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# Cowam In Practice

French National Stakeholder Group

**‘Prospective Case Study:  
French Report on the Cooperative Investigation’**



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## ***I. Background : a new legal context – a new governance approach***

The French National Stakeholder Group was established in the year 2007 in a brand new political and legal context as regards radioactive waste management, and the governance of nuclear activities, generally speaking.

Two major laws were voted by the French Parliament in June 2006<sup>1</sup>.

The ***Law of 13 June 2006 on transparency and security in the nuclear field***, known as the “TSN law”, constitutes an in-depth overhaul of the legislative framework applicable to nuclear activities and their supervision. It creates the Nuclear Safety Authority, an independent administrative authority in charge of supervising nuclear safety and radiation protection and responsible for informing the public on these subjects.

By giving them a legal basis, the law consolidates the local information committees (CLIs) which were set up over the years around the major nuclear installations, in application of a 1981 circular from the Prime Minister, to inform the citizens and to monitor the impact of important nuclear facilities. It endorses the involvement of the local authorities, particularly the General Councils, in their working. It gives them the right to create an association and maintains their funding. It lays the foundations for a CLI federation, to give a solid base for the national association of local information committees.

The law contains other provisions to strengthen transparency such as the creation of a High Committee for transparency and information on nuclear safety. The High Committee has been quite active from the first moment of its inception in June 2008, as it had to lead an inquiry on the radiation protection issues raised by the Tricastin incident in July 2008.

This law is the first comprehensive legal framework for the authorisation and management of nuclear activities. The only precedent law on nuclear affairs dated 1991, and consisted in a programming law on research activities in the field of radioactive waste management. Before the year 2006, nuclear activities were mainly regulated by way of decrees.

The ***Law on Sustainable Management of Nuclear Waste and Material*** was adopted by the Parliament on the 28<sup>th</sup> June 2006. Whereas the 1991 law provided a framework for research activities on high level waste (with three axes : deep disposal, storage, transmutation), the 2006 one extends to all possible radioactive waste and material, and gives a roadmap not only for research, but also for radioactive waste management in France, regardless of its activity level and its nature.

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<sup>1</sup> More information available on ASN annual report : <http://annual-report2006.asn.fr/>

Concerning reversible disposal in deep geological formations, the law specifies that this is the reference solution for management of high-level, long-lived radioactive waste. The aim is to open the repository in the vicinity of the Bure laboratory in 2025. To this end, this centre will be a basic nuclear installation and prior to the ANDRA's submission of an authorisation decree application in 2015, a public debate will be organised, with a law setting the reversibility conditions. Authorisation for final closure of the repository will also require a law to be passed.

The law creates a national plan for the management of radioactive materials and waste (PNGMDR). The purpose of this plan is to look for management solutions for all radioactive wastes, to ensure that the entire waste management system is consistent and to enable the wastes to be handled by the appropriate channels. This plan should be updated every 3 years by the Government and its requirements will be the subject of a decree.

These two laws reflect an evolution in the governance of nuclear activities which has been taking place in the last ten years. The first bill on nuclear safety and transparency actually dates back to 1998.

As regards nuclear waste management specifically, the scope of related issues has significantly broadened. As underlined above, the focus is no longer on high level waste alone. Other issues such as low level waste tend to become more visible "public affairs". Moreover, the CLIS has been renewed and its mission of oversight on the Bure laboratory activities is extended to a general mission of oversight, information and dialogue on all aspects of research in the field of radioactive waste management. In addition to CLIS, an increasing number of local commission come to get interested in waste management issues, which is notably illustrated by the creation of a permanent group on waste within ANCLI, the CLI federation.

## Actors involved in the NSG\*

- ANCLI, CLIS and CLI  
ANCLI is the National Association of Local Commissions in France. Chantal Rigal chairs the French NSG in behalf of ANCLI. The CLIS is the Local Committee operating for the Bure URL according to the 2006 Law on sustainable management of radioactive waste and material. Other Local Commissions are involved (CSPI La Hague, Blayais, Saclay, Saint-Laurent-des-Eaux). The operation of Local Commissions around nuclear facilities (other than Bure CLIS) and their National Association is framed by the 2006 Law on Nuclear Transparency and Safety.
- ANDRA  
ANDRA is the public agency entrusted with research and operation activities for all major nuclear waste in France. Its activities are framed by the 2006 Law on sustainable management of radioactive waste and material.
- ASN  
ASN is an independent administrative authority in charge of supervising nuclear safety and radiation protection and responsible for informing the public on these subjects. The mandate of ASN is set in the 2006 Law on Nuclear Transparency and Safety.
- CEPN  
CEPN is a non profit research organisation. Its first objective is to promote the protection of workers and the public against the health effects of ionizing radiation.
- EDA (NGO)  
Environnement et Développement Alternatif is an NGO based in North France and engaged in several projects towards sustainable development.
- EDF  
EDF is the major electricity producer in France.
- GIP Meuse  
GIP Meuse is responsible for economic support and development, in relation to the underground laboratory research in Bure, according to the 2006 Law on the sustainable management of radioactive waste and material.
- HCTISN  
In June 2008, the High Committee for Transparency and Information on Nuclear Safety (HCTISN) was set up as a result of the 2006 law on Transparency and Nuclear Safety. The committee informs, and supports dialogue on risks related to nuclear activities, and their impact on health, the environment and nuclear safety. Several participants of the French NSG are members of the HCTISN.
- IRSN  
The IRSN is the expert in research and specialised assessments into nuclear and radiological risk serving public authorities and the public at large.
- Member of Parliament (B. Pancher)  
B. Pancher is MP from the Meuse Département.
- Ministry of the Environment, Ecology, Sustainable Development and Planning (MEEDDM).  
The Department responsible for the Radioactive Waste Management policy was attached to the Ministry of the Industry until July 2008. From this date it shifted to the Ministry of Ecology, Environment, Sustainable Development and Planning (MEEDM).
- Mutadis as a facilitator

The full list of members is in annex 1.

\* NSG refers to the National Stakeholder group established in the five countries involved in CIP.

## ***II. Process and methodology***

This is in the context of these two recent laws - strengthening the regulation of nuclear activities, and framing the management of all types of nuclear waste – that CIP entered into operation. The moment was appropriate to discuss the implementation of this new framework.

### **II.1 Inception of the NSG**

Some months before the start of the project, and in the first weeks of 2007, the Chairperson of the French NSG and the National Facilitator contacted and met the prospective participants to inform them more in details about the objectives of the project at EU and French levels, introduce the Memorandum of Agreement which sets the rules for the NSG, and confirm their participation.

Most organisations had participated to the national meetings held once a year in the framework of the COWAM 2 project (2004-2006) and had particular expectations as regards CIP. The novelty was that so far COWAM was an European project based on multilateral cooperation at a transnational level. With COWAM in Practice, the European project turn into a European umbrella or shelter for national processes.

In this perspective a key issue was to determine to what extent French stakeholders would engage in a European project to meet with fellow countrymen. In the first contacts made by the NSG Chair and the National Facilitator with prospective participants, the answers given to this question were instructive to better characterize the use and relevance of EU-embedded national projects. As it was felt at the end of the Cowam 2 project, the European forums are essential to exchange experience, to identify good practices and make bench-marking. The implementation of these good practices doesn't derive merely from their being identified however. Even more, an improvement of the governance of RWM in a national context requests more than good will from decision-makers. As they were to enter the French group, several participants made it clear: we are interested in European good practices, we are however not interested in taking part in a European project just to learn these practices; we want the project to bring genuine added value, and practical results for the French context. "Not just research" or "More than mere research!" was a first expectation requested for the French group.

Since CIP started soon after the vote of the two laws on transparency and nuclear waste management, stakeholders considered that CIP could possibly bring a contribution by engaging a dialogue on some key issues connected to the implementation of these regulations.

French stakeholders emphasized that they appreciate Cowam as a European project able to provide a neutral umbrella for a national stakeholder dialogue. They insisted that the NSG meetings should not turn in a negotiation table. Rather the meetings were expected to grasp and analyse strategic issues – i.e. questions which are important in the current

agenda of RWM governance in France -, the NSG forum to provide opportunities for a direct and genuine dialogue, which enhances collective learning, and does not constrain participants into political positions.

