

The partnership experience on the disposal of low- and intermediate level short-lived waste in Belgium

Safety Case Symposium 2007
Session IV

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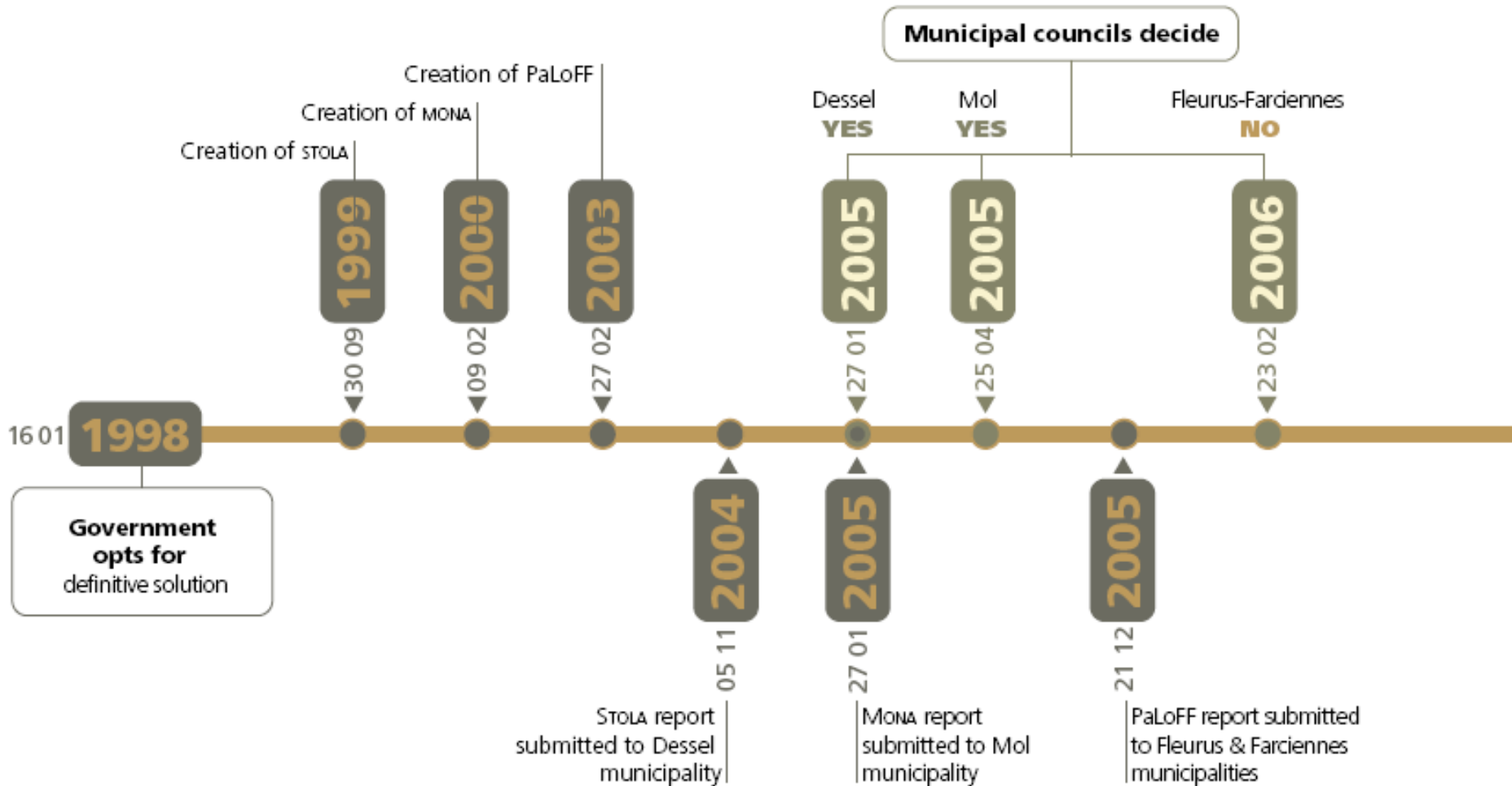
Overview

- Context – disposal programme and local partnerships
- The decision making process
- Information exchange, knowledge building and reporting
- Information integration challenge
- Confidence in repository safety
- The role of a safety case in the decisional process

1. Context (1/3)

- Category A disposal programme (low- and intermediate level short-lived waste)
- Governmental decision January 1998
 - LT storage abandoned
 - Missions for NIRAS/ONDRAF:
 - choice between surface and deep disposal to be prepared
 - methods & structures of dialogue with local stakeholders to be developed
 - siting activities to be limited to nuclear sites and candidate municipalities
- Pre-project phase 1998-2006
 - 3 partnerships
 - Site characterisation and selection
 - Site specific designs surface and deep disposal (no partnership preference) + safety assessments (mainly LT)

1. Context (2/3)



1. Context (3/3)

- Decision Federal government June 2006
 - Based on the final partnership reports of Dessel & Mol + NIRAS/ONDRAFs « closing » report
 - Near-surface disposal in Dessel to be developed → preparation of licence application
 - Continued dialogue with local stakeholders

2. The decision making process (1/2)

- Two levels
 - National decisions (Federal Government) 1998 and 2006
 - Local process of dialogue and decision 1998-2005
- Why was the local process in Dessel and Mol successful ?

