

# **Challenges to Implement the Decommissioning and Remediation Project for the Pocos de Caldas Production Site**

**IAEA's Initiative to Build up an International Coalition to  
Advance the Implementation of ER and D&D Programs –  
Challenges and Opportunities - Panel Session 012  
Waste Management Conference 2015**

Delcy

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Total Area of "Pocos de Caldas" site: 3,200 ha ( ~ 12 sq mi)



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1641 m

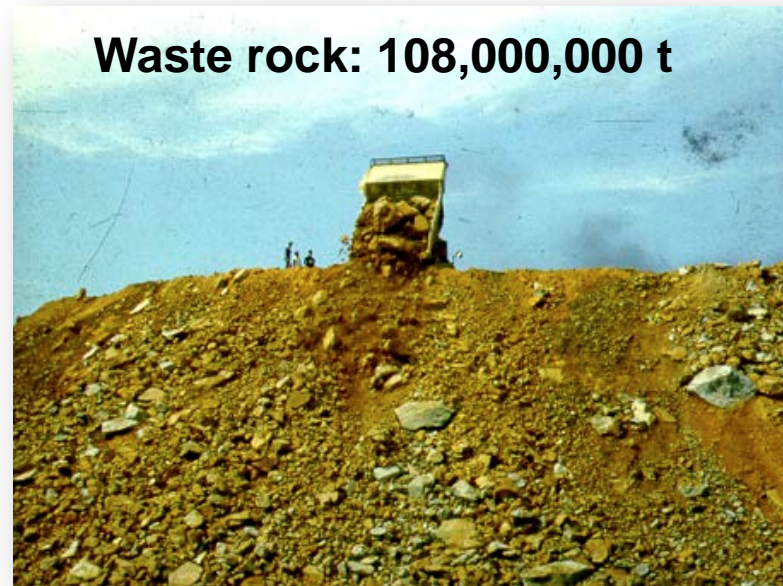
21° 57.543' S 46° 30.681' O elev 1311 m

Altitude do ponto de visão 7.00 km





**Mill tailings: 2,400,000 t**



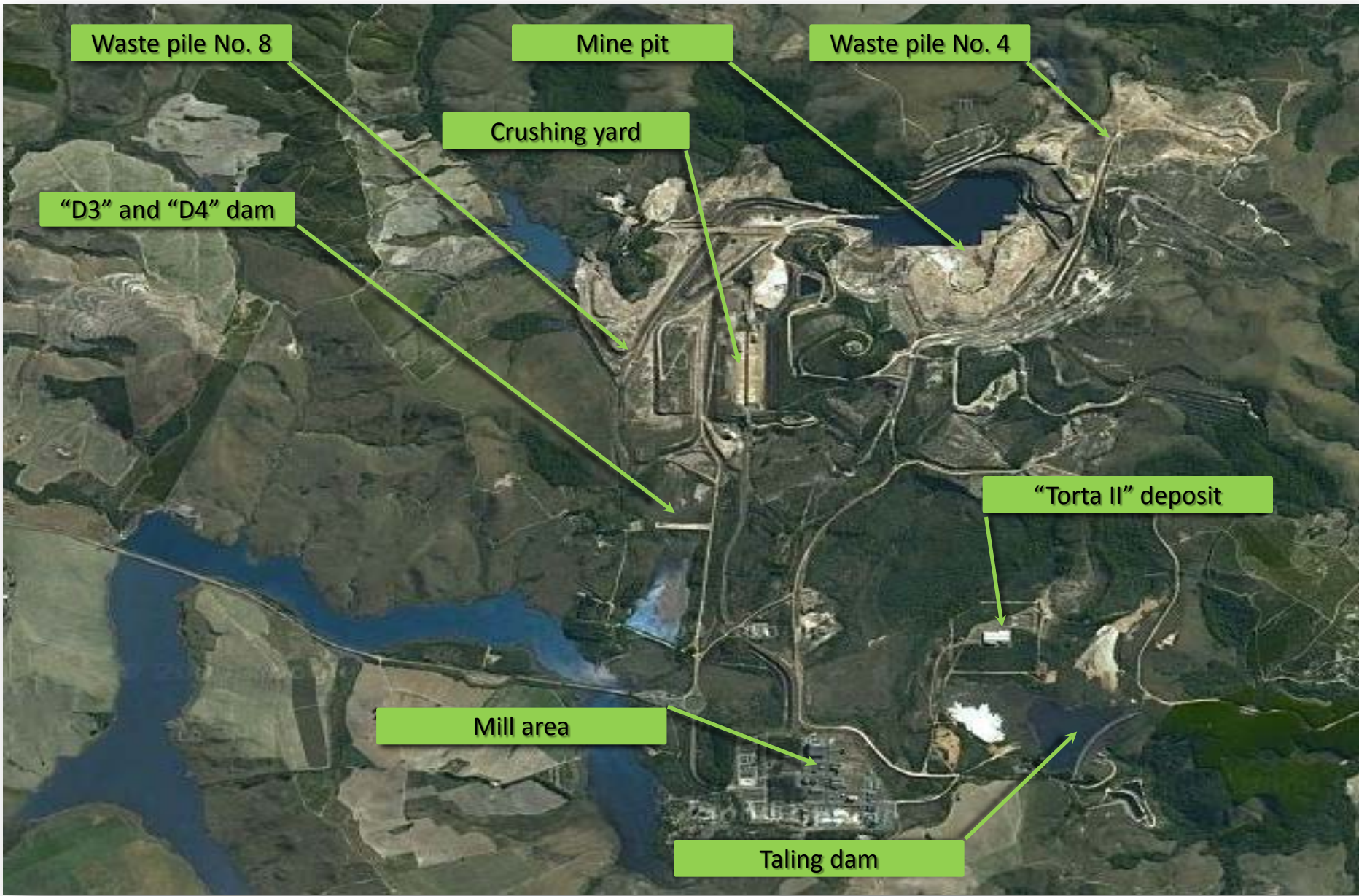
**Waste rock: 108,000,000 t**

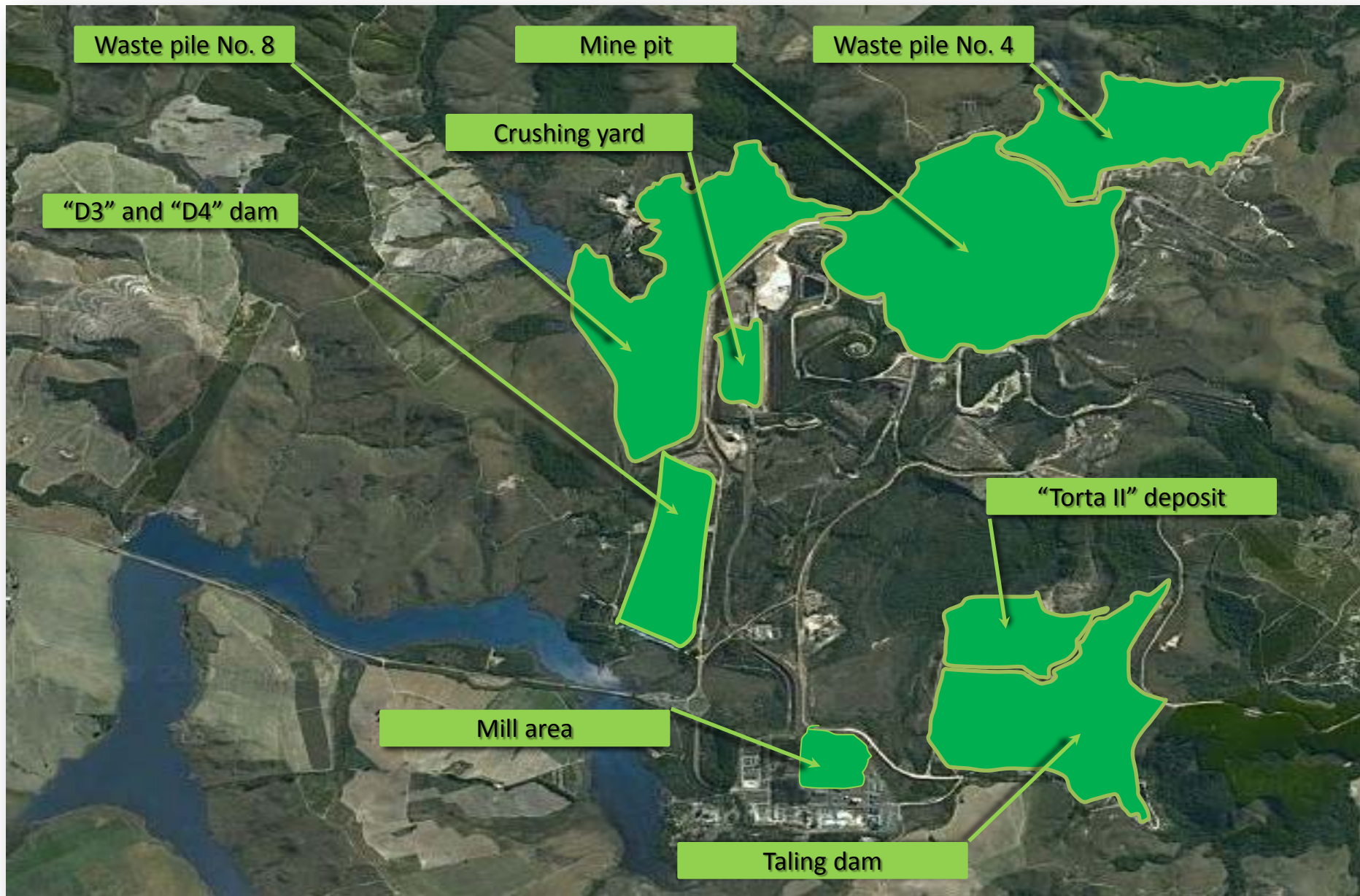


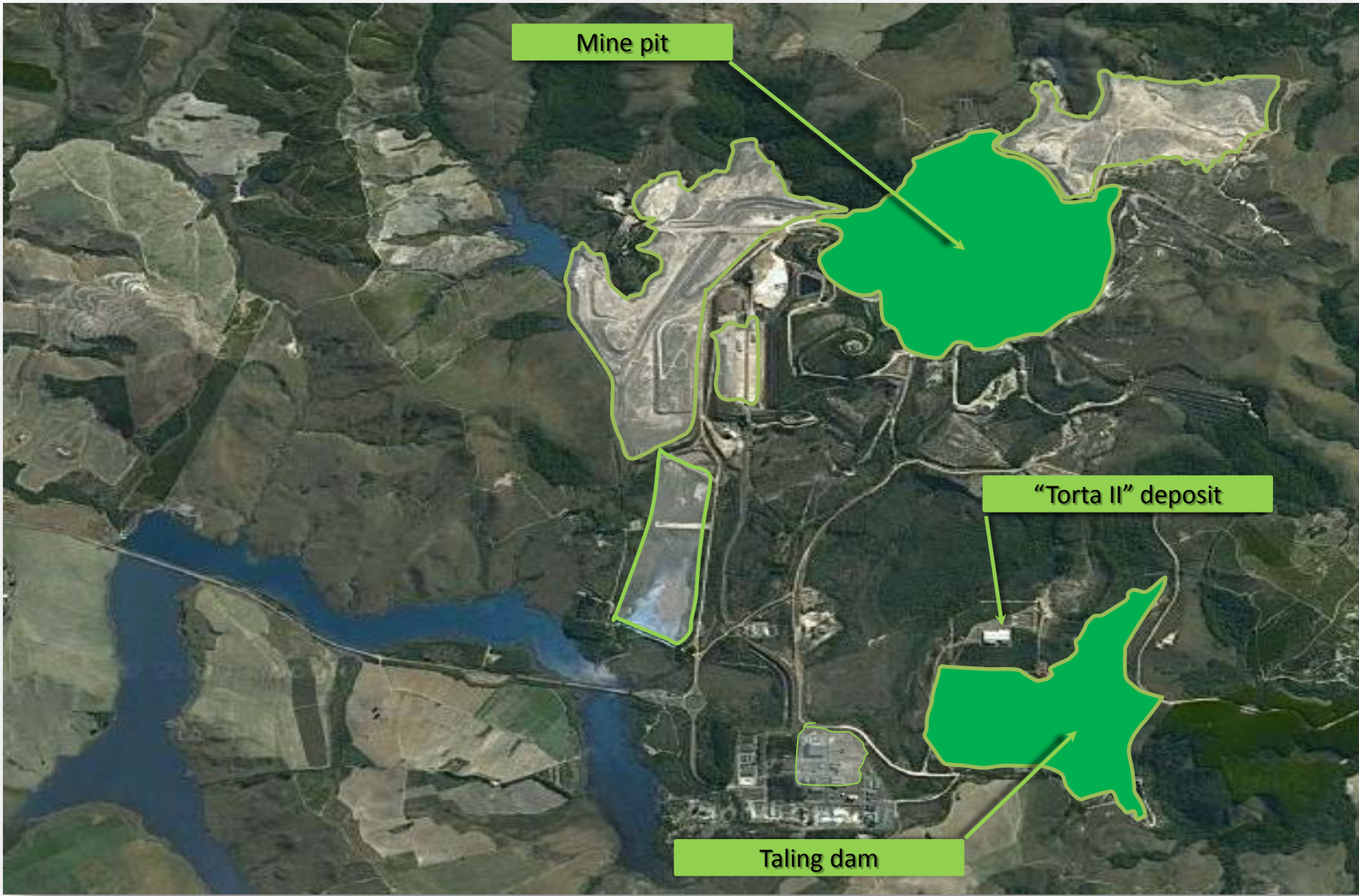
**Mine ore production: 2,300,000 t**



**Uranium production: 1,200 t**









Mine pit