Thus, the framework of the French NSG was built with the participants before and validated at the group's first meeting, on the principle of a neutral space, comprising a plurality of actors, led by a facilitator, guarantor of debate. It was agreed at the first meeting that the group intends to discuss issues important to the governance of nuclear waste in France, and should make progress in this area while staying away from the decision process.

### **NSG Leadership**

The National Stakeholder Group is chaired by Mrs Chantal Rigal, ANCLI. The ANCLI responded positively to the proposal of CIP coordinator to chair the French group. This position was discussed and agreed by the Board of the ANCLI in 2006. The engagement of the national association in building dialogue is part of the mission of the local commissions it represents. The association has a double role : to support and facilitate exchanges of experience and views between local commissions, and establish common positions at national level on the one hand, and develop a dialogue with decision-makers (operators, ministries, Parliament, safety authority) at national level on the other hand.

The involvement of ANCLI in the field of radioactive waste management is not new either. The association engaged in the national debate on nuclear waste management in late 2005, and released a white paper on the governance of radioactive waste and material in the year 2006 to promote local commissions' views during the discussion of the relative bill in Parliament. Since then, the association has set up a special and standing group on radioactive waste and material. This group follows and investigates topical issues in radioactive waste management. The group is led by Mrs Chantal Rigal.

ANCLI capacity to structure the voice of local actors and to establish a dialogue with national institutions was essential to run the French NSG and put the discussions into the tracks of a fair dialogue.

## II.2 What underlies the stakeholder research request

In the **first NSG meeting on June 28, 2007**, the results of the COWAM 2 project were presented to the participants. This was followed by an introduction to and discussion of CIP objectives, programme, methodology and rules.

The Methodological Task Force<sup>2</sup> then presented the research topics proposed in CIP under three themes :

- sustainable governance of long term issues
- structuration of local communities
- legal and institutional frameworks

After the presentation of each theme, participants expressed their interest in turn, having in mind the current issues and challenges for the French context. As a result of these expressions and discussions, four subjects of investigation corresponding to topical questions for the French participants were identified. These all bear on questions which are on the agenda as a result of the 2006 laws on nuclear safety and transparency, and on nuclear waste management :

1. Governance dimensions of the practical implementation of the concept of reversibility for a deep geological disposal: technical, social, political and economic stakes;

*The 2006 law on sustainable radioactive waste management refers to the concept of reversible disposal, but leaves open the detailed definition of reversibility for a vote in Parliament in 2015. There was a common interest from participants to share views on this concept with a view to move from conceptual design to the investigation of the practical conditions for reversibility to exist.*

2. Processes for identifying, selecting and accompanying a site for the management of radium-bearing and graphite waste;

*The 2006 Law provides for the selection of a site on which a storage facility for radium-bearing and graphite waste may be installed within 5 years. European experience – whatever the type of waste considered is – has strongly developed during the last 10 years, with the experimentation of new approaches for site selection (UK, Slovenia ...). In France, one can also notice innovation in the field of chemical waste (e.g. the existence of an innovative participatory process for the implementation of a storage facility for class 1 industrial waste in the Midi-Pyrenees region). The CIP group made a return on different experiences in order to draw out the good practices that could be relevant for the French case in current and future radioactive waste management projects.*

3. Modalities of integration between local and national governance levels, including the contribution of current national dialogue processes;

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<sup>2</sup> The Methodological task Force refers to the team of experts who support the National Stakeholder Groups to investigate the issues these groups have considered as important to them.

*Several mechanisms that contribute to establish dialogue between national and local actors concerning radioactive waste management were recently introduced in France in the perspective of or as a result of the 2006 law, namely: technical working group on the National Plan for the Management of Radioactive waste and materials (PNGMDR), the High Committee for Transparency, National Permanent Pluralistic Commission of the French National Association of Local Committees (ANCLI)... They aim to favour integration between national policy objectives and local objectives. How do these mechanisms contribute, on the one hand, to discuss the issues of governance that arise in the field of radioactive waste management and, on the other hand, to effectively integrate local and national views and perspectives?*

4. Economic development of territories as a condition of vigilance in long-term management of radioactive waste.

*On the basis of a return of experience from European countries, COWAM 2 stressed the importance of the sustainable local development as a contribution to uphold on the long term the capacity of vigilance about the site. In the French NSG a return on foreign experience was deemed useful to consider which lessons could be learnt for the HLW repository in Bure, as well as projects expected to stem from the PNGMDR. This reflection was carried out in close connection with theme 2.*

The report of this first NSG meeting with the research proposals was sent in July 2007 to participants who were invited to confirm or complement these propositions within a month and a half. Slight tweaks were made, mostly on the form. The full research programme is provided in annex 2.

As a whole, the French NSG met five times over the period 2007-2009, in plenary sessions.

The following three chapters present the methodology and main results of the cooperative research carried out on three main issues :

- ↳ Governance dimensions of the practical implementation of the concept of reversibility for a deep geological disposal: technical, social, political and economic stakes;
- ↳ Processes for identifying, selecting and accompanying a site for the management of radium-bearing and graphite waste;
- ↳ Modalities of integration between local and national governance levels, including the contribution of current national dialogue processes;

The first issue was the main matter for investigation for the NSG in the three years of research and discussions. Hence, the related chapter is more developed than the two others.

### **III. Cooperative Investigation on Reversibility**

The new context of the 2006 law created a radical new situation for the reflections on reversibility. While the discussions over the last 20 years have balanced the advantage of reversibility and irreversibility, the 2006 law gives reality to a reversible disposal and implies that decision-makers have to face this reality, and put into practice a concept which remained so far quite abstract. Thus, the French group expressed an interest to investigate the practical conditions and dimensions of reversibility, in other words *reversibility in practice*.

Another key feature for the reflections is that the NSG brings together the main categories of stakeholders, including local actors. The NSG acknowledged that reversibility is a public matter, even more it is a means to ensure that the governance of nuclear waste management remains a public matter and that decisions made are framed and supported at national and at local levels. Given its composition, the NSG provided a relevant arena to address these issues.

#### **III.1 Reversibility in the French context in 2007**

##### **The 2006 Law on the sustainable management of radioactive waste and material: preparing the practical implementation of reversibility**

The reversibility is included in the 2006 Law on the sustainable management of radioactive materials and waste as follows: “The disposal of radioactive waste deep underground is the disposal of these substances in a facility specially equipped for this purpose, in compliance the principle of reversibility.”(Article 5); “The Government presents a bill establishing the conditions for reversibility. After enactment of this law, permission to establish the center may be issued by government decree passed in the Council of State, after public inquiry. (...) The authorization sets the minimum period during which, as a precaution, the reversibility of disposal must be ensured. This period may not be less than a hundred years.” (Article 12)

##### **Reversible disposal – key facts and schedule**

- ↪ The reversible disposal is intended for high-level waste (spent fuel).
- ↪ ANDRA will make a technical proposal for a reversible disposal by the year 2012.
- ↪ A public debate will engage following that, presumably in 2013.
- ↪ The Parliament is expected to issue a law on reversibility in 2015.
- ↪ On this basis the site will be authorized by a State decree. The authorisation sets the minimum time during which, as a precautionary measure, disposal must be reversible. This period cannot be less than one hundred years. The site would open in 2025.

### **The position of Bure Local Committee of Information and Oversight (CLIS) - 2006**

The question of reversibility was raised in Meuse and Haute-Marne in 1993 when the project of underground research laboratory was presented to the department council. At the end of the deliberation between the councillors of the Meuse, an agreement was reached for research to be performed in the department and for municipalities to be candidates to host the laboratory, *provided that* the disposal is reversible. At the time, reversibility was primarily understood as packages retrievability.

In 1998, the National Commission which follows Andra's work and establishes an annual evaluation report, published a complementary report on reversibility, as requested by the Government. In 1999, after public inquiry, the Government allowed Andra, by decree, to build an underground research laboratory in Bure, to study the feasibility of a reversible disposal. A second decree founded the same year the "Comité Local d'Information et de Suivi" (Committee for local information and monitoring) of the Bure laboratory. According to the 1991 law, the CLIS must be informed of the research program's objectives, the nature of work and achievements. It must be consulted on all issues related to the laboratory's operation affecting the environment and neighbourhood. It can hold hearings or counter-expertise by accredited laboratories.

