

2nd Cipast Workshop Procida, 17-21 June 2007

External Case Studies Session

Citizens' engagement in designing future scenarios
for nuclear waste management in France

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Plan

- 1/ ANDRA and the HAVL project
- 2/ Historical record
- 3/ The 2006 Planning Act
- 4/ Your mission

ANDRA and the HAVL Project 1/5

- ANDRA is the French National Agency for Radioactive Waste Management, an independent State Agency with a threefold supervision (Ministries for Industry, Environment and Research)
- Facilities are specific to the different types of *ultimate* nuclear waste



Figure 1: Aerial view of the CSA.



Figure 2: Aerial view of the CSTFA.

ANDRA and the HAVL Project 2/5

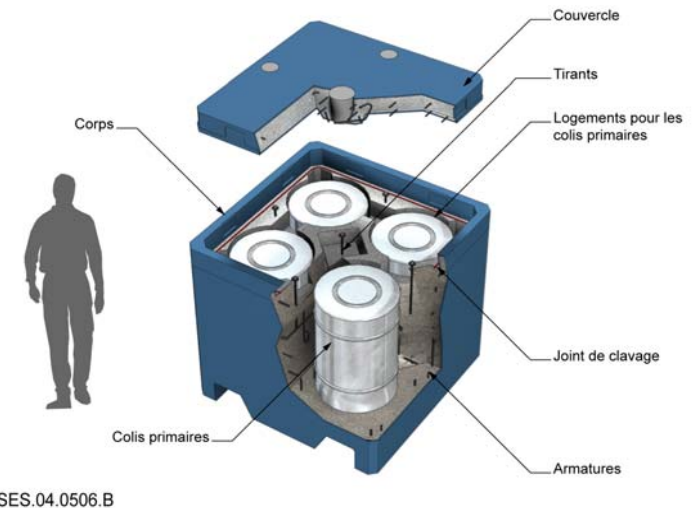
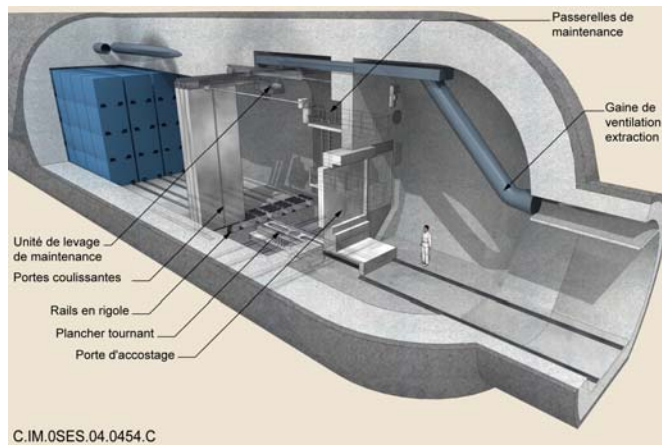
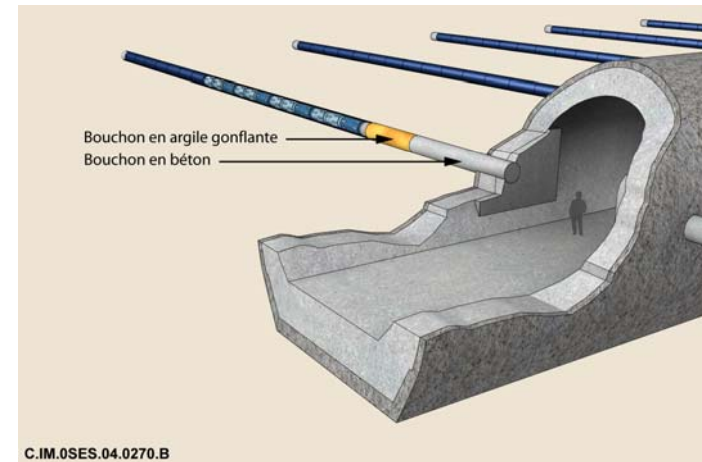
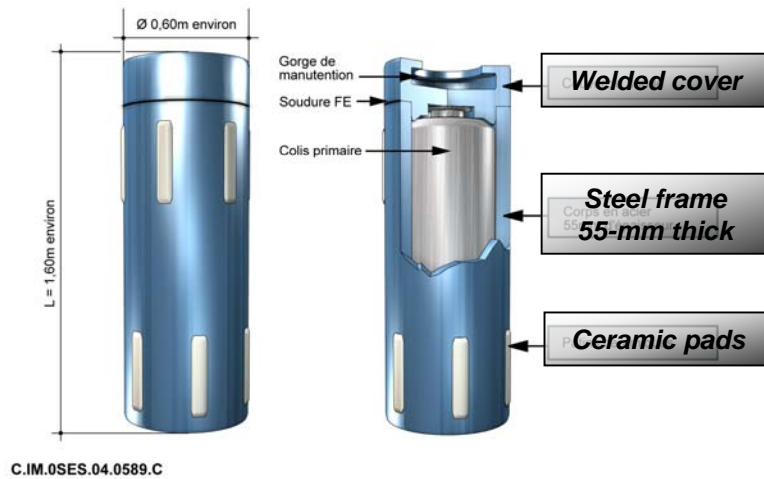
- The Planning Act 2006 reinforces ANDRA's mandate concerning all types of radioactive waste
- This law prescribes relevant investigations and studies with regard to high-level and intermediate-level long-lived waste: the HAVL Project

