

LAST DEVELOPMENTS IN THE BELGIAN DISPOSAL PROGRAMME FOR LOW AND INTERMEDIATE SHORT-LIVED WASTE

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ABSTRACT

After an historical reminder of the several phases of the Belgian program for the disposal of low and medium level short-lived waste since the creation of ONDRAF/NIRAS and the bad results obtained in the 90's by using a pure technical approach, the presentation will explain the main lines of the new methodology developed, as a consequence of the government decision of 16 January 1998 in ONDRAF/NIRAS to improve local acceptance for the disposal project.

The way local partnerships were created with four nuclear municipalities under the form of a non-profit organization with a clear mission, the functioning, on a voluntary base, of the different partnerships during four to six years and the concrete results obtained until now using this very innovative method will be addressed.

The last developments of the Belgian program for the disposal of low and medium level and short-lived waste will be presented, including the recent and very important decision of the Belgian government of 23 June 2006 to dispose of the low and medium active short-lived waste in a surface disposal installation on the territory of the municipality Dessel.

1. Introduction

ONDRAF/NIRAS, the national Agency for radioactive waste and enriched fissile materials, estimates the total volume of waste that will be produced until 2060, i.e. the end of the dismantling activities, at 70 500 m³ of short-lived low and medium active (category A) waste.

The council of ministers of 23 June 2006 took an important decision regarding the long term management of category A waste. He decided to dispose of the low and medium active short-lived waste in a surface disposal installation on the territory of the municipality Dessel. This decision makes it possible to develop the next phase of the program so that a disposal installation may be realized concretely.

2. Disposal of category A waste: the failure of the pure technical approach

ONDRAF/NIRAS started working on the long-term management of short-lived low and medium level waste shortly after its creation in 1980. Practiced on a regular basis in Belgium until the early eighties, sea disposal of conditioned low and medium level waste had indeed become very uncertain in 1984, when Belgium decided to adhere to the international moratorium of 1983 between the signatory countries of the London Convention on sea pollution. This decision prompted ONDRAF/NIRAS to launch studies to look for another solution, which would be safe and technically acceptable, for the final disposal of this type of waste on Belgian territory.

In 1994, ONDRAF/NIRAS published the NIROND 94-04 report. This report concluded the feasibility of disposing of at least 60% of the short-lived low and medium level waste produced in Belgium at surface level, while strictly following the recommendations of the various relevant international organizations. It also identified 98 zones on Belgian territory as potentially suitable, according to the bibliographical

survey carried out, for hosting a surface repository for short-lived low and medium level waste. The multidisciplinary scientific advisory committee set up by ONDRAF/NIRAS' Board of Directors to examine the report issued a globally positive evaluation, but recommended extending the research to fields related to economics and human sciences.

Far from going unnoticed, the 1994 report was rejected unanimously by all the local councils on the list. To its surprise, ONDRAF/NIRAS had caused a general outcry. And yet, had it not been given the responsibility to develop and propose, through an objective and rational approach, a safe solution to the radioactive waste problem? Neither the political authorities nor ONDRAF/NIRAS had realized in due time what the implications were in the field of public consensus when it turned out to be necessary to look for a favorable geology outside the existing nuclear sites. As a result, the publication of the NIROND 94-04 report in April 1994 led to a public deadlock.

The working method applied in the past by ONDRAF/NIRAS aimed to select the future disposal site for short-lived low and medium level waste on the basis of a scientific approach that had been very carefully worked out by its experts. ONDRAF/NIRAS thought – maybe rather naively – that the actual setting up of a repository would cause no problems once it had been proven that the chosen site was one of the best possible choices from a technical point of view. ONDRAF/NIRAS looked at this time for a solution for the radioactive waste problem in an objective and rational manner. Gradually, the agency understood the necessity to take into account the socioeconomic aspects of setting up a final repository on the national territory.

3. Breaking the stalemate

In 1995, in an attempt to break the stalemate, the government commissioned a study by ONDRAF/NIRAS on the possible alternatives to surface disposal. The final report, the NIROND 97-04 report, published in 1997, compared surface disposal with deep disposal and prolonged interim storage. It recommended that the government should base its decision on ethical considerations. Indeed, ONDRAF/NIRAS supports the view that the current generations are responsible for ensuring that future generations will not have to actively take care of the management of the radioactive waste they will have inherited.

On the basis of this report the Belgian federal government opted, on 16 January 1998 for a final or potentially final solution for the long-term management of short-lived low and medium level waste. The government also wanted this solution to be implemented in a progressive, flexible and reversible manner. With this decision, the prolonged interim storage option was abandoned in favor of either surface disposal or deep geological disposal.

At the same time, the government entrusted new missions to ONDRAF/NIRAS, to allow the government to make the necessary technical and economic choice between surface disposal and deep geological disposal. ONDRAF/NIRAS was assigned to develop methods, including management and dialogue structures, necessary to integrate a repository project at local level. Furthermore, ONDRAF/NIRAS had to limit its investigations to the four existing nuclear zones in Belgium, namely Doel, Fleurus, Mol-Dessel, and Tihange, and to the municipalities interested in preliminary field studies.