The CLIS contributed to the debate on reversibility in 2001 by organizing a symposium entitled "Reversibility and its limits", alternating technical presentations from institutional and non-institutional experts, and presentations about socio-political aspects. The symposium underscored the evolution of the reversibility concept. To the concept of "retrievability" mentioned in the early 1990s, was added the concept of "reversible process." While reversibility was associated with retrieving packages, for one reason or another, and putting them elsewhere, this concept has exceeded the purely technical aspects to include the decision-making process. It is no longer simply question to remove the waste, but also to redirect a decision concerning them.

On the 28<sup>th</sup> of June 2006, the law on sustainable management of radioactive waste and material was adopted by the Parliament. It states that research should be pursued in the laboratory of Bure, to achieve the objectives of the program defined by the specifications annexed to the 03/08/99 decree, authorizing ANDRA to install and operate the laboratory. Before the formal renewal of permission to conduct research in the laboratory, CLIS adopted an opinion on this extension (opinion of 12 October 2006).

In this view, the CLIS puts forward its members' point of view on reversibility:

**The CLIS hopes that a particular attention will be paid to research on reversibility (definition of the term, the starting point of which must be the end date of operation of a possible disposal and not the date of its authorization, methods and techniques for monitoring the disposal during operation and after closure) and the demonstration of the absence of special or exceptional geothermal resources in the area of Bure.**

### **III.2 The research demand of the French NSG on reversibility**

The discussions on June 28, 2007, framed the issues of reversibility for the French NSG as “Governance dimensions of the practical implementation of the concept of reversibility for a deep geological disposal: technical, social, political and economic stakes”.

“In accordance with the perspective adopted by COWAM, this theme of reversibility will be addressed taking into account the concrete point of view of the various stakeholders, notably local ones. Research within this theme should thus contribute to analyse and discuss the way existing or considered mechanisms for practical implementation of the concept of reversibility for deep geological disposals are embodied within a process of long term governance (decision process and criteria, financial mechanisms ...), as well as the constraints or potentialities that are associated with such mechanisms.

The following topics may be investigated:

- Sharing an appraisal of the technical mechanisms for reversibility currently considered in the French context
- Examining the expectations and objectives concerning reversibility in the context of the 2006 Law: reversibility, for which purpose? CIP may study the history of the notion in France, examine the return of experience from abroad, identify and discuss the expectations of the various stakeholders regarding reversibility.
- Discussing scenarios for the conditions of implementation (in terms of governance) of reversibility depending on the different technical mechanisms existing or considered.
- Discussing the particular role of expertise in the issues concerning reversibility: how can expertise on this question can be built and shared in order to favour a shared evaluation of the technical mechanisms between the various stakeholders?
- Discussing the articulation between the notion of reversibility and the ones of vigilance and governance of the long term.”

### **III.3 Methodology of cooperative research on practical reversibility**

In June 2007 the NSG established the need to carry out a reflection on reversibility. In this session, the discussion with the various stakeholders made a first characterization of the questions to be addressed (see previous section III.2 above).

In the second session this work of characterization was continued with detailed information on the regulatory framework, the current development of the expertise, synthesis of international reflections, and arguments made in the 2005 public debate in France on this issue. This information was provided by different participants (regulator, operator, expert, local commission...) and discussed in the group. The discussion concluded with :

- orientations for the conduct of the cooperative research
- a perception that in order to meet CIP terms of reference a wider local input was needed.

On the basis of the NSG discussions, the MTF prepared further material and questions to be discussed with NSG stakeholders. The National Facilitator organized two local meetings in Bar le Duc and La Hague to get the views of local actors on the reversibility questions pointed out in the NSG. These local meetings also made an additional input with a return of experience of the CSM disposal in la Manche.

These different elements were reported and discussed in the third NSG meeting. Another opportunity of discussion was given to local stakeholders in an Inter-territorial meeting organised for Meuse and la Manche participants, in September 2008.

In the NSG 4 meeting, the MTF and the NF presented the consolidated results of the NSG and local meetings. These results were further discussed. The full results of this investigation are available in a research brief (available on Cowam web site). The final conclusions are reported here (as an extract in section III.4).

The contribution of the NSG discussions cover the following aspects:

- Frame the issue
- Discuss the research hypothesis
- Voice the point of view of the different stakeholders
- Organise exchanges between them
- Shape a common understanding, identify relevant common issues
- Integrate and draw perspectives

In a close cooperation the MTF experts and the NF traced the discussions in the NSG and local meetings, prepared a research hypothesis and corresponding material, and structured the conclusions of the dialogue. The MTF carried out some interviews to inform on specific perspectives (expertise, funding...).

The discussions in Bure, La Hague and the subsequent inter-territorial meeting were essential to support local stakeholders in making their input and build their own views (see section III-5).

#### **III.4 Main conclusions of the cooperative research on practical reversibility (*Extract from the Research Brief*)**

The research group's investigations were carried out by drawing firstly on the results of the European COWAM 2 project [28] relative to taking account of monitoring in the long-term and maintaining it and, secondly, on interviews with the members of the French CIP Group and local players [3]

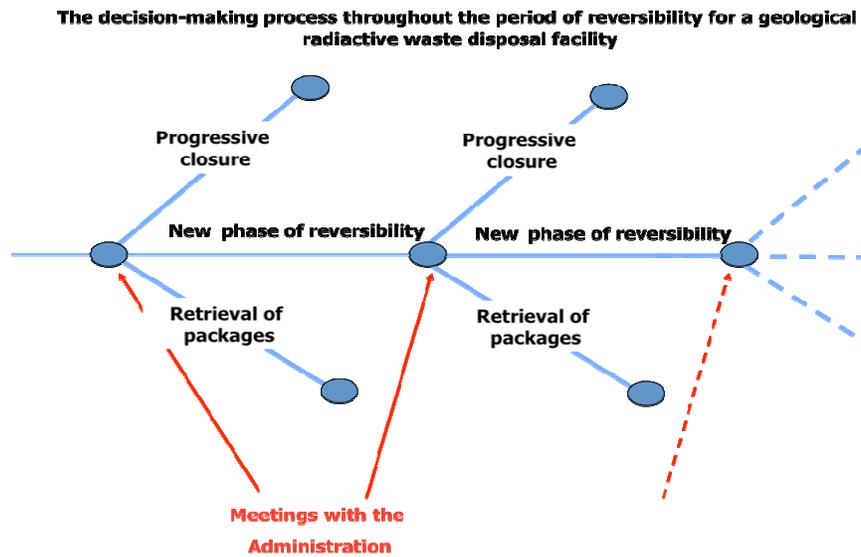
These investigations have revealed elements in the decision-making and assessment processes related to the practical implementation of reversibility, focusing more particularly on the role and the expectations of local actors in this context.

##### ***Proposed framework for studying governance procedures for reversibility***

In light of developments in studies of the notion of reversibility in the design of geological disposal facilities for radioactive waste, at the international level and in France, it is now acknowledged that introducing a period of reversibility will allow for flexibility in the decision-making process and leave the options open for future generations.

In France, reversibility is now included in the Planning Act of 28 June 2006. The key study needed is not, therefore, on the justification for adopting reversibility but rather to investigate the practical procedures for its implementation, in technical terms as well as in terms of the related social, economic and political, etc. aspects.

From a practical point of view, the aim of maintaining a period of reversibility is to be able to choose, throughout this entire period, between three major options: continue to maintain reversibility, retrieve packages or initiate the closure of all or part of the disposal facility. These options would be, for example, discussed at meetings with the Administration. The issue of decision-making criteria for choosing which option to implement is not currently discussed. It will be down to the future generations affected by these decisions to draw up their own decision-making criteria in view of the context in the future.



**Figure 1. Illustration of the decision-making process throughout the period of reversibility for a geological radioactive waste disposal facility**

The issue of the practical implementation of reversibility requires looking more specifically at the decision-making and assessment process, which implies undertaking studies focusing on:

- Governance, in terms of decision-making and responsibilities
- Maintaining monitoring and vigilance throughout the period of reversibility
- Developing citizen competence and sharing expertise
- Keeping the memory alive and passing it down through successive generations
- The means of financing the waste management system and reversibility

***Decision-making process and responsibilities throughout the period of reversibility***

Given that the period of reversibility is seen as a period during which three options must be kept open - maintain reversibility, retrieve waste packages or (progressively) close the facility - it is essential to **determine the structure of the decision-making process associated with these options**: Who will be involved in assessing the situation? Who will make the decision? How often will the situation be reviewed? etc.