	Short-lived (half-life < 30y years)	Long-lived (half-life > 30y years)
Very low level (VLL)	VLL Waste Disposal Facility (Aube)	
Low level (LL)	LL/IL Waste Disposal Facility(Aube)	Investigations on repository projects Commissioning in 2013
Intermediate level (IL)		
High level (HL)	Investigations conducted in accordance with the Law of 30 December 1991, and now with the Planning Act of 2006	

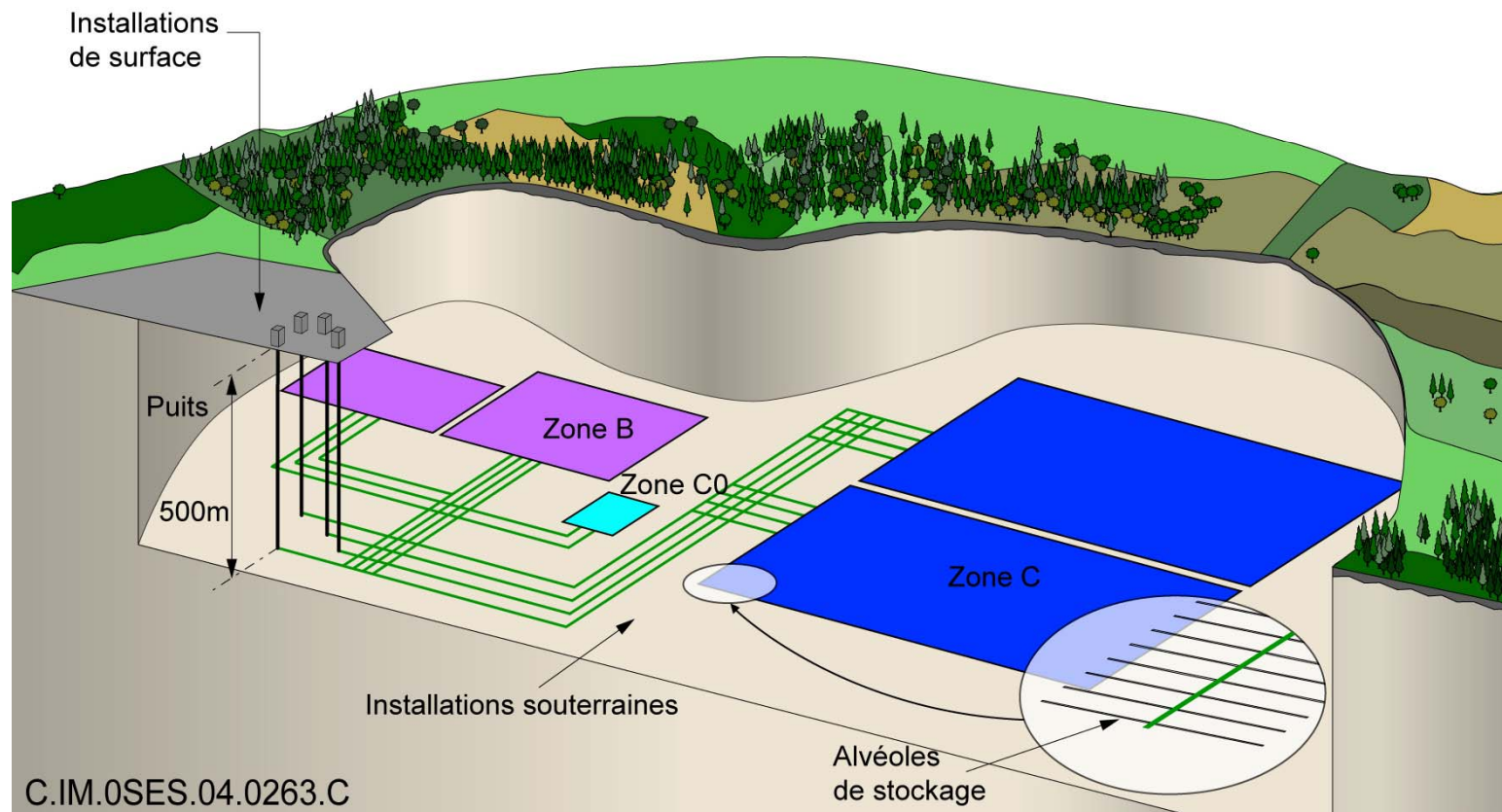
Figure 4: Classification of radioactive waste and status on disposal solutions.

