

# National Report: Brazil



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**IAEA**

International Atomic Energy Agency

# Independent regulatory body

- Is an independent regulatory body in place?
- Yes / No?
- Explain actions taken to correct a 'no independence' situation / timeframe

# Independent regulatory body

Yes.

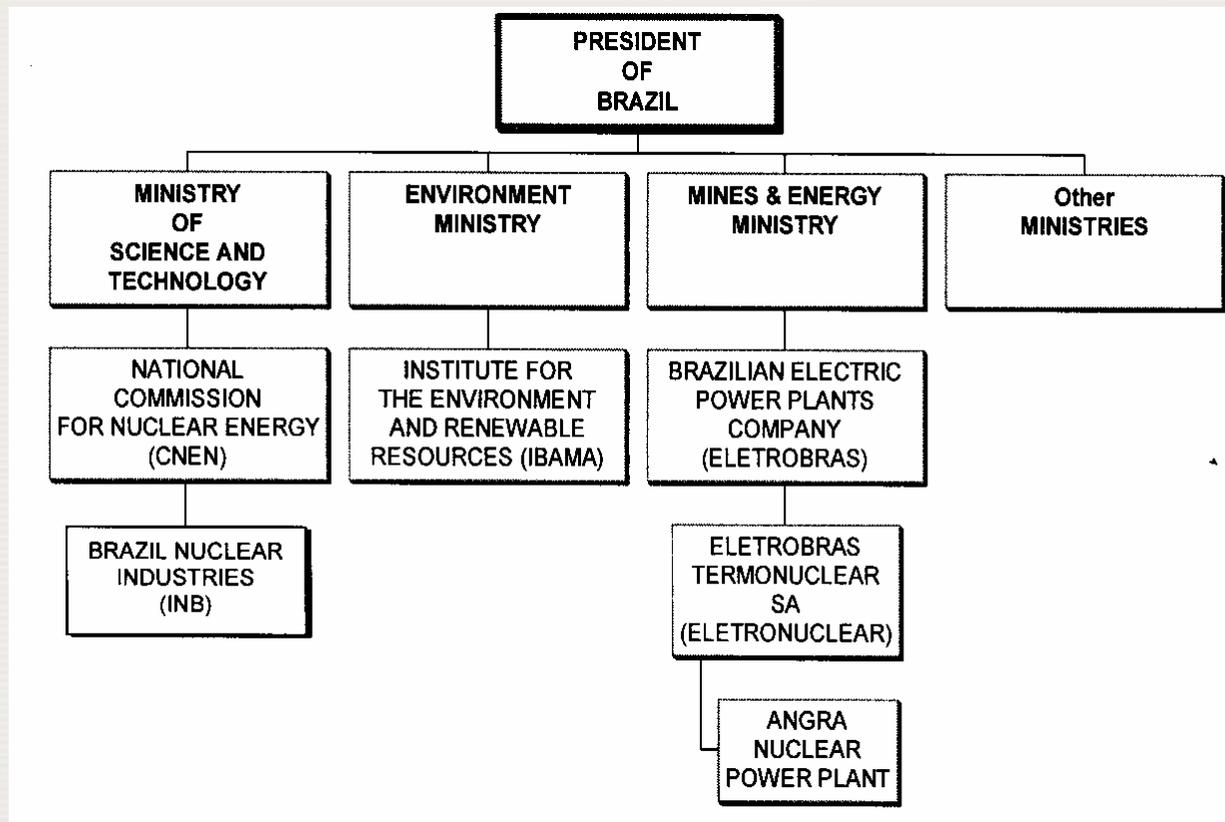
Brazilian National Commission for Nuclear Energy (CNEN) has been designated as the regulatory body entrusted with the implementation of the legislative framework related to safety of nuclear and radioactive installations.

# Independent regulatory body

Effective separation between the functions of the regulatory body (CNEN) and the organization in charge of the promotion and utilization of nuclear energy for electric power generation (ELETRONUCLEAR) is provided by the structure of the Brazilian Government in this area. While CNEN is linked to the Ministry of Science and Technology (MCT), ELETRONUCLEAR is fully owned by ELETROBRAS, a state holding company of the electric system, which is under the Ministry of Mines and Energy (MME).