2. The decision making process (2/2)

- Well-defined objectives and scope (1998 national decision)
 - but local frustration : high-level waste excluded
- Academic experts developed concept of partnerships and led preparatory local discussions
- Municipality council negotiated and approved creation of partnership
- Broad local representation and independent membership
- Local empowerment \Rightarrow veto right
 - but: would federal government respect local decisions ?
- Reach out efforts to local population
- Two level acceptance required : both partnership (working groups, council, general assembly) and municipality council had to accept repository project
- Timing flexibility allowed (2 \Rightarrow 6 years !)

3. Information exchange, knowledge building and reporting (1/3)

- Main question for partnerships: under what conditions is a repository for category A waste in the municipality acceptable?
- 4 working groups
 - siting and design
 - safety
 - environmental protection & health
 - local integration of the project

3. Information exchange, knowledge building and reporting (2/3)

Three main phases

1) **Information acquirement period**

- Little or no familiarity with the issue
- Heterogeneous working groups
- Means: information sessions, technical visits, invitation of external speakers, participations in workshops...
 - Themes largely defined by groups
- Allowed to better define the boundaries of and interfaces between the working groups

3. Information exchange, knowledge building and reporting (3/3)

2) Study and evaluation period

- Difficulty of structuring the process within the working groups “safety” and “protection”
 - Site and design group:
 - main components of the repository
 - main phases of repository development
 - Safety group:
 - What is covered by « safety » ?
 - LT safety assessment methodology and results (FEPs and scenarios)

3) Conclusive discussions and repository

- approx. 1 year
- final working group reports + final partnership report

4. Integration of information

Major challenge for the partnerships

- Through interaction between working groups (or their presidents)
- Within the council of the partnership (supervising the working groups)
- Two persons permanent staff (1 technical and 1 social profile)

⇒ mainly through the 3rd mechanism

⇒ site and design working group also dealt with safety aspects

5. Confidence in repository safety (1/4)

The process

- Clear scope and objective
- Open to all inhabitants
- Easy access to information (speakers, agenda of meetings, reports, ...)
- Noticeable influence on decisions at various levels (agenda and topics of meetings, invitation of external experts, conditions for acceptance, ...)
- NIRAS/ONDRAF willing to take into account criticism
- Presence of critical persons (external experts)
 - Working groups accepted only constructive criticism

5. Confidence in repository safety (2/4)

Quality of information provided

- First way to judge the implementer
- Coherency of messages and data
- Way of presenting the information – attitude of NIRAS/ONDRAF staff
- Tailored and well-dosed information packages (presentations)
 - How does it fit in the global picture ?

5. Confidence in repository safety (3/4)

Intrinsic quality of disposal system

- Contributions of site and design to safety
 - Function / role of every system component
 - Design improvements to compensate for unfavourable site characteristics
 - Organisation of waste transport & handling and repository operation
 - Mechanisms of component failure (daily life experiences)
- Qualitative discussion more important than quantitative assessments (dose calculations seen as necessary confirmation)
- Radioactive decay and long-lived activity (+ non-decaying chemical toxics)
 - Time scale for control period (a few hundred years for surface disposal and a few decades for deep disposal)
 - Longer time scale for assessments

5. Confidence in repository safety (4/4)

- **Knowledge maintenance and transfer**
 - Disposal as long-term endeavour (operation, closure, controls) requires maintenance of nuclear knowledge
 - National and local challenge
 - Transfer of knowledge seen as complementary line of defence
- Important local condition for acceptance

6. Role of the safety case

- Collection of arguments in view of a decision and description of the way forward
- Very broad range of arguments
 - Low importance of calculated impacts
 - Qualitative scrutiny and assessment of disposal system
 - System coherency (safety functions)
 - Realistic design expectations ? (e.g. degradation of barriers, longevity of monitoring devices, ...)
 - Favourable and unfavourable site characteristics
 - Main elements were discussed
 - safety strategy
 - **system concept and system understanding**
 - assessment methodology and tools
 - assessment results