ANDRA and the HAVL Project 3/5

A multi-barrier concept of security: matrices, containers, facility...

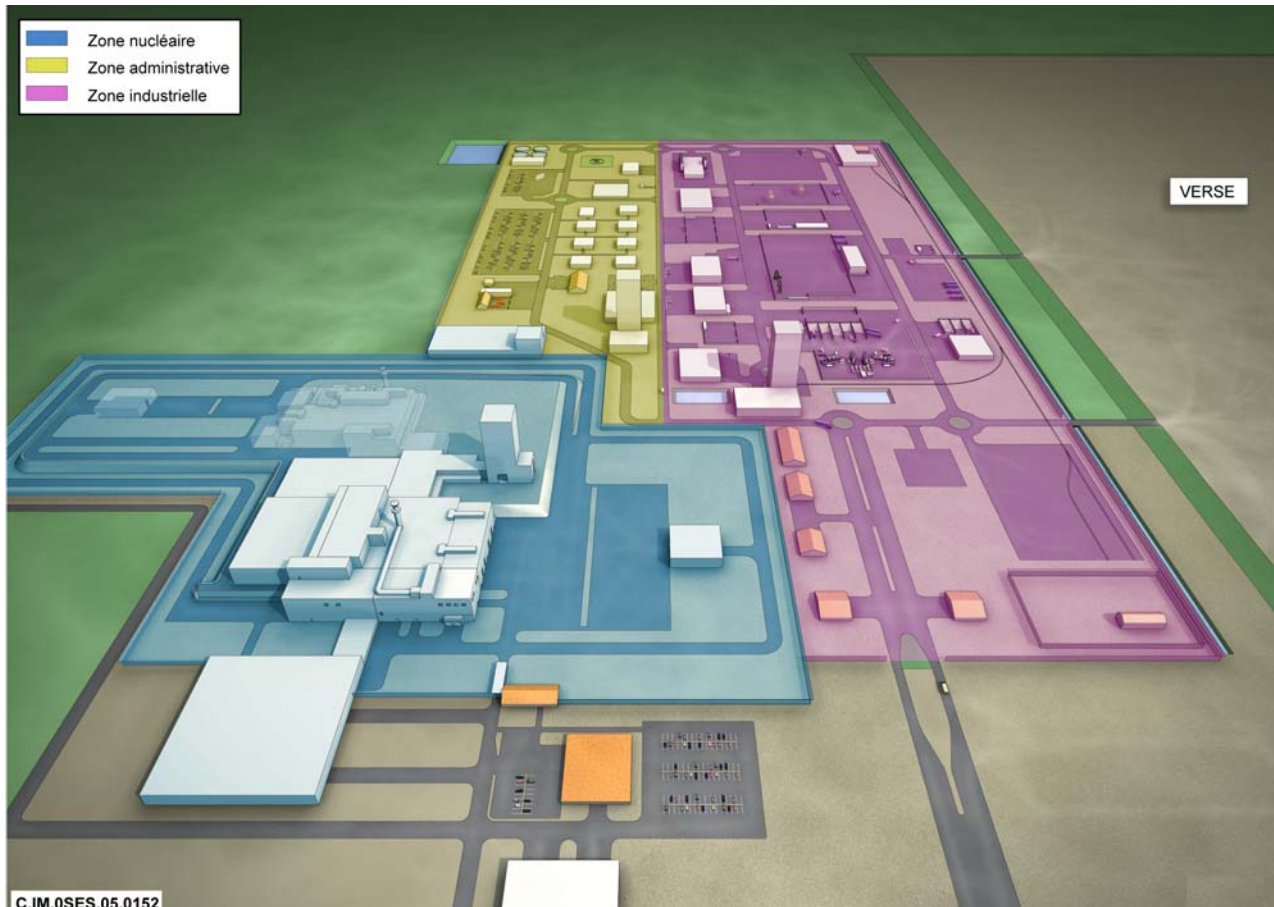


... and the soil



ANDRA and the HAVL Project 4/5

Surface facilities

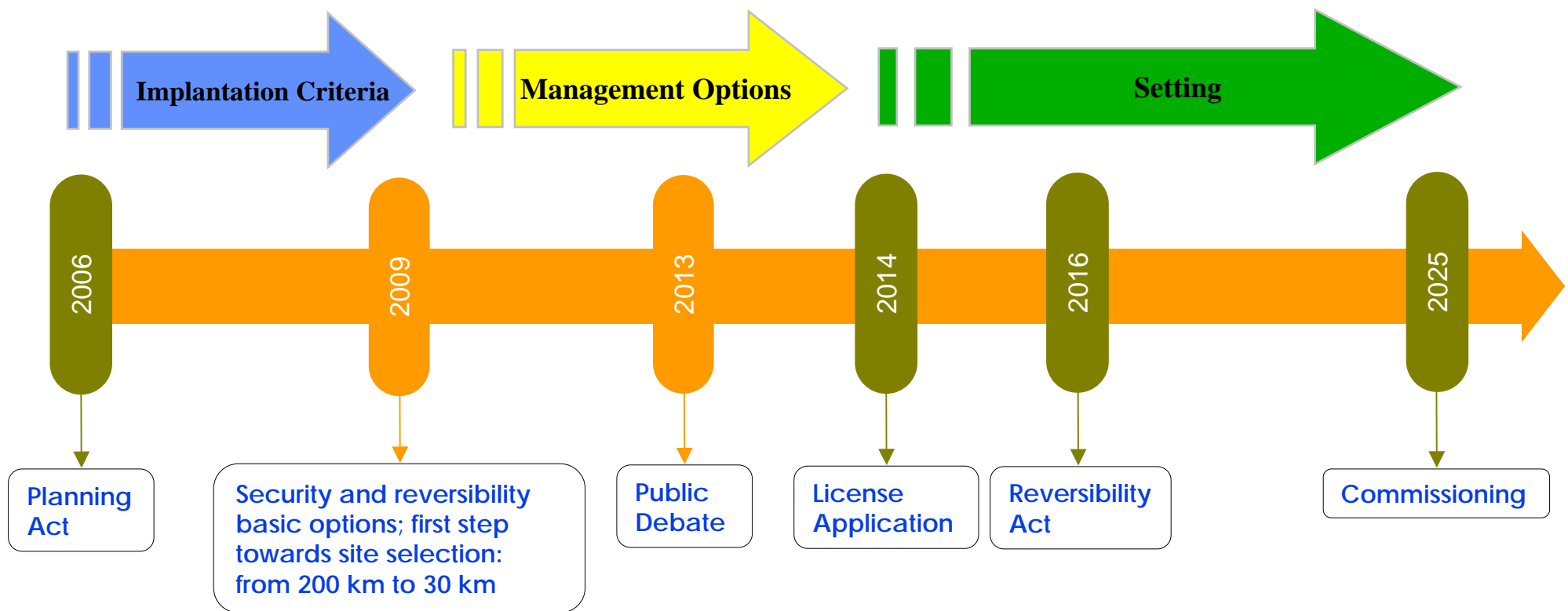


Associated activities:

- Conditioning of the waste and placing in a primary package
- Shipping of the conditioned waste and reception at a repository