**Role of local stakeholders**

From local discussions, it appears that there is **strong demand on the part of local actors to be involved in the decision-making process**, not to take the decision themselves but to **be involved in assessing** the disposal facility and ensuring that their expectations, especially insofar as their concern decision-making criteria, are effectively taken into account.

The ways in which local actors will be involved still need to be defined. Reference has often been made to the need to network local actors together to ensure they are adequately represented. Local networking in the form of local liaison committees (CLIs, or *Commissions Locales d'Information*) or national networking would most likely fulfil this objective. **However they are involved, for this to be effective and sustainable will depend on the influence that the local actors can really exert on the final decisions taken at national level.**

**The involvement of local actors in actually drawing up the assessment and decision-making processes** will also serve to make it more effective and, thereby, make the decisions taken more sustainable.

#### **Integrating long-term dimensions**

Since the period of reversibility extends across the medium or the long term (remember that a period of at least 100 years is currently planned in France), it is important to **examine the capability of maintaining regular debate over the future of the disposal facility over time.**

The COWAM 2 project [28] has shown that the involvement of one (or more) international institution(s) would be likely to promote sustainability by acting as a relay in the event of a loss of vigilance at national or local level, or during periods of social change. It is therefore necessary to **examine the possibility of involving the international level in to the assessment and decision-making processes** relative to the practical implementation of reversibility.

The issue of the long term also raises the **question of how new developments in standards should be taken into account** (safety standards, radiological protection standards, environmental protection, etc.) and **how to ensure the capacity of technical and organisational systems** to adapt to such developments. Organising **regular meetings**, within the framework of the decision-making process related to reversibility, to decide between the options for the future of the disposal facility **serves to highlight this question and favours implementation of the resulting actions** (e.g.: renewing equipment inside the disposal facility in line with new regulations and new techniques, etc.).

#### **Viewpoints of some of the actors regarding the decision-making process**

##### **Taking local actors' expectations into account**

*Even though they have been provided with opportunities for discussion, many local actors deplore the fact that their expectations are ultimately accorded little weight in the decisions taken at national level relative to radioactive waste management in their local areas.*

### Regular meeting points

*On this subject, the IRSN noted that, at the moment, meetings between the operator and the administration are scheduled to take place every 10 years to review the safety reports.*

### Institution in charge of the decision to close the disposal facility

*The ASN's view is that final closure of the facility will no doubt be voted on by Parliament.*

### Credibility of the option to retrieve packages

*Many people asked about the possible retrieval of waste packages. It would be useful to consider this possibility now, by examining the alternative techniques and funding mechanisms required to implement this option, especially since retrieving waste packages is not, for the time being, provided for in the requirements for radioactive waste producers.*

### Period of reversibility

*The Act of June 28, 2006 indicates that the duration of reversibility cannot be less than one hundred years without specifying the period covered by this term. Andra proposes that the definition of the period of reversibility extends from the first package put into disposal until the closure of surface-bottom channels. This step marks the beginning of closure of the phase of institutional control of the site and would be permitted by a specific law. Technical solutions currently studied lead to consider for each disposal cell, a period of reversibility of at least a hundred years from its commissioning. The terms of reversibility, in particular its duration, will be reassessed regularly, relying on data provided by the observation and monitoring of the disposal.*

## **Monitoring and vigilance**

The monitoring plan associated with a reversible disposal facility includes specific aspects, such as:

- maintaining a capacity of choice
- the health and environmental impacts
- the inventory of the contents of the disposal facility
- etc.

The continuity and durability of such monitoring in the long term cannot be guaranteed nor decreed. This means that we need to examine how to create the conditions to foster the preservation of such vigilance (at local, national and international level), as well as its transfer down through the generations.

### Maintaining a capacity of choice

To ensure that the ability to choose between the three main options is maintained over the course of time, an adequate "surveillance programme" needs to be established. Setting up such a surveillance system is based on the involvement of the local stakeholders in the **definition and the follow up of meaningful indicators for assessing the three options** that, in particular, make it possible to **assess the evolution of the waste packages and engineering structures**, to **assess the capacity to retrieve any or all of the packages**, to **evaluate the associated radiological**

**impact** (on workers, on the public and on the environment), etc. This joint surveillance programme could improve the confidence of the local stakeholders in the assumptions used in the safety analyses and to reduce the uncertainties in the assessment.

### **Following-up the environmental and health impacts**

The discussions held with the various actors reveal a demand for special monitoring of the disposal facility's impact on human health and the environment. Again, to ensure this, stakeholders should be involved in the elaboration of meaningful, relevant, indicators.

**The component parts of this type of surveillance programme could be developed**, in conjunction with local actors, **by defining a reference point and by drawing on existing feedback** on environmental and health monitoring, and, in particular, on:

- studies carried out by the Nord Cotentin Radioecological Group (GRNC), initially formed to assess the risk of leukaemia caused by radiation from the nuclear facilities in the region, and which is pursuing its work in assessing the environmental and health impact of chemical substances [29-30] ,
- cancer register set up by the Local Liaison Committee for the Gard,
- the experience of the British COMARE committee (Committee on Medical Aspects of Radiation in the Environment), initially set up in 1986 [31] to carry out epidemiological studies on the risk of leukaemia for people living in the vicinity of Sellafield, and which is now pursuing a more general assessment of the effects on health related to ionising radiation, while carrying out specific investigations into the risk of child cancer in the vicinity of nuclear plants in Great Britain [32] .

### **Following-up the waste inventory**

A **special tracking system** involving the local stakeholders **must be set up to follow-up** the contents of the disposal facility, throughout the entire operational phase and subsequently **maintaining this knowledge in the long term, ensuring that it is passed on to future generations**. The issue of keeping an inventory of all radioactive waste contained in the disposal facility is raised at various levels, including:

- From an ethical point of view, ensuring that the memory of the inventory is kept alive over the course of time is seen as a duty of today's generation toward future generations, who have a right to know of the legacy we have left them;
- From the technical point of view, keeping the option of retrieving packages open makes it even more essential to know exactly what the facility contains;
- With regard to risk management, it is essential to know exactly what the contents of the disposal facility are in order to be able to assess, over time, the potential impact on health and the environment related to the facility.

**Inventory monitoring indicators** must cover **not only the radiological contents of packages**, but also include data on the potential presence of **chemicals, package design**, how they are positioned in the facility, etc. Also, to **increase confidence in the inventory** drawn up, many actors feel it is necessary that **this inventory is checked by a pluralistic body (or bodies)**, in other words, by a body that includes not only the producers of radioactive waste and the disposal facility operator, but also representatives of other institutional and non-institutional actors (safety

authorities, the IRSN, associations and local actors, etc.). Lastly, in order to improve the pertinence of the indicators defined and to identify the factors involved in maintaining and transmitting the inventory over the course of time, it is essential to learn lessons from past experiences in waste disposal (radioactive or chemical waste)<sup>3</sup>.

### **Involvement of local actors**

The period of reversibility is most suitable for close monitoring of the packages, structures and the environment. This period is of **particular interest for local actors** insofar as it can be used to **set up a monitoring and vigilance system that will help improve confidence in the safety scenarios or to clear up any doubts and uncertainties.**

The best way to satisfy this need, make use of the meaningful indicators and encourage the results to be taken on board, is that the **monitoring plan and all the various surveillance indicators be developed in conjunction** with all the different actors (local actors, operators, industrialists, institutions and associations, etc.).

