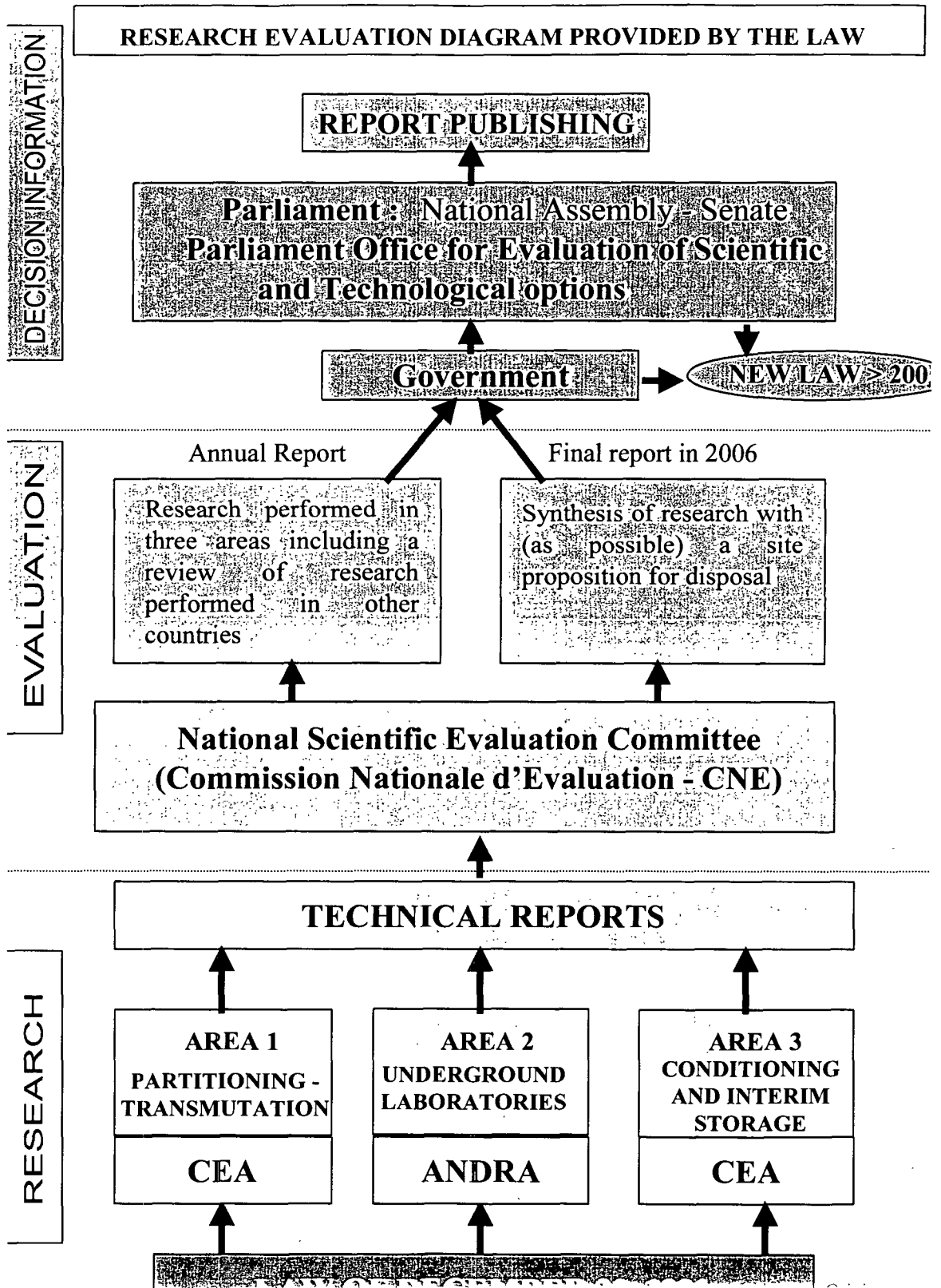


ESTABLISHMENT OF THE NATIONAL SCIENTIFIC EVALUATION COMMITTEE

**Law n° 91-1381 on December 30, 1991
on research on long-lived, high activity radioactive
waste management**

Article 4

- The government forwards to the Parliament an annual progress report prepared by the national scientific evaluation Committee (CNE) concerning research on high activity and long-lived waste.
- Research is carried out in three main areas :
 - * transmutation and partitioning,
 - * retrievable or irretrievable disposal studies by means of underground laboratories,
 - * studies of conditioning processes and long term interim storage (surface).
- The progress report also deals with research and implementation in other countries.
- After fifteen years, the government will forward to the Parliament a final report on the global evaluation of this research, possibly together with a bill on waste disposal.
- The Parliament refers to the Parliamentary Office for scientific and technological choices.
- CNE reports are made public.