- Further conditioning in a disposal package
- Transportation to the underground and final location

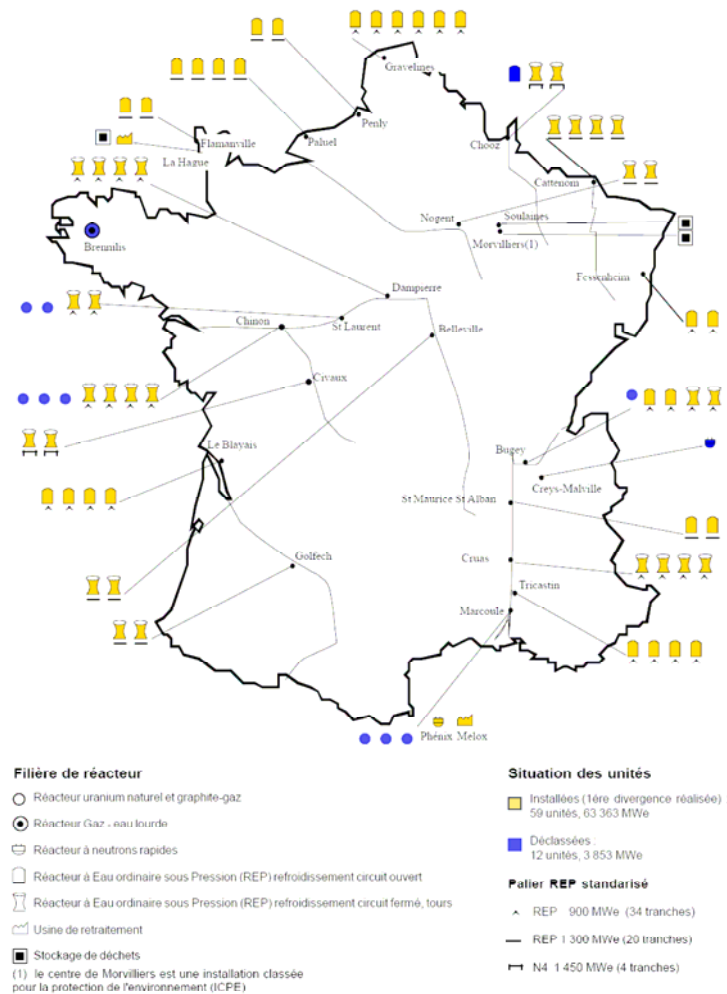
ANDRA and the HAVL Project 5/5

- Reversible disposal within a deep geological formation constitutes the **reference solution** for HAVL waste, following several stages until 2025



Historical record 1/4

Les sites nucléaires en France : situation au 1. 10. 2006



Even though nuclear facilities spread out all over France :

⇒ **1980s**: searching of laboratory sites for studying deep geological disposal on various types of rock faced strong opposition, leading to a moratorium and Mission Bataille (1990)

⇒ **1991 Act** on Radioactive Waste Management Research for high-level long-lived waste: a 15 years research period before taken new decisions