4. A new concept: the local partnership

After the government's decision of 16 January 1998, ONDRAF/NIRAS set up a work program based on a new work methodology. The idea of local partnerships was developed to ensure that every party liable to be directly affected by a collective decision has an opportunity to express its opinions. The local partnership project is an attempt to address the low and medium level waste disposal-siting problem through both technical research and concept development, and interaction with the (local) stakeholders. The partnership concept was developed by researchers in Social and Political Sciences of the university of Antwerp (UIA) and the research group SEED (Socio-Economic Environment Development) of the university of Luxemburg (FUL), on the basis of intense dialogue with ONDRAF/NIRAS.

The idea behind the partnership concept stems from the presumption that collective decision-making in a democratic environment is always a process of negotiation. Different interests, opinions and values are thereby weighted one against the other. This weighting of interests is something that should be done by the stakeholders and not for them.

By creating partnerships, ONDRAF/NIRAS intended to bring the decision-making process closer to the public, and to lower the threshold for active participation. The purpose was to create a representative body of the different stakes involved in this decision making process. On the one hand this is necessary to obtain a complete picture of the viewpoints, interests, needs and values that are at stake in this particular community, regarding this particular issue.

The general interest of the community will be the outcome of a process of dialogue and discussion among these different stakes. As many stakeholders, with as many different backgrounds and opinions as possible, should therefore be invited to actively participate in the partnership. Local partners should represent different political, economic, social, cultural and environmental movements or organizations within the community.

On the other hand, this setup should provide the key to creating an inclusive, transparent, flexible and stepwise decision making process that can be considered to be sustainable and fair by all parties. Even if, in the end, not everybody is completely happy with the outcome of the process, the fact that it was seen as fair, representative and transparent, can still make the outcome an acceptable one for the entire community.

Discussing in depth the pro's and con's of a low and medium level nuclear waste repository in the surroundings, however, is not something that can practically be done through public hearings with several hundred people attending. Therefore, it was decided to work out an adapted, clear organisational structure that fits the goal. This is why the local partnerships were set up as non-profit organisations of volunteers willing to discuss whether and under which circumstances they can possibly accept a repository; and with the mandate to work out an integrated pre-proposal of a repository, integrated in a broader added value project designed to fit the specific environment supported by the local population.

The concept of local partnership was first discussed with different local stakeholders and, on their recommendation, adapted to meet local needs.

5. Partnership: a non profit organization with a clear objective

A local partnership should be considered as a representative democracy on a micro level. Overseeing the whole "operation", a *general assembly*, uniting representatives of all participating organizations, decides on the main course and sets out the beacons for the actual discussions. The general assembly appoints an *executive committee*, in charge of the day-to-day management of the organization. The committee is, amongst many other things, responsible for the co-ordination of working group activities, decision making on budget spending and the supervision of the project co-ordinators.

In several *working groups*, all different aspects of the implantation of a low level waste repository in the community are being discussed. Here all relevant existing research is taken into consideration, the need for additional studies is evaluated and independent experts whose opinion is considered as relevant are invited to participate in the debate. The working groups concentrate on technical aspects, such as siting and design, environment and health, safety assessment as well as on social aspects: local development. The working group Local Development analyses socio-economic issues and projects, formulates prioritisation criteria and founding modalities. The more technical working groups evolve from general information through specific information on siting and the disposal concept towards a final disposal concept. The working groups report regularly to the executive committee. They are composed of both representatives of the organizations that founded the partnership, as well as individual citizens who expressed an interest to participate actively in this discussion forum. Within those working groups, the ONDRAF/NIRAS representative enters into direct dialogue with the local community, interested in hosting

the project. Questions, reactions and suggestions from the public, required the organisation to rethink many aspects of the initial concept or project.

Since all these people participate on a voluntary basis, at least two full time *project co-ordinators* need to be employed by the partnership. These project co-ordinators take care of administrative and communication tasks and support the working groups both logistically and scientifically.

It was considered important that the partnership should have its seat at the heart of the community concerned. A partnership is not a field office from ONDRAF/NIRAS, but an independent local organization in which ONDRAF/NIRAS participates as the only non-local partner amongst a multitude of local stakeholders. This location “on site” gives the partnership a “face”. A clearly visible presence in the community creates awareness amongst the not participating citizens and the premises of the partnership can serve as an open platform where citizens can come with their questions, remarks interests, fears, values or concerns. In order to allow the partnership to work independently, each partnership receives an annual budget from ONDRAF/NIRAS of approximately 250.000 EUR.

Maybe the most important and probably the most innovative aspect of the partnership approach, is that the partnership does not only decide (or at least advises to the community council) on every details of the repository concept and where it should (or should not) be implanted. Through the partnership, the local community can decide on what they consider to be the necessary conditions (technically, environmentally, aesthetically, socially, etc.) for such a repository.

