**Geschäftsstelle**

Kommission
Lagerung hoch radioaktiver Abfallstoffe
gemäß § 3 Standortauswahlgesetz

## 16. Sitzung der Kommission am 2. Oktober 2015

# Anhörung „Rückholung/Rückholbarkeit hoch radioaktiver Abfälle aus einem Endlager, Reversibilität von Entscheidungen“

Präsentation zum Kurzvortrag
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**Kommission**
**Lagerung hoch radioaktiver Abfallstoffe**
**K-Drs. 130 c**

# The second French Scientific Evaluation Board on Research on Radioactive Matter and Waste Management (CNE2)

**Jean-Claude DUPLESSY**

**Chairman of the Board**

# Law n° 2006-739 on June 28, 2006

- Law n° 2006-739 on June 28, 2006 focused on the French policy for management of all kinds of radioactive matter and waste:

1. the law sets the research areas, milestones and targets to be reached, taking into account societal requirements;
2. the law establishes a Management Plan (elaborated by the Ministry of Industry) including interim storage/disposal of wastes and partitioning/transmutation of long lived radionucleides;
3. the law establishes a new National Assessment Board, in charge of assessing the progresses in research and studies dealing with the management of radioactive waste and matter.

# Composition of the second National Scientific evaluation board

The Parliament and the Government appoint 12 members:

- 6 members: (including at least one international expert) are appointed by the Parliament upon proposal of the Parliamentary Office of Evaluation of Scientific and Technologic Options; The chairman of the Senate and the chairman of the National Assembly appoint each 3 members.

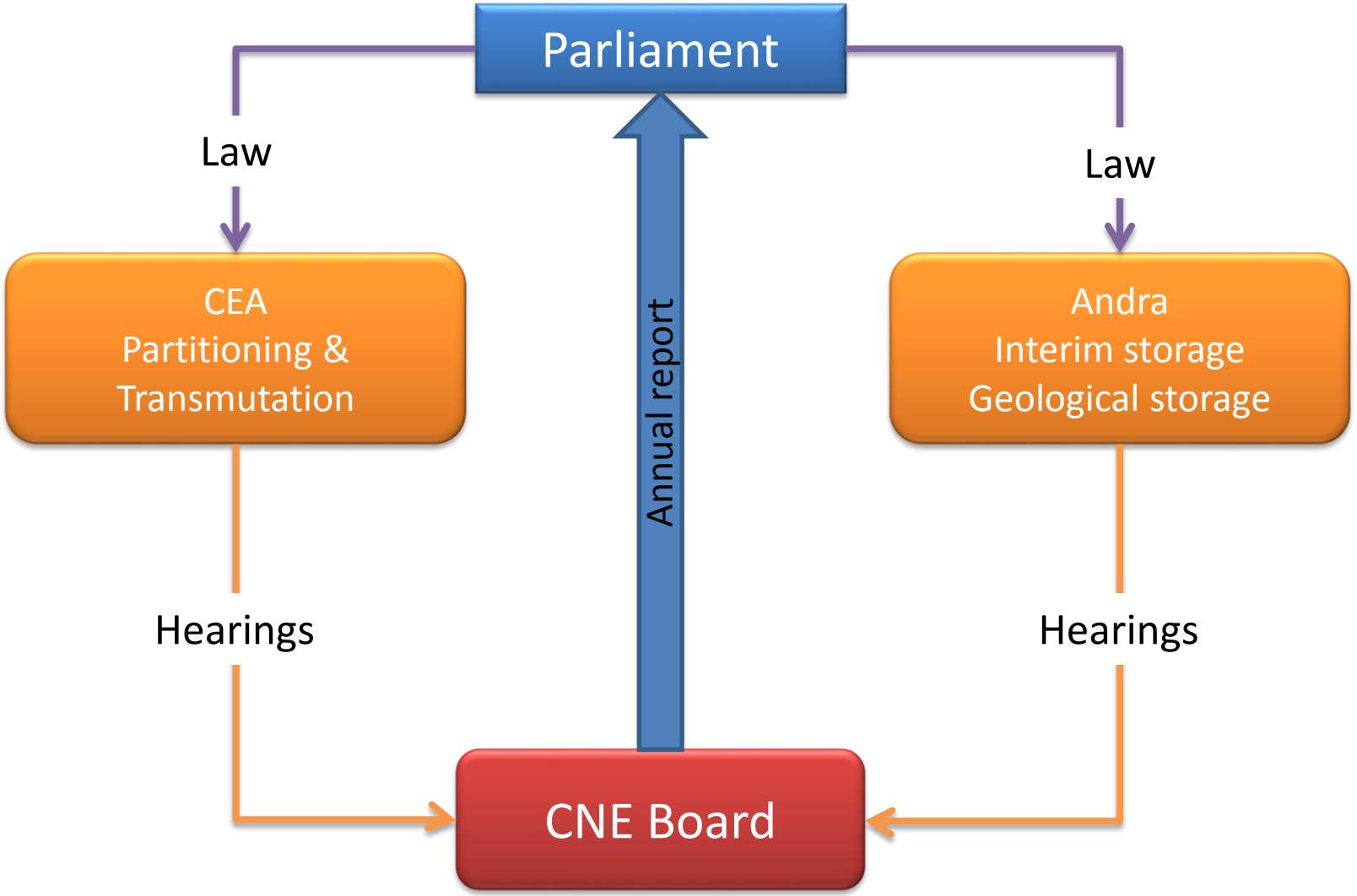
- 2 members: are appointed by the Government upon proposal of the Academy of Moral and Political Sciences.