Historical record 2/4

- ⇒ Initiates a stepwise process in nuclear waste management
- To set up at least two underground laboratories, based upon the selection of potential candidate sites
 - To follow a more democratic process involving elected representatives and local communities >> according to the *concertation* imperative
 - To introduce external assessment and make ANDRA independent (from CEA and waste producers) >> State control
 - To compensate hosting communities
 - To assess results with the view of a draft law on future waste management in 2006

Historical record 3/4

⇒1994-1996 After selection of candidates: geological survey of a granite formation (Vienne district) and of two clay formations (the first one in the Gard district and the other one in the Meuse and Haute-Marne districts)



⇒1998 Choice by the government of the **Meuse/Haute-Marne Site**, definition of the scientific program and pre-selection of repository concepts covering a large spectrum of technical solutions to be compared >> compensatory measures and retrievability condition

Historical record 4/4

⇒1999 Abandon of a second site search into granite formations

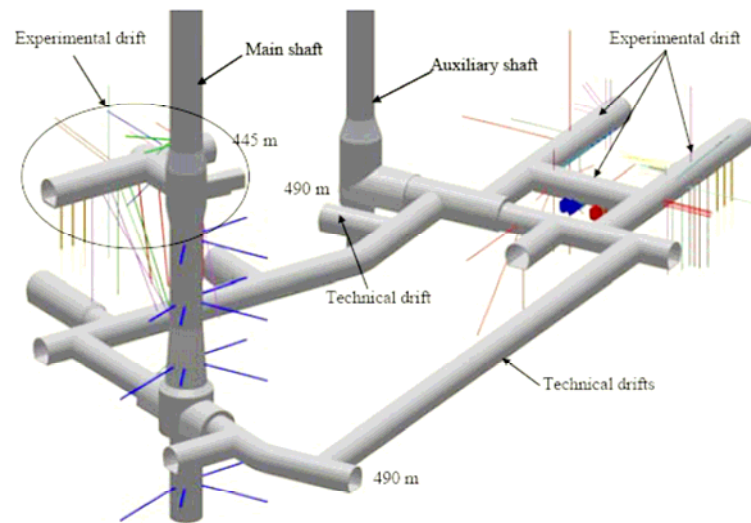


Figure 6: Layout of the Meuse/Haute-Marne Underground Research Laboratory.

⇒2005 Dossier: conclusion of the basic feasibility of an underground repository within a Callovo-Oxfordian formation with a reversibility rationale

