



# French safety rules and Review approaches regarding the geological disposal

## ASN :

1. Establishes the regulation
2. Authorised the different phases of the construction of the laboratory
3. Surveys, from a safety point of view, the research conducted by ANDRA
4. Gives an opinion to the Government at the steps set by the law, on the basis of IRSN reports and opinions of a standing group of experts

**Published by ASN in June 1991**

**Defines safety objectives in the design and construction phase of a geological disposal**

**Up-date of RFS III.2.f since 2003 to take into account:**

- **Reversibility**
- **Feedback experience in France and abroad**
- **New recommendations of ICRP, IAEA, NEA**

**RFS III.2.f - Version of 1991 was the regulation applicable for the assessment of dossier 2005 of ANDRA**

- **IN REFERENCE SITUATION, THE LIMIT OF INDIVIDUAL DOSE IS 0.25 mSv/a FOR A TIMEFRAME OF 10 000 YEARS**
- **AFTER 10 000 YEARS, EVALUATION OF DOSE WILL BE MADE, AND THE LIMIT OF 0.25 mSv/a WILL BE KEPT AS A REFERENCE**
- **FOR NON-REFERENCE SITUATIONS, THE DOSE SHALL BE SUFFICIENTLY LIMITED COMPARED TO LEVELS OF DETERMINISTIC EFFECTS**

The Rule RFS III.2.f sets objectives on:

- the concept
- the packages
- the engineered barriers
- the geological barrier
  - Essential criteria:
    - Stability of the site
    - Hydrogeology
  - Important criteria:
    - Mechanical, thermal, geochemical
    - Minimum depth, no exceptional natural resources

**The safety evaluation shall consider:**

- **the justification of any advantageous feature on the performance of each barrier**
- **the evaluation of effects of the disposal on the host rock and the verification of the acceptability of these effects**
- **the evaluation of the future behavior of the disposal et verification that individual doses are acceptable**

## ASN conducts inspections in the Bure underground laboratory



## on geological disposal

- The ASN published in February 2006 its opinion on the dossier 2005 submitted by ANDRA, with the conclusions of the standing group of experts and the report of IRSN
- ASN concluded that it was reasonable to search a site in the area of 200 km<sup>2</sup> around the Bure laboratory for a geological disposal. It is likely to demonstrate the safety of such disposal in this area
- ASN pointed out that some additional studies should be undertaken :
  - Develop a strategy to investigate the 200 km<sup>2</sup> area
  - Make progress in some particular fields (ventilation...)

## of a reversible geological disposal

- **The ASN prepared the decree to authorise ANDRA to pursue the research in Bure laboratory until 31 December 2011 (Decree of 23 December 2006)**
- **The reversible geological disposal will be authorised as a nuclear installation by the Government, after an opinion of CNE and ASN**
- **The Parliament will establish the reversibility conditions of the disposal**
- **The Parliament will authorise the closure of the disposal**

- The law of 28 June 2006 is an important step in the development of a reversible geological disposal for HLW in France, since it is considered now as a reference solution.
- ASN is up-dating its regulation on the safety of a geological disposal, which should be available in 2007
- ASN will carry on the task in order to give its opinion on the safety of a project of geological disposal in the Bure region