- 4 members: are appointed by the Government upon proposal of the Academy of Sciences.

- Committee members are appointed for 6 years and may be renewed only once.

A Scientific Adviser is assisting the Committee.

# Role of the Board in the French system



# Choice of the geological site (France)

- The French potential sites have been pre-selected according to:
  - Social acceptability i.e. local authorities have proposed the sites
  - Geology (stability, hydrology, …)

- Three potentials sites have been pre-selected and further tested for:
  - Quality of the host rock
  - Retention capacity of radionucleides and the long term safety

- One site was selected: Cigéo in the Callovo-Oxfordien Clay
  - The granitic site did not offer any guarantee on the long term safety.
  - The best clay site was selected.
  - Reversibility was not an issue.

# Nature of the waste

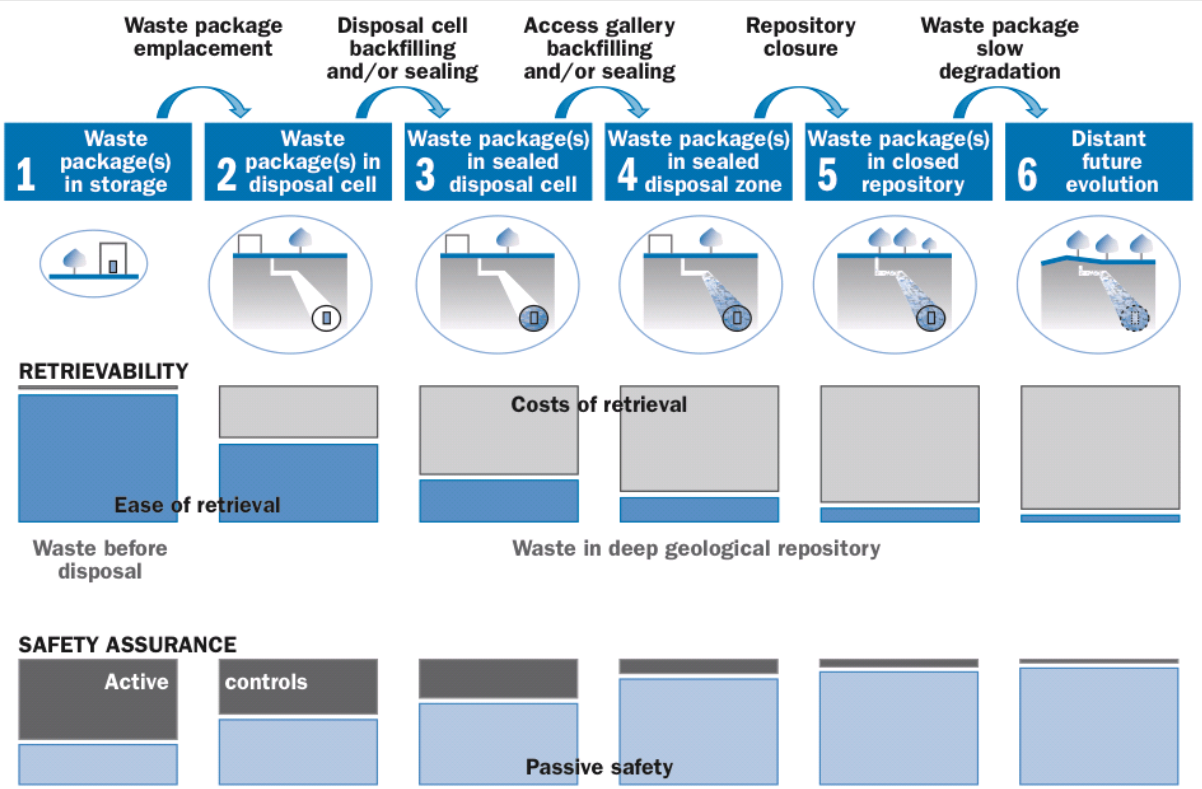
- France reprocesses the spent fuel in a near closed cycle