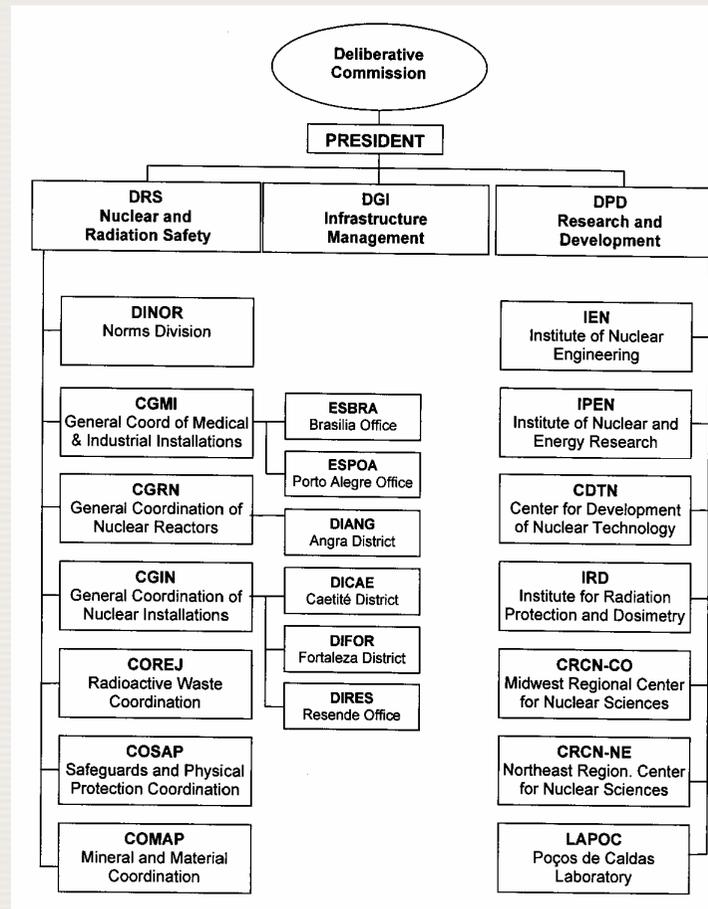
# Independent regulatory body

## Brazilian Organizations Involved in Nuclear Safety



# Independent regulatory body

Simplified CNEN Organization Chart



# Independent regulatory body

- The 4 research reactors belong to the research institutes of CNEN (CDTN, IPEN and IEN), under the Directorate for Research and Development (DPD). The organizational unit involved with the licensing of nuclear installations is the Directorate for Radiation Protection and Nuclear Safety (DRS) and its General Coordination of Nuclear Reactors (CGRN) is responsible for the review and assessment of nuclear power plants and research reactors.

# Independent regulatory body

- In Brazil, the Developing Committee of the National Nuclear Policy (PNB), composed of eleven ministers, is responsible for the decisions of the PNB at the inter-ministerial level. In 2008 they decided, with the approval of the President of the Federal Republic of Brazil, for the creation of a regulatory agency independent of CNEN. The Directorate for Radiation Protection and Nuclear Safety (DRS) will be separated from CNEN to create the Brazilian regulatory body.

# Legal and regulatory framework

- Is 'decommissioning' included in the national legal and regulatory framework?
- Yes / No?

# Legal and regulatory framework

- Yes. The Brazilian regulations require that the operator of a nuclear facility should submit a decommissioning plan to be assessed by the regulatory body. A draft of new CNEN regulation on “Decommissioning of Nuclear and Radioactive Facilities” was prepared in 2008 and submitted to the Standard Division (DINOR) of CNEN. The objective of this new regulation is to provide a standard format for the preparation of a decommissioning plan.

# License / authorisation

- Does the RR have a valid license or other official form of authorization from the regulator
- Explain type of license/authorization
- Explain actions taken to correct a 'no license' situation / timeframe

# Decommissioning planning / implementation

- Decommissioning Plans are not available for the 4 Brazilian Research Reactors
- The IPR-R1 has developed a draft of its Decommissioning Plan including general aspects and main issues (.doc available and results will be presented on International Nuclear Atlantic Conference - INAC 2009)

***advanced version* → 2010**

***final version* → 2011**

# Decommissioning planning / implementation

- A National Decommissioning Project is under development - involvement of key people from all CNEN Institutes - main expected outcomes:
  - Establishment of the National policy regarding to Decommissioning;
  - Establishment of a National Work Group skilled on Decommissioning Planning and Projects helping an effective and safe Brazilian Research Reactors Decommissioning;

# Decommissioning planning / implementation

- A National Decommissioning Project is under development - involvement of key people from all CNEN Institutes - main expected outcomes:
  - Preparation of national standards and procedures, filling the actual gaps observed in the Brazilian regulatory framework regarding to the decommissioning subject;
  - Development of Decommissioning Plans for all Brazilian Research Reactors;

# Decommissioning planning / implementation

- A National Decommissioning Project is under development - to be presented on **Nov/2009**

- Implementation team:

\_\_\_\_\_ **(Operators)**

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# Decommissioning cost calculation / funding

- The decommissioning cost calculation was not carried out.

## Actions been performed (draft Decom. Plan):

- Alternative Funding Mechanisms
- Costs estimates for decommissioning options considering the safety requirements and types of waste generation.
- Evaluation of detailed costs during the final planning - Total costs and cost breakdown for individual elements (prepare a detailed time table)
- Build inflation into the cost calculations
- Inclusion of a margin for uncertainties

# Decommissioning cost calculation / funding

- Inclusion of costs for waste and materials management, e.g. storage, disposal of radioactive waste; nuclear fuel; release of materials, buildings, site, considering the tasks:
  - (a) Pre-decommissioning actions, e.g. decommissioning planning;
  - (b) Facility shutdown activities, e.g. removal of the spent fuel, system reconfiguration and retirement, decontamination and immobilization of residual contamination;
  - (c) (Limited) procurement of equipment and materials;
  - (d) (Limited) dismantling activities and characterization of radioactive inventory;
  - (e) Waste processing, storage and disposal (including hazardous waste);
  - (f) Site security, surveillance and maintenance;
  - (g) Transition project management;
  - (h) Other costs, including asset recovery.

# Progress and Achievements

- Development of a National Decomm. Project involving relevant people from all Brazilian Research Institutes (regulators and operators) allowing approaches to all national decommissioning issues;
- Push the establishment of the National policy regarding to Decommissioning;
- Became a Contracting Party on the Joint Convention;

# Progress and Achievements

- Creation of a National Work Group skilled on Decommissioning Planning and Projects helping an effective and safe Brazilian Research Reactors Decommissioning;
- Development of at least one Decommissioning Plan / Regulatory Standard to be presented and reviewed on the R2D2P Workshop 'rev. Decomm. Plan' (2010);
- *Keep involved all national decision makers;*

# Issues / Challenges

- Issues / challenges to develop / implement in our decommissioning plan
  - Technical: cooperation of the key people to achieve the goals of the project
  - Legal / regulatory: establishment of an effective framework given clear directions to all decommissioning issues, regulatory independence
  - Administrative: effective engagement and efforts of all people involved on the Decommissioning Project/Plan