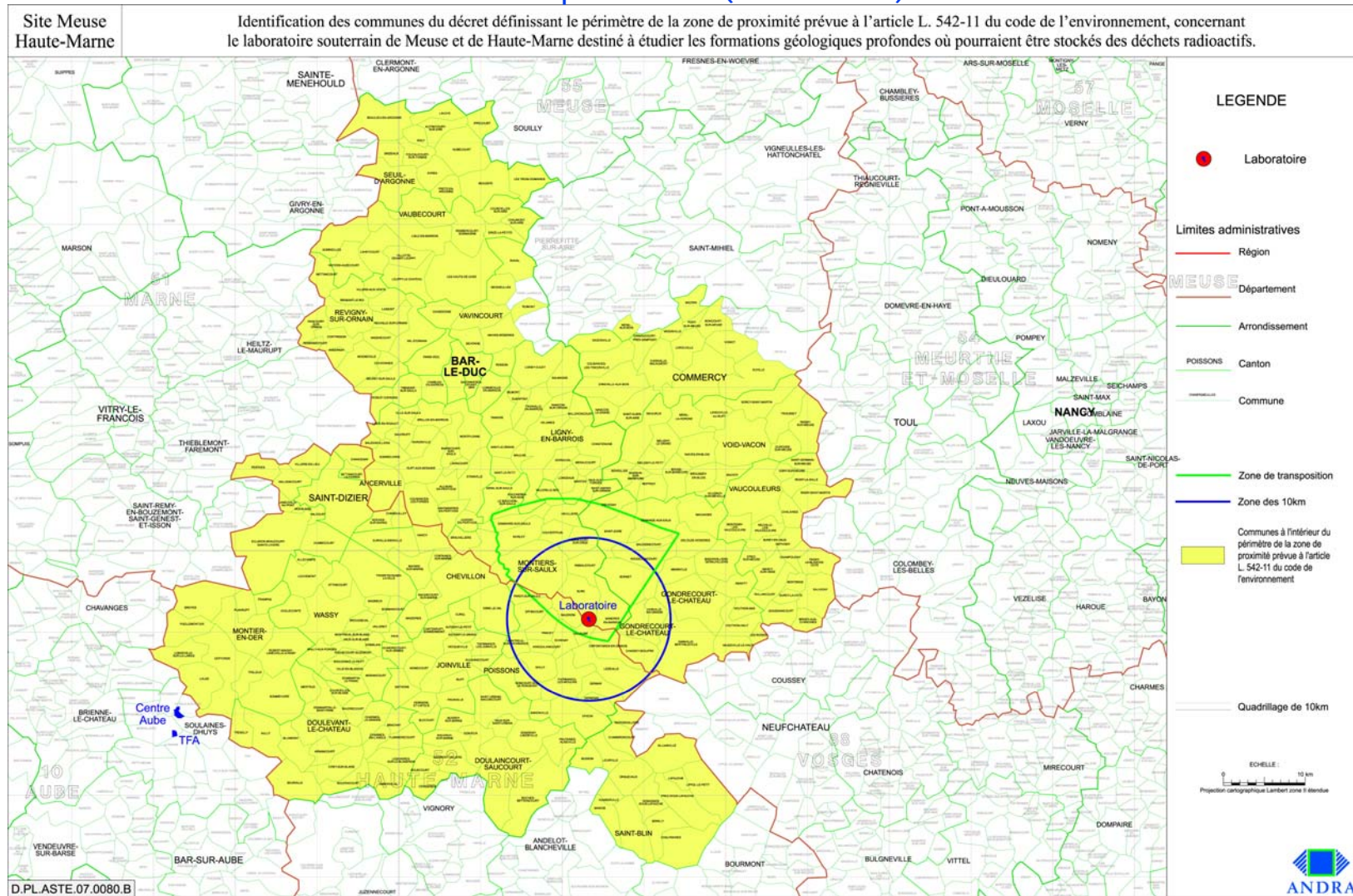
The 2006 Planning Act 1/2

- “after storage, any ultimate radioactive waste unsuitable for disposal in a surface or shallow facility (...) shall be disposed of within a deep geological formation” (2006 Act, Art. 6)
- Though reversible, a deep geological repository must be designed to maintain the waste “for a potentially definitive purpose” (2006 Act, Art. 5)
- Studies and investigations shall be conducted “with a view to selecting a suitable site and to designing a repository in such a way that (...) the application for the authorisation of such repository be reviewed in 2015 and (...) that the repository be commissioned in 2025” (2006 Act, Art. 3)
- But the host formation of any deep geological repository must have been previously submitted to studies in an underground laboratory

The 2006 Planning Act 2/2

- **PNGMDR** (National Radioactive Material and Waste Management Plan) every three years
- **CNE** (National Review Board) evaluation every year
- **CLIS** renovated (Local Information and **Follow up** Committee): among the functions of the new CLIS (expected by the end of 2007) there is a *concertation* mission concerning research on the management of radioactive waste, and especially on deep geological disposal
- **High Committee** for Transparency and Information on Nuclear Safety
- Nuclear industry involved in local development
- **GIP** (Public Interest Group): in charge of the economic development of territories 20 million euros/Département/year; resources are allocated, in priority, to a proximity area

The proximity area: a rural, exocentric, territory with few population and 312 small communities. The zone of transposition (200 Km²) has less than 3000 inhabitants



Your mission

- You are in charge of given advice to ANDRA about how to engage the local population in the processes of:
 - ⇒ site selection : the proposal of a small zone of interest by 2009
 - ⇒ preparation of the Public Debate in 2013
- You are asked to define the frame in which participation should take place and propose and justify a program:
 - ⇒ to identify barriers
 - ⇒ to characterize features of current framing
 - ⇒ to define the issues and objectives of the participatory procedure, etc.