- Cigéo is devoted to receive:
  - the high-level long-lived waste (HLLLW) – mainly glasses containing minor actinides and fission products.
  - The intermediate-level long-lived waste (ILLLW) wich are ultimate waste without any potential interest.

- The reprocessing of the HLLLW and ILLLW is highly improbable:
  - HLLLW reprocessing would be extremly difficult from the chemistry point of view
  - ILLLW are ultimate waste

# Reversibility

# Nuclear Energy Agency scale of retrievability-reversibility




**Reversibility** is more than a **simplistic mechanistic notion**, focused on the model of a system that could simply work on a reverse mode , with no impact on safety.

Among the various dimensions of reversibility, **the social dimensions** demand more than a mechanistic model.

# Proposed definition of reversibility

*Reversibility is a management system consisting in guaranteeing to future generations the ability, at any stage of the scheduled disposal process, to decide whether to go on, to suspend, or to return to the previous stage.*

# Retrievability & Flexibility

To be effective, reversibility implies ***retrievability***, i.e. the technical and organisational ability to move the waste packages, or to return them to the surface.

This implies also a degree of ***flexibility*** when creating the facilities, taking into consideration scientific and technical breakthroughs and feedback.

# Reversibility & Safety-Security

*The Board considers that, in the event of a conflict between these concerns, priority must be given to workers/public security and long-term passive safety. Any operational device intended to facilitate waste packages removal should not jeopardize long-term passive safety.*

# Retrievability

*The French law states that reversibility must be guaranteed for a period of no less than 100 years. In agreement with this condition, the Board considers that the repository must be designed such that the first cells to be filled can be maintain at level 2 (NAE scale) for an initial observation period (10 to 20 years), before progressively switching to level 3.*

*A clear demonstration that going back from level 3 to level 2 is technically feasible must be available before any closure.*

*The Board does not consider that the option of leaving the entire repository at level 2 should be imposed by our generation upon forthcoming generations, as it may present major drawbacks both in terms of security and of safety.*

# Our generation’s responsability

*Our generation's responsibility is to design the most safe repository, making the best use of current knowledge.*

*Consequently, the progressive transition of cells from level 2 to level 3 must be included in the design and in the operational management of Cigéo.*

# View point of the Board on the retrievability

- Progressive closure is a smart attitude because:

1. It corresponds to the choice of security and long-term passive safety:
   - Reducing the risks of storage-specific accidents;
   - Avoiding indefinite postponement of structures sealing and site closure.
2. It reduces the social hazard as the risk associated with poor subsequent social management is much higher than the risk of a burial-related accident, the knowledge of which is objectively based on known physical and chemical laws.
3. It takes into consideration the highly improbable benefits of waste retrievability.
4. It avoids forthcoming generations the management of waste that they have not produced.

- For all of these reasons, the Board supports a progressive cell closure – it will be up to the next generations to verify whether this closure is appropriate, safe and secure.

# Forthcoming milestones

- A law on reversibility is expected before the end of 2016.

- Andra has to prepare the DAC (Demande d'Autorisation de Création, Creation Authorization Application) by 2017.