Furthermore, within the partnership, an accompanying local project that seeks to bring added value to the community will be developed to obtain an integrated project creating a win-win situation.

When finally, all, or at least a majority of the parties involved come to an agreement on what their integrated project should look like, this is presented to the municipal council which decides to accept or reject the proposal, adding or not some specific conditions. Since the final word in this matter lies with the municipal council, it is also essential that council members are fully aware of the implications of their decision. To avoid the risk of conflicting interests between local politicians and the other members of the community, an active involvement of the representatives of the political arena is hence encouraged.

It was the responsibility of the federal government at last to make a choice between surface disposal or deep disposal and to decide where the repository should be implemented.

6. Most important achievements of the programme

As a result of the new approach, three local partnerships have been created ; the first one with the municipality of Dessel (creation of STOLA-Dessel in 1999), the next one with the municipality of Mol (creation of MONA in 2000) and the third one with the municipalities of Farciennes and Fleurus (creation of PaLoFF in 2003).

On 5 November 2004, after five years intensive work, the STOLA-Dessel partnership submitted its report to the municipal council. The MONA local partnership presented its findings to Mol municipal council on the 27th of January 2005. Both local partnerships proposed two different technical disposal concepts, one on surface, the other in the Boom clay formation present in the underground of their municipality. Both local partnership considered the disposal of category A waste as acceptable, provided that all their conditions are met. These conditions relate to various areas. The concerns of the local communities about the possible effects of a repository on health, safety and the environment are reflected in a number of concrete and strict conditions regarding the disposal concept. Furthermore, the local inhabitants expect, as initially promised, that a disposal project will bring social, cultural and economic added value, which will benefit the future development of the municipality. Finally, they demand continuous participation in monitoring the future development of the project and explicit their appreciation of the contribution made by the municipality for solving this important social problem.

The municipal council of Dessel pronounced itself unanimously on this dossier on 27 January 2005. The municipal council of Mol pronounced itself on 25 April 2005. The municipalities of Dessel and Mol and

their respective partnerships declared themselves ready to consider the possibility to accept a disposal site on their own territory at condition of the respect of specific conditions associated to the implementation of the disposal infrastructures.

As before, local participation will still constitute a critical factor for success in future discussions. In the community of Dessel a new partnership STORA has been founded on 27 April 2005. This partnership will not only do the follow-up of the STOLA file but will also discuss on the management of all radioactive waste stored on the territory of Dessel. Meanwhile, partnership MONA modified its statutes and its name on 24 November 2005 but kept the original acronym unchanged.

On 21 December 2005, the partnership in Fleurus and Farciennes, who had developed a common half-buried disposal project, decided to submit the final report of PaLoFF to both local councils. But on 23 February 2006, the municipality councils of Fleurus and Farciennes decided to put an end to the integrated project and consequently to the participative process.

In May 2006, ONDRAF/NIRAS submitted his final report to the federal government. This report contained all the information necessary to take the political decision regarding the future of the program with full knowledge of the facts. This report also puts an end to the activities linked to the development of integrated pre-projects by the local partnerships.

On the base of this final report the council of ministers took on 23 June 2006 the decision to dispose of the low and medium active short-lived waste in a surface disposal installation based on the technical concept developed by the partnership STOLA, on the territory of the municipality Dessel.

This decision marks the transition to a new stage: the stage of the detailed studies (approximately 5 years) in which the licence application files that are necessary to start the construction of the repository will actually be prepared. As the municipalities have pronounced on the conditions that they lay down for a possible repository on their territory, the concrete implementation of the local conditions will be discussed with all stakeholders in the next stage of the decision-making process. At the end of the detailed studies period, all parties involved should have reached a final agreement fixing the rights and obligations of all the parties. Only when all parties will be in formal agreement with the municipality's conditions, does the conditional candidature become definitive. By order of the government, the continuity of the participation process will be ensured not only with the selected municipality of Dessel but with the municipality of Mol as well.

The construction phase will take another 4 to 5 years including the period for bringing the installation into operation. The repository could thus become operational in 2016 at the earliest.

The operational stage, i.e. filling the repository, will take about thirty years and will be followed by the final covering and closure of the repository, and by a monitoring phase of a few hundred years.

The total cost of the pre-project phase (1998 – 2006) is approximately 20 MEUR₂₀₀₆, of whom 2,8 MEUR₂₀₀₆ for the working of the partnerships.

The cost estimation for the detailed studies varies between 65 and 85 MEUR₂₀₀₆.

The cost estimation for the disposal from the beginning of the construction to the end of the period of institutional control varies between 360 and 510 MEUR₂₀₀₆.

7. Lessons drawn so far

Co-decision making is a dynamic but time consuming process that requires a permanent dialogue on how to realise a project. Close interaction with local stakeholders is an absolute necessity. Maintaining the continuity of the approach is also vital. Mutual learning and understanding, respect, transparency, openness, ability to listen are key elements. The real question is not so much the acceptance but how integrating a repository project in the social and cultural context of a specific place.