NATIONAL SCIENTIFIC EVALUATION COMMITTEE'S

MISSION AND OPERATION

1. The Committee hears all actors involved in the three research areas, including contractors ; annual scientific reports are examined ; specific subjects are also presented by scientists or experts.
2. The Committee scrutinizes the results obtained by the research organizations.
3. The Committee collects advices from national or international experts.
4. After hearing all actors and examining all data, the Committee is able to write one annual assessment report :
 - * to summarise new results and progresses
 - * to give recommendations on :
 - ◆ research programs and agenda,
 - ◆ technical and scientific development,
 - ◆ new studies and objectives,
 - ◆ specific needs or complements, or gaps.

THE NATIONAL SCIENTIFIC EVALUATION COMMITTEE'S APPROACH

- The Committee aims to be independent to ensure :
 - The quality of its assessment
 - The credibility of its conclusions and recommendations
- The annual reports have been approved unanimously by the members of the Committee.
- On request or invitation, the Committee has set objective of widespread communication of its Assessment by setting up a dialogue with :
 - The Ministers and ministerial advisors
 - The Parliamentary Offices
 - The organizations in charge of the research and the other stakeholders
 - The Local Information Committees, established by decree.
 - The Press and the Public.
- The Committee wishes to be specifically informed on :
 - Research results and schedules
 - Follow-up of its recommendations

FIRST PATH: PARTITIONING AND TRANSMUTATION (P & T)

Part A – Partitioning

Research is going well for partitioning. Important results on chemical separation of several radionuclides (actinides, iodine and cesium) will be available by the 2006 deadline.

The National Scientific Evaluation Committee suggested to associate to the concept of Partitioning – Transmutation the one of Partitioning – Conditioning, consisting in incorporation of the separated elements in matrices with an increased confinement capacity.

Part B – Transmutation

Research on transmutation is mainly led for actinides and some long-lived fission products.

Fast neutron reactors or innovative solutions (Accelerator driven systems, molten salt reactors, high-temperature reactors - HTR -...) are the heart of this research. A program on HTR is being launched by the French Atomic Energy Board.

A fast neutron hybrid system demonstrator is to be envisaged in an european frame : a "roadmap report" is currently being issued, to be assessed by the CNE.

In any case, P & T relies on complex and costly processes and will address only the problem of high-level wastes, whose volume will amount to only a few thousand cubic meters.

Medium activity wastes (~ 100 000 m³ in 2020), containing some long-lived radionuclides, cannot take advantage of P & T and will have to be disposed of.

Path 2 – Geological disposal

- ANDRA's schedule is very tight, but ANDRA should be able to produce in 2006 a substantial preliminary project on possibilities for disposal in an argillaceous formation.
- Realization of an underground laboratory has just started at BURE in Eastern France. The experimental program to be performed in this laboratory is currently being assessed by the CNE.
- Mathematical modeling and numerical simulations are running late.

Path 3 – Waste conditioning and interim long-term storage

“long-term storage” is presently not defined by the law : finality and duration to be clarified

Part A – Conditioning

The research of new matrices for the conditioning of separated elements is being developed in three areas: vitreous, ceramic and glass-ceramic materials.