### **Points of view expressed by some actors regarding surveillance and vigilance**

#### The opportunity afforded by reversibility

*Reversibility is seen by local actors as an opportunity worth seizing to plan monitoring, tracking and safety at the facility more effectively.*

#### Circulating the results of monitoring

*The High Commission for Transparency and Information on Nuclear Safety (HCTISN) recommends that the operators of former radioactive waste storage sites should regularly present the inventory of all substances stored at the site to the CLIs, together with the results of monitoring their impact on the environment, the measures taken to reduce their impact and the relevant schedules, as well as holding discussions between the stakeholders on issues related to such sites [33].*

#### Inventory of the disposal facility contents

*Some local actors in Nord Cotentin highlighted uncertainties surrounding the contents of the low level waste disposal facility of Manche (CSM): some waste is recorded properly whereas absolutely nothing is known about other waste, which usually dates from the time that the facility started operating.*

*Members of voluntary associations believe that, in the case of the Bure disposal facility, it will be necessary to define in precise detail the kinds of packages emplaced there, in what proportion, what they contain and what their volume is.*

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<sup>3</sup> In particular, the following experiences were mentioned at the local meetings: radioactive waste disposal in Asse, Germany, the Manche disposal facility and the low and intermediate level waste disposal facility in Aube, in France or in Habog in the Netherlands, together with the chemical waste disposal facility in France (Stocamine).

## ***Keeping the memory alive and passing it down through successive generations***

The issue of keeping the memory of the facility alive and passing it down through future generations is a key factor in managing the reversible disposal facility in the long term.

### **Transmission of the memory in the perspective of vigilance**

A **distinction has to be made between "passive" memory and "active" memory**. The passive memory is made up of all the archived documents that can be used to track the history of the disposal facility, its design and contents, and the results of environmental monitoring, etc. **The durability of the passive memory depends mainly on information redundancy and the location of the archives.**

Nonetheless, this memory is only useful for maintaining vigilance around the facility if it is regularly brought to the attention of the public over the course of successive generations. Thus, it is essential to **establish mechanisms, or systems, that encourage the development of an active memory of the facility and its registration in the various records kept by the community as the years pass** (regularly updated archives, registration in land registers, etc.).

One factor in keeping the active memory alive is to **sustain economic and social life in the vicinity of the waste facility** since stable local and regional demographics plays a key role in ensuring sustained monitoring. To this end, **the task of monitoring the facility should be integrated into a general sustainable social and economic development plan for the area**. For example, the development of business activities related to monitoring and inspecting the environment needs to be examined, interrelated with the development of scientific and technological skills at the local and national level.

It is also necessary to examine **ways in which information is passed down to future generations so that they can understand the memory they have inherited**. This implies ensuring that the information passed down makes sense and is of value to successive generations.

### **Sustainability of "institutions"**

Maintaining vigilance in the long term raises the **issue of how sustainable the institutions in charge of the vigilance processes may be**. Studies have been carried out on the systems designed to prevent, as far as possible, a disposal facility from being abandoned and to ensure that it is taken under control in the event of any failure on the part of local or national "institutions" following, for example, a crisis situation (economic crisis or war, etc.)[34]. These studies reveal a **need to develop the vigilance at different levels, i.e. local, national and even international, and to create a network of actors participating in the surveillance.**

## **Points of view expressed by some actors regarding keeping the memory alive**

### **Sustaining economic and social life**

*One of the major concerns expressed by local actors regarding the Bure laboratory lies in maintaining stability in local and regional demographic figures. The areas surrounding the*

*laboratory are not at all densely populated and the population in the "counties" of Meuse and the Haute-Marne is consistently decreasing and ageing. Sustainable social and economic development plans therefore need to be implemented, to encourage young people to remain in these areas.*

## ***Financial aspects***

### **Funding the reversibility**

The ability of future generations to maintain a capacity of choice between the options throughout the period of reversibility will mainly depend on the available financial resources. **An adequate financial mechanism should be set up to cover the surveillance and maintenance of the facility keeping the options opened, the packages retrievable and potentially the development of alternative options.**

Given the length of the periods involved, such systems need to include **periodic estimation of the various costs involved, resulting, if necessary, in a re-assessment of the sums set aside.** Taking the long-term view also raises the issue of **maintaining the financing capability** and the possibility of **changes in who bears the financial responsibility** over the years i.e. identify who has to support the different expenses at each stage.

To improve vigilance at local, national and international level, **mechanisms designed to ensure transparency with regard to the financing systems and cost assessments** need to be developed hand-in-hand with, for example, the organisation of regular meetings with the various actors at which these different factors can be presented and discussed.

### **Financing vigilance undertaken by local actors and expertise**

To fulfil their vigilance tasks effectively, **local actors must have adequate financial means** to be able to carry out specific actions related to such vigilance. This mainly means being able, **if necessary, to call on pluralistic expertise** to examine the different issues raised in the course of the decision-making process related to reversibility.

## ***Citizen competence and expertise***

With a view to playing an active role in the decision-making process related to reversibility and fulfilling their task of ensuring vigilance, **it is essential for local actors to have the competence required to be able to express their expectations and concerns on the reversibility process not only concerning technical issues but also concerning governance issues.**

**Improving local actors' levels of competence depends on them having access to "training"** in the different aspects related to the management of a reversible waste disposal facility, covering the technical and other aspects (ethical, legal and financial, etc.) involved in assessing the management system.

**Local actors' competence may also be developed by calling on the expertise of the public authorities as well as other sources of expertise from different types and origins.** It is therefore important to provide them with the possibility of calling on pluralistic expertise at all the different stages in the decision-making process related to reversible radioactive waste disposal.

In addition, given the specific timescales related to radioactive waste disposal, it is essential to look into **mechanisms for sustaining such competence over time and for handing it down through future generations.**

### *Viewpoints of some actors with regard to competence*

#### *Improving citizens' competence*

*In general, the local actors we met in the course of this study spoke of the difficulties they have encountered in trying to gain access to the level of knowledge they require to play an active role in monitoring disposal facilities. While they want to be involved in the monitoring system, they stress the need to maintain other sources of expertise to ensure control over the potential risks related to radioactive waste disposal facilities.*

#### *Sustained competence*

*According to the IRSN, the real challenge involved in reversibility lies in ensuring that knowledge is transmitted over the long-term, i.e. that professional expertise and organisational control over the radioactive waste management system are maintained.*

### **The CSM return of experience**

The CSM, with more than 527 000 cubic meters of radioactive waste stored between 1969 and 1994, is the first and most important European disposal of radioactive waste.

In October-November 1995, a public inquiry was held on the shift of CSM from operation to monitoring phase. In view of the many issues and questions raised by this transition, on 22 December 1995, the Minister of Environment announced the creation of a commission of experts named after its president, the *Turpin Commission*, with the task to make a thorough evaluation of CSM. The public inquiry commission, *Pronost Commission*, delivered its report on 5 February 1996 and gave a favorable opinion. Nevertheless, the government decided to wait for the outcome of the *Turpin Commission* before authorizing the work.

In addition, since the late 1980s, a local NGO, *ACRO*, has been performing environmental monitoring around the CSM. In May 2006, the association issued a report on "lessons from the La Manche Disposal."

While dealing specifically with the CSM, which has its own history, the reports of the *Turpin Commission* and *ACRO* bring to light a number of interesting features that support a better understanding of the practical issues of reversibility for a disposal. CSM itself was not designed as a reversible facility. But it raises questions about the management of the waste inventory, the memory of what is stored/disposed, the monitoring of the installation, the adjustment to evolving standards and the role played by local actors. All these questions are relevant to any facility with a dimension of reversibility.

**This return of experience is presented in annex 3**

### **III.5 Position paper by ANCLI**

The exchanges and discussions on reversibility developed by the pluralistic group *Cowam In Practice France* have helped to build a common understanding of issues and questions associated with this concept. The ANCLI requested CIP to expand the contribution of local actors and to organize two regional meetings in May-June 2008 (Bar-le-Duc, Flottemanville-Hague) and an inter-regional meeting in September 2008. These sessions have enriched the reflection of the French group providing feedback on two elements: the reflections of CLIS in terms of reversibility, the feedback of the operation of the CSM. On this basis, the territories of the Hague and Meuse Haute-Marne have also identified a number of proposals which they made known in a position paper.

Local actors are doubly concerned by reversibility.

☞ *By their statutory mission, Local Commissions and Committees have a role of vigilance and will be able to look after reversibility, i.e. maintaining a capacity of choice between:*

- 1. continuation of a reversible disposal,*
- 2. withdrawal of packages and*
- 3. closure of disposal.*

*This monitoring concerns as much technical aspects, as the legal, financial and decision-making dimensions associated with reversibility.*

✎ *On the other hand, the local actors raised the question of preparing the governance of reversibility within the 5 to the 8 coming years. What procedure to prepare this device? What contribution of citizens? How will this be taken into account in the decisions?*

The full position paper is in annex 4.

