.01 PHYSICAL PROTECTION

➢ ***Objective:***

Establishment of requirements for the physical protection of "Operational Units"

➢ ***Operational Units:***

- **Nuclear and Radioactive Installations under construction, maintenance, operation and decommissioning**
- **Transport Units of nuclear material, radioactive material and vital equipment**
- **Research Institutes and Educational Institutions**

BRAZILIAN NUCLEAR PROGRAM

- 2 Nuclear Power Plants (NPPs) in operation and 1 under construction (PWR design)
- 3 Enrichment installations - Centrifuge (Laboratory, Pilot and Industrial plants)
- 1 Industrial reconversion plant
- 1 Industrial fuel fabrication plant
- 1 Conversion pilot plant (under construction)
- 3 Mining and concentration facilities (1 operational, 1 preoperational and 1 decommissioning)
- 5 Research reactors (1 under planning)
- 6 Nuclear/Radioactive material storage facilities
- 6 Research Institutes

Radioactive Facilities
~3500 industrial and medical facilities

BRAZILIAN NUCLEAR PROGRAM
NPPs

BRAZILIAN NUCLEAR PROGRAM
MINNING

BRAZILIAN NUCLEAR PROGRAM
RECONVERSION / PELLETS

CNEN

BRAZILIAN NUCLEAR PROGRAM
FUEL FABRICATION PLANT

GPF WORKING STRATEGIES

- **Matrix way of working - rendering services direct to the specific Licensing Coordinations of the Directorate for Safety, Security and Safeguards**
- **Priority to the nuclear facilities already in operation ⇒ evaluation of PP Plans and Systems (documentation assessment and field inspections) ⇒ detection of non-conformities and establishment of requirements ⇒ routine inspection program**
- **Radioactive facilities ⇒ priority to new or renewal of authorization**
- **Specific PP Plan for each NM transport operation**
- **Attention to the documentation: confidentiality, standardization and control**
- **Promotion of events to disseminate nuclear security culture (operators and other Brazilian organizations)**

ACHIEVEMENTS

- ❖ Change in the approach for the application of all the requirements of CNEN Regulation NE 2.01
- ❖ Increase of awareness among operators for a comprehensive approach for prevention, detection and response to malevolent acts
- ❖ Better integration of CNEN in the national security scenario and stronger representation of CNEN in the regional and international scenario of nuclear security
- ❖ Centralization and coordination of activities related to prevention, detection and response to Illicit Trafficking (national, regional and international)
- ❖ Increase of training activities

GPF RESULTS (2004-2008)

- Brazilian nuclear/radioactive facilities with PP Plans and PP Transport Plans updated/approved (40 Plans evaluated)
- Operators PP Systems running according PP CNEN Regulation (33 security inspections performed)
- Organization in cooperation with IAEA and US DOE of 4 national training courses (around 160 persons trained)
- Participation as lecturers/instructors in 13 training events (Brazilian security and intelligence organizations)
- Development of a training program for MERCOSUL (first product - unattended course) for border control security organizations regarding illicit trafficking of NM and RM
- Effective participation (2006/2007) in the development and implementation of the Nuclear Security Plan for the XV Pan American and III Para Pan American Games in Rio de Janeiro

PP ELEMENTS - ACCESS CONTROL

PP ELEMENTS - ACCESS CONTROL

PP ELEMENTS – PHYSICAL BARRIER

PP ELEMENTS – PHYSICAL BARRIER

PP ELEMENTS – DETECTION/ASSESSMENT

PP ELEMENTS – NM TRANSPORT

DIRECTIONS FOR THE FUTURE

- Revise the CNEN regulation NE-2.01: improve requirements for radioactive materials, its transportation and associated facilities
- Increase the PP licensing efforts for industrial and medical radioactive facilities and RM transportation
- Keep focus on nuclear facilities (routine inspections)
- Increase the cooperation with other Brazilian public organizations
- Be prepared for the expansion of the Brazilian Nuclear Program
- Maintain training activities

CONCLUSIONS

- Nuclear security in Brazil has evolved substantially during the past 5 years, and although improvements are still needed, the results obtained in the licensing of operational units of the nuclear area demonstrated that the premises and the strategies adopted by GPF were adequately chosen
- It is recognized that strengthening nuclear security requires the effective use of resources that needs to be assessed, prioritised and coordinated
- The dissemination of the security culture plays an important role in this context
- Compared to five years ago, the GPF is now better prepared to fulfil its regulatory attributions due to a detailed knowledge about the security situation of the Brazilian nuclear area and the increased awareness among operators
- An holistic and synergic approach should be aimed: safeguards (non proliferation), security (prevention of malevolent acts) and safety (prevention of technical accidents)

THANK YOU

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