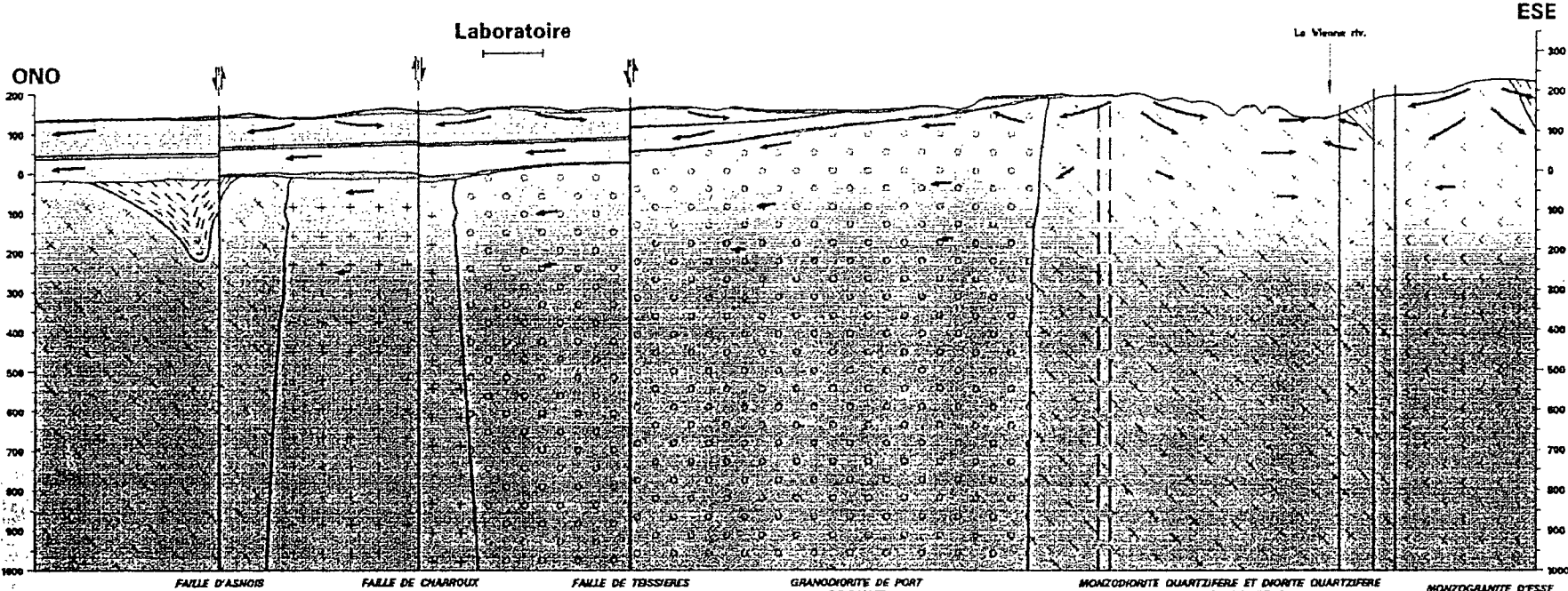
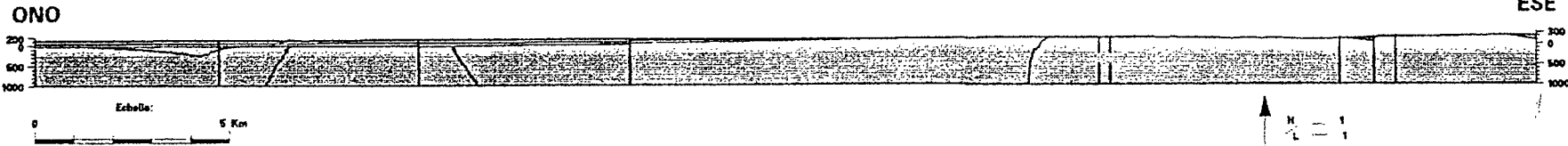
The study on the long and middle term behavior of the current matrices (glass, concrete and bitumen) seems to be well on the way.

Part B - Long-term interim storage

Questions on the integrity of the containers as confinement envelopes are predominant. Research programs are not yet defined.

Research coordination between long-term storage (in surface or in subsurface), and reversible disposal, is still to be organized.

07 août 1996



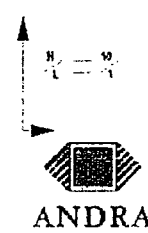
COUVERTURE SEDIMENTAIRE

- Tertiaire
- Dogger
- Lias supérieur : Toarcien
- Lias inférieur et moyen
- Lias inférieur détritique

SOCLE CRISTALLIN

- Métamorphique
- Granite à biotite
- Monzogranite porphyroïde
- Granodiorite, tonalite, diorite
- Monzogranite d'Esse

- Eaux peu minéralisées
- Eaux profondes salées
- Direction d'écoulement souterrain



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