## ***IV. Cooperative Investigation on Processes for identifying, selecting and accompanying a site for the management of radium-bearing and graphite waste: main results***

### **IV.1 Context in 2007**

The 2006 Law on the sustainable management of radioactive waste and material provides for the selection of a site on which a storage facility for radium-bearing and graphite waste may be installed within 5 years. Thus the process for identifying, selecting and accompanying a nuclear waste management site becomes a topical issue.

#### **Disposal solutions for graphite wastes and radium-containing wastes – key facts and schedule**

- ↪ The Law of June 28th, 2006 on the sustainable management of radioactive wastes and materials entrusted Andra with the mission to conduct research and studies, with the goal "to develop disposal solutions for graphite and radium-bearing waste, so that the corresponding disposal center can be commissioned in 2013".
- ↪ The PNGMDR requests a site location for low level long-lived waste disposal. It specifies that the disposal center is to be studied and designed to receive waste from radium-bearing and graphite waste but asks Andra to explore the possibility of taking care of other long-lived low-level waste (such as certain objects containing radium, uranium and thorium or spent sealed sources).
- ↪ On June 2, 2008, taking into account the need for a less constrained schedule, the Department of Ecology, Energy, Sustainable Development and Planning (MEEDDAT) requested Andra "to proceed without delay with the search for suitable sites for a new central waste storage LLRW to ensure the commissioning in 2019".
- ↪ The research site for disposal began in June 2008. 3115 mayors have received an information package on the project and were invited to express their interest before October 31, 2008.
- ↪ On June 24, 2009, Andra has announced the Government's decision to conduct thorough investigations on two communes of Aube and verify the feasibility of implementing a shallow disposal for long-lived Low-Level Radioactive waste (FA-VL). In Summer 2009, the two municipalities used their right of withdrawal.

## IV.2 Research demand by the NSG

European experience – whatever the type of waste considered is – has strongly developed during the last 10 years, with the experimentation of new approaches for site selection (UK, Slovenia ...). In France, one can also notice innovation in the field of chemical waste (e.g. the existence of an innovative participatory process for the implementation of a disposal facility for class 1 industrial waste in the Midi-Pyrenees region). The CIP group could analyse these different experiences in order to draw out the good practices that are relevant for the French case.

Among the modes of governance associated with the process of identification and selection of a site, the following points were proposed for analysis:

- The role of the various local and national actors in the selection process
- The development and sharing of expertise concerning radium-bearing waste management
- The inclusion of local actors in the process of defining and implementing the national decision framework (selection criteria, decision steps, right to withdraw, definition of management options ...)
- The elaboration of conditions of candidature for municipalities
- The development of a sustainable development project for the territory that is articulated with the activity of managing radium-bearing waste on the long term.

## IV.3 Methodology

In the NSG 2 meeting, several presentations were made to characterize the situation as regards the management of low level long lived waste.

First, a CLI president explained the difficulties faced to set up sustainable conditions for managing irradiated graphite waste from an old nuclear power plant. The CLI is making oversight of a facility where waste is being stored for 20 years now. The storage on site does not appear as a long term solution because of flooding risks. There is no other solution available so far, pending the identification of a national management site for all graphite waste.

The Minister presented the provisions given in the National Plan for Managing Radioactive Waste and Material (PNGMDR) for graphite and radium-bearing waste. ANDRA presented the technical project for a national site for graphite and radium-bearing waste, according to the PNGMDR directions (see box o, page 30).

The presentations on the French situation as regards the management of radium-bearing and graphite waste stressed that there are short deadlines to find a site for this type of waste. This

schedule is prompted by the need to develop quickly a safe and reliable trend of management for these types of waste, especially graphite waste, some of which are currently temporarily stored close to nuclear power plants. Moreover the existence of a disposal for radium-bearing waste is a necessary condition for the further continuation of the deconstruction of nuclear power plants.

The technical requirements for this type of disposal are less restrictive than that of high level waste. In this respect, the site selection process is less dependent on technical and scientific aspects.

At the end of this first meeting, several questions were pointed out of potential interest for the French group:

- The local participants underlined the constraints created by the schedule assigned to the process by public authorities. They expressed scepticism about the feasibility of the process, notably in comparison with international experience
- there is an interest to look at the different approaches to site selection processes experienced in Europe. The French group could look at the lessons learnt, the advantages and drawbacks of these different approaches and point out which elements are of potential relevance in the French context
- among European experiences, there is a strong interest to have a more developed and detailed presentation of the Belgian partnerships. These partnerships relate to low level waste like the French graphite and radium bearing waste. They have a specific experience of participatory socio-technical design : the facility was defined on the basis of the operator's proposal and the local communities expectations, as regards safety, radiation protection, and local development opportunities
- the British experience appears also of strong value. The dialogue with stakeholders engaged by the CORWM committee led to a distinction between two types of packages to support communities involved in a site selection process. The engagement package covers the resources necessary for the community to get involved in the site selection process, and in the dialogue with the implementer and decision-makers. The second – benefit package – relates to the more traditional aspects of compensation, once the community is selected.
- Finally the graphite and radium bearing waste are long lived waste. Their management implies a 20 years period of operation for the site, followed by a period of surveillance of several decades. The organisation of surveillance, and the participation of local communities in these aspects are of interest to the French group.

To address these questions, several case studies were presented and discussed in the NSG in the course of three meetings (NSG 2, 3 and 4).

- Belgian partnerships : co-construction of a technical and socio-economical option , by G. Meskens (SCK.CEN)
- The notion of affected communities from a British perspective, by R. Wylie and S. Haraldsen (Westlakes Scientific Consulting), completed with background information on the *Managing Radioactive Waste Safely* policy in UK, by C. Mays (Symlog)
- ORDIMIP, a regional dialogue for ultimate waste siting in France, by S. Baudé (Mutadis)
- GEP Mines : a plural expertise process, by F. Rollinger (France)

The interest of the group with regard to the issue of radium-bearing and graphite waste is to learn and exchange on good practices from European experiences about site selection processes. As a conclusion, an analysis of the contributions was made by S. Baudé with a view to characterize the contribution of local communities to safety.

### ***Radium-containing and graphite waste***

The graphite waste come from decommissioning of natural uranium-graphite-gas reactors (decommissioning currently underway or planned). They come mostly from commercial reactors which were operated by EdF (up to about 83%), a small proportion comes also from the first graphite reactors or research reactors that were operated by CEA. They represent a volume of 23,000 tons. The proposed disposal for low level long-lived wastes relate to already produced waste and not to waste being currently produced in nuclear power plants. The solution for these two types of waste would be a sub-surface disposal down to ten meters deep.

The radium wastes contain relatively high concentrations of radium. They come mainly from processing minerals such as monazite sands containing rare earths, zirconium, pitchblende uranium... They also come from historical CEA activities when developing concentration processes for uranium ore, as well as from the rehabilitation of historic sites contaminated with radium. Today, the radium waste inventory is approximately 30 000 tons, which represents 35,000 m<sup>3</sup>.

ANDRA intends to store these two types of waste in two different disposals on the same site.

(Source PNGMDR, ANDRA)

## IV.4 Belgian partnerships<sup>4</sup>

*In NSG 3 a presentation of the Belgian and Slovenian partnerships was proposed. In both countries, a partnership between local actors and the radioactive waste management agency was carried out to support the siting process for a facility for low and medium activity and short lived wastes.*

The siting process that engaged the municipalities of Mol, Dessel and Fleurus-Farciennes in so-called 'partnerships' (called MONA in Mol, STOLA in Dessel, and PaLoFF in Fleurus-Farciennes) with the Belgian national nuclear waste management agency (NIRAS/ONDRAF) up till now only looked at so-called 'category A waste'. This is low- and intermediate-level short-lived radioactive waste (LILW). This waste requires a monitoring of the disposal site during 200 to 300 years.

The local partnerships were set up as a micro-level model of representative democracy. Overlooking the whole partnership activity is a **general assembly (GA)** uniting representatives of all participating organisations. These organisations (elected representatives, NGOs, economic forces,...) were initially identified by using a social mapping technique. NIRAS/ONDRAF has one seat in the GA (in all three partnerships this seat was taken by the director-general). This assembly decides on the main strategic course for the partnership discussions. The general assembly meets about twice a year on average, with a higher frequency towards the end of the partnership negotiations. It is the general assembly that finally decides if the integrated repository project (as developed by the partnership) will be presented to the municipal council.

The general assembly appoints an **executive committee (EC)** in charge of the day-to-day management of the organisation. The members of the executive committee form a balanced representation of the organisations represented in the GA. NIRAS/ONDRAF also had one member in the executive committee of each partnership. In practice, they functioned as 'go-between's'. The executive committee is, amongst other things, responsible for the coordination of working group activities, decision-making on budget spending, intermediary decisions regarding the project development and the supervision of the project coordinators.

In several **working groups** all different aspects of the implantation of a LILW repository in the community were discussed. As suggested by the outset design from NIRAS and its university partners, in MONA and STOLA there were each three 'technical' working groups ("implementation and design"; "safety"; "public health and the environment") and one group on "local development". All working groups were composed of both representatives of local organisations as well as individual citizens who expressed an interest to participate actively in this discussion forum. Each working group was attended by a permanent member representing NIRAS/ONDRAF and having a particular expertise regarding the topics discussed in that working group. The NIRAS/ONDRAF collaborators made the other working group members acquainted with their plans and views on how the repository should be set up. Consequently they

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<sup>4</sup> This presentation was made by G. Meskens (SCK.CEN) during the 3<sup>rd</sup> NSG meeting, June 2008. This contribution was extended to a Research Brief "*Belgian case study : local partnerships for the siting of a LILW repository*" (available on Cowam web site)

entered into discussion about the reasons behind the (technical) options they proposed and about possible alternatives. In the working groups relevant existing research was taken into consideration, the need for additional studies evaluated and experts (of whatever type or orientation deemed relevant) invited to participate in the debate. The working groups reported regularly to the executive committee and drafted the different constituent parts of the integrated repository project.

The final partnership report, describing the integrated project proposed and the conditions put forward by the partnership, was written by the project coordinators, with regular feedback from the working groups and the executive committee.

While based on the Belgian case, the analytical insight was viewed as 'decontextualised' reflections on aspects of public participation, compensation, local democracy in a national political context and the role of institutions. In their last NSG meeting the Slovenian group asked for a presentation of the Belgian partnership and made a self-assessment of the Slovenian partnerships, which were structured on the Belgian model. On the request of the French National Facilitator, G. Meskens completed his presentation on the Belgian partnerships with a feedback on the SWOT analysis<sup>5</sup> (Strengths, Weaknesses, Opportunities, Threats) made by the Slovenian stakeholders on their own partnership.

## ***Discussion***

Some common points were identified between the Belgian and the Slovenian partnerships. A competition came out between neighbour municipalities (Mol, Dessel in Belgium; Krsko, Brezice, in Slovenia) as the proposed site was expected to be in one territory, at the other municipality's border. In both countries, the concern was more local than national. The local communities were not involved in discussions with national institutions, e.g. on the national radioactive waste management policies, and were only able to discuss local level issues. Both cases show it is essential to have a clear waste management policy to avoid any gap between national decisions and the local level. Indeed, undertaking a waste management local policy without carrying out a clear national policy on this topic could create a gap between the national level, which takes strong public decisions, and the local one, in charge of solving issues on its territory. In Slovenia the SWOT analysis revealed opportunities and threats on the Slovenian process. If the partnership guarantees some aspects such as a better quality of decision and dialogue between experts, it equally underlines a low involvement of national institutions in the process, like in Belgium, and a different interpretation of the partnership's rules according to the communities.

The funding for partnerships comprises a budget for studies amounting twice 75 000 euros. These two provisions come in addition to the budget for the daily operation of the partnership. Thus the partnership provides resources for engagement and capacity building for the local community.

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<sup>5</sup> A SWOT analysis (Strength, Weakness, Opportunity, Threat) is usually carried out in a working group to identify the Strengths, (Weaknesses, Opportunities, and Threats represented by or related to a question. The SWOT here was used to make a return of experience on the partnerships built in Slovenia on the basis of Belgian partnership model.

It was underlined that the volunteer municipalities appear to be both “nuclear” communities. Indeed the chosen municipalities already have an experience with nuclear activities and are familiar with waste management issues since nuclear wastes are already stored there.

Contrary to the French CLI, the partnership (in Belgium as well as in Slovenia) considers risks issues as much as development issues (safety, environmental impacts, economical development, local social issues). There is not on the one hand people discussing about risks issues and on the other hand people discussing about projects. This is one of its positive elements. For instance, the MONA partnership made interesting reflections on economic development, suggesting for instance the creation of a special fund which would eventually be self sustained in the long term to support local development and initiatives.

#### **IV.5 The notion of affected communities from a British perspective<sup>6</sup>**

In NSG 4 the contribution of the Methodological Task Force focused upon communities in the context of the governance of radioactive waste in Great Britain. This contribution has been produced by Symlog as regards the presentation of the British policy and Westlakes Scientific Consulting Limited as regards the research brief on “affected communities”.

##### **The national policy for radioactive waste management in Britain: Managing Radioactive Waste Safely (MRWS)**

In 2001 the government established the 'Managing Radioactive Waste Safely' process to identify methods to manage all solid high activity long lived waste. Drawing lessons from the problems the objectives of this policy were :

- To achieve a long-term protection of people and the environment
- In an open and transparent way to reach public confidence
- On a robust scientific basis
- Being efficient in terms of public expenditure.

Following an initial consultation on how to investigate this issue, the Government introduced a new independent body - the CoRWM committee (Committee on Radioactive Waste Management) - responsible for designing the next phase of consultation and review management options to advise the government.

From 2003 CoRWM carried out intensive consultations with experts and the public and conducted a systematic evaluation of options. In 2006 CoRWM published a recommendation method to meet two key criteria set for the consultation (safety and security): geological, preceded by a robust interim storage for 100 years or more. CoRWM stated that site selection

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<sup>6</sup> This presentation was made by R. Wylie and S. Haraldsen (Westlakes Scientific Consulting) during the 4<sup>th</sup> NSG meeting, November 2009. This contribution was extended to a Research Brief “Defining an Affected Community” (available on Cowam web site)

should be done through a partnership between the government and a community. The recommendations were largely accepted by the government (except Scotland).

In 2006-8 the government conducted a new broad consultation and set out a framework program for the implementation of these recommendations (White Paper, June 2008). From 2008, the Government invited the communities to begin discussions "without commitment" on possible candidate sites. CoRWM was extended with mandate of continued audit on the implementation of the Government policy.

The White Paper by DEFRA (June 2008) for the implementation (site selection and disposal location) takes into account the recommendations of CoRWM including some major principles:

- The establishment of local-national partnerships
- On a voluntary basis and with a right of withdrawal
- With provision of financial support for the commitment of local communities in the process,
- And economic benefits negotiated for a "service to the nation" over several generations

The Framework Programme set up two different packages : an "engagement package" to support the involvement of local communities that are interested in the selection process and gives them the means to develop their own capacity for expertise on topics that they wish to discuss ; and a "benefit package", corresponding to benefits granted to the selected community. This distinction between the two packages results of a recommendation from CoRWM. Together with the notion of right of withdrawal it gives genuine autonomy to communities in their participation in the selection process.

### **The notion of affected communities**

Community is a complex and sometimes contested concept which has a range of definitions and expressions. In the context of radioactive waste facility siting policy in the UK, community engagement and empowerment are crucial to the success of the policy process. Given this, defining what constitutes a community in respect of its credible representation is an essential element of the MRWS policy process. However, in contrast to the clearly specified geological screening process and subsequent investigative process, the community engagement processes are relatively unspecified, allowing a tailoring of the process to reflect the social and political specifics of particular locations.

In the UK, the site selection process, within the MRWS programme (which is ultimately seeking a long-term geological disposal facility coupled with safe and secure interim storage for higher activity radioactive waste) is based upon two key concepts. Firstly, voluntarism which represents a bottom-up community-led approach to selecting a site; and secondly partnerships, enabling coalitions of interests, individuals and organisations to work together as host communities, wider local interests and decision making bodies, to achieve the implementation of the policy. This 'bottom-up' approach is the ethos of facility siting in MRWS and reflects the need to accommodate a range of interests consistent with local situations and to configure the facility siting process to local contexts.