In relation to future land uses, among the three evaluated scenarios, only the *park* and *restricted use* scenarios would meet the acceptance criterion. The *rural property* alternative would not meet the dose increment criterion, mainly because of the possibility of underground water use.

"Torta II" deposit

Tailing dam

**What could be constraining the implementation of these projects, what would be needed to improve the situation, what is the situation in your own country**

## ***THE SITUATION***

**Impact mitigating actions** – some different projects were submitted to the nuclear and to the environmental regulatory bodies, “CNEN” (national nuclear regulatory commission) and “IBAMA” (environmental Brazilian institute), respectively, with the aim of reducing acid water generation. The required time period to implement this projects is estimated in two years.

**Decommissioning** – the conceptual project has been approved by “IBAMA” in 2012. The required time period for the development of the detailed decommissioning project, including the invitation for the bid is estimated in five years.

**“TORTA II” deposits** – this radioactive material is stored in metal and plastic drums which are placed inside deposits. Due to aging, the package drums will be put into newer and greater drums. Also, more appropriated warehouses will be built.



**What could be constraining the implementation of these projects, what would be needed to improve the situation, what is the situation in your own country**

## ***BRIEF HISTORY***

**INB**  
(Operator)

**Jun, 1977**

Beginning of mine topsoiling

**May, 1982**

Beginning of operation

**Dec, 1995**

Production Stopped

**From 2002 to today**

Decommissioning

**CNEN**

(Regulatory governmental authority)

**Sep,1973**

Basic Radiation Protection Norm

**Dec,1984**

Nuclear Installation Licensing Norm

**Aug, 1988**

Certification of Radiation Protection Officers Norm

**Aug,1989**

Uranium and/or Thorium Mining and Milling Licensing Norm

**What could be constraining the implementation of these projects, what would be needed to improve the situation, what is the situation in your own country**

## ***CAUSES OF THE ACTUAL PROBLEMS***

- Lack of licensing knowledge by INB staff due to the absence of national norms during the first years of the Pocos de Caldas uranium mine operation.
- Lack of licensing organizational structure of INB.
- Late start of renewing the INB staff - practically only five years ago.

**What could be constraining the implementation of these projects, what would be needed to improve the situation, what is the situation in your own country**

## ***PROPOSED SOLUTIONS AND CONCLUSIONS***

- **Review and enlargement of the licensing organizational structure of INB.**
- **Increase of the INB staff with training in licensing processes.**
- **Invitation for bid of companies with experience in uranium mine site closures.**

**Thank You !**

**delcy@inb.gov.br**



**www.inb.gov.br**