

**Risk analysis of nuclear waste containers**

Field of activity

**NUCLEAR ENERGY**  
**Radioactive waste storage**

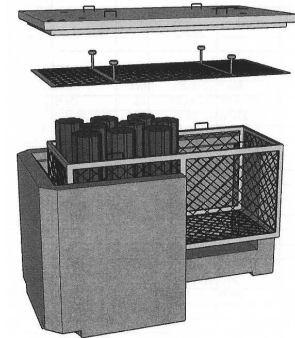
**Context**

OXAND's mission was to advise on the choice of a type of radioactive waste container. Two types of container were up for study: one made of reinforced concrete, the other of béton fibré métallique.

To analyse the containers' durability over several thousand years, OXAND carried out detailed quantitative studies to reinforce the audit.

The main difficulty was to compare the performances of very different storage solutions on

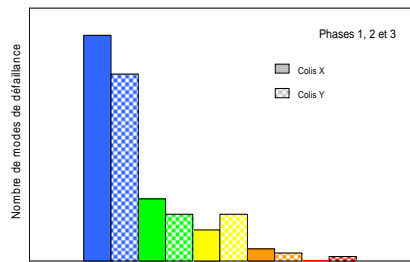
a geological time scale, by considering technical, economical, environmental and safety stakes.



Example of the principle of a nuclear waste container

**Methodology**

- Risk analysis of both types of container at various lifecycle phases
- Analysis of the industrial feedback concerning the two different concrete mixes
- Simulation of concrete degradation kinetics over a geological time scale (100 to 10,000 years) in their intended geological environment (SIMEO™)



**Value added**

- **Risk mapping for each containment option** (identified failure modes, analysed and ranked according to their criticality)
- **Recommendations** arising from an objective comparative analysis of the solutions
- **Strategic decision support**, linked to high economic stakes

**OXAND**

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