Given the essentially localised nature of a radioactive waste facility, it may be that a Geological Disposal Facility will impact on a very localised community within a wider area, such as the boundary of a local authority or Decision Making Body. It may be that significant community issues may yet emerge in respect of a facility siting process at a very local level.

It has been suggested that, in contrast to *a priori* definitions of community, lived and psychologically experienced communities are about membership, about meaning and about mobilisation in respect of engagement and defence. Felt and experienced individually, yet expressed collectively, they are based upon commonality of experience, shared meaning and the emotional connection. Given the scale of the implementation, the development of a radioactive waste facility creates new dynamics and relationships within overarching communities such as local authority areas.

However, the governance ‘architecture’ of facility siting in the UK does have a degree of flexibility through the community siting partnership. This partnership process should allow for local communities to be credibly represented, with scope to accommodate new issues as they emerge.

### ***Discussion***

It was emphasized that the British radioactive waste are managed by the government and not the operator. This is a very strong guarantee, which can be felt as an important guarantee. Another important dimension in this process is that the schedule for selecting a site is not set. The site selection process could last decades indeed. Another typical aspect is that the Scottish position at the moment is for Scotland to deal with their own waste, in their own way in a near surface disposal.

The Sellafield area (West Cumbria) is currently the main area having expressed an interest in the site selection process. It was already considered for hosting a rock laboratory in the mid 1990s. The geology in the area is so complex that the location could be somewhere else, far from the location considered at that time. The West Cumbria area has been very much linked to the nuclear industry for the past 50 years. The decommissioning of reactors could cause the loss of 8000 jobs, which would be a drama for the place. The economic future of West Cumbria area is shrived in a document called “Britain Energy Coast”. This document is the result of a West Cumbria strategic initiative instigated by local governments and signed up by Tony Blair as a Prime Minister. In the document considers that the area will not have the possibility to consider a future which avoids radioactive wastes. The document also recognises the importance of community knowledge and community perceptions in the management of waste and the potential economic benefit to this. It will also discuss the relationship between the radioactive waste and reprocessing activities and some other nuclear activities.

In the British process as in other national processes the potential site could be located at the border between several administrative districts and will involve several levels of jurisdiction (county, district, region). This may raise issues of competition between communities, or otherwise get them to develop upstream partnerships to include the potential site in a draft common territory.

## **IV.6 The Regional Observatory of Industrial Waste of Midi-Pyrénées (ORDIMIP): a regional dialogue process for the implementation of a repository for ultimate and special industrial waste<sup>7</sup>**

The 13<sup>th</sup> July 1992 Law on waste elimination and classified facilities for environment protection prescribes elaboration of Regional Plans for Elimination of Special Industrial Waste (PREDIS), which should include the implementation of a repository for ultimate and special industrial waste.

In the French Midi-Pyrénées region, the development of a PREDIS and the implementation of a repository was supported by an extensive dialogue process, which went far beyond the official consultation procedure provided for by the law. This dialogue process relied on an ad hoc body, the ORDIMIP, which gathered the stakeholders in the region (local governments, territorial divisions of State administrations, industries and business organisations, NGOs, experts, trade unions ...). The ORDIMIP enabled to embody into a same dialogue process different tasks such as working out a shared diagnosis on industrial waste and its management, formulating recommendations for a regional policy for industrial waste management policy, and following-up the implementation of a repository.

Although it had no decision powers, the ORDIMIP constituted from 1993 to 2000 the steering organ in the process of setting up a repository, from the preparatory phase (in which the ORDIMIP made the initial diagnosis, worked out the specifications for the projects of repository and evaluation criteria) to the final phase of follow-up of the implementation of the repository (methodological and technical support to the Local Information Committee attached to the repository), and played a key role in the evaluation of the 6 proposed projects of repository.

## **IV.7 Pluralistic Expert Group on uranium mining sites in the Limousin<sup>8</sup>**

The mining of uranium has long occupied a paramount place in Limousin. The decline of this activity from the 1980s led to the gradual closure of sites. This process required to initiate an intense technical and administrative work to ensure a restoration of sites consistent with the objectives of protecting people and the environment.

The complexity of the process and the multiplicity of the sites have led to differing interpretations on the terms of such rehabilitation. These differences, fueled in particular by measures and studies conducted at the initiative of local and national associations, have led to legal developments and important media in recent years. In this context it has been decided in November 2005 by the Ministers of Ecology and Sustainable Development, industry and health to set up a pluralist Expert Group (GEP) on uranium mine sites in Limousin. Its remit was

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<sup>7</sup> Presentation made by S. Baudé (Mutadis), on the 2<sup>nd</sup> NSG meeting, October 2007, on the basis of the CERTOP report on ORDIMIP. <http://www.ordimip.com/files/Rapport%20Certop.pdf>

<sup>8</sup> Presentation made by F. Rollinger (IRSN), , on the 2<sup>nd</sup> NSG meeting, October 2007. Further information are available at : <http://www.gep-nucleaire.org/>

reinforced by a new mission statement in November 2007, extending its action until the end of 2009. The GEP is composed of over twenty experts from diverse disciplines and backgrounds, including French and foreign institutions, associations, independent experts, and industry, plus other experts in working groups. It began its work in June 2006 and submitted three progress reports (in January 2007, January 2008 and July 2009). The GEP will submit its final report to the authorities at the end of 2009.

The GEP is responsible for bringing a critical eye on the technical documents provided by the mine operator Areva NC (formerly Cogema) for sites in the Haute-Vienne, with a view to support the administration and the operator in their consideration of management options and monitoring options for these long-term facilities. Its mission also includes the role of public information.

#### **IV.8 Contribution of the local communities to safety and radiation protection around radioactive waste management sites<sup>9</sup>**

In the NSG 4 the Methodological Task Force was invited to make a synthesis of the four presentations made on the issue of site selection, and community support.

Engagement of local communities and actors in the decision making processes is traditionally motivated by the fact they are impacted by the decision taken. This traditional rationale for engagement of local communities and actors is driven not only by ethical concerns, but also by the necessity for public authorities to comply with national or international legal frameworks which give to stakeholders concerned by a decision having environmental impacts the right to be informed and participate to the decision (e.g. the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters or, in the French context, the Charter for the Environment which has been included in the French constitution in 2005).

In the field of radioactive waste management (RWM), the results of COWAM 2 European research project (2003-2006) reinforced this drive towards engagement of local communities and actors in decision making processes by showing that safety of a radioactive waste management site depends not only on the quality of its technical conception and implementation, but also on the quality of surveillance of the facility and of its impacts and on the development of a "safety legacy" (know-how, procedures, resources, safety culture ...)<sup>10</sup>. In particular, COWAM 2 has shown that local communities play a key role both for the continuity of surveillance and monitoring and for the development and transmission of the safety legacy from one generation to another<sup>11</sup>.

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<sup>9</sup> This presentation was made by S. Baudé (Mutadis) during the 4<sup>th</sup> NSG meeting, November 2009. This contribution was extended to a Research Brief (available on Cowam web site)

<sup>10</sup> See introduction of the COWAM 2 Final synthesis report (pp. 5-8)

<sup>11</sup> See in particular Section 6 of COWAM 2 WP4 Final report (pp. 38-47)

Accordingly, the potential impacts of a radioactive waste facility on the environment partially depend on the capacity of the local communities surrounding the site to contribute to the surveillance of the facility in the short, middle and long term.

This contribution aims to identifying conditions for an effective and sustainable contribution of local communities and actors to the safety of a radioactive waste management (RWM) site and to radiation protection. The objective of the analysis is more precisely to identify conditions in the siting process that could favour the contribution of local communities to safety and radiation protection, building on the four case studies of siting processes presented in the French NSG:

- The Belgian partnership approach for siting a low and intermediate level waste (LILW) repository<sup>12</sup>
- The Slovenian partnership approach for siting a LILW repository<sup>13</sup>
- The process for siting for a regional industrial waste repository in the French region of Midi-Pyrénées and the regional dialogue carried out through the Regional Observatory of Industrial Waste in the Midi-Pyrénées (ORDIMIP)<sup>14</sup>
- The Community Siting Partnership approach for siting a geological disposal in the United Kingdom<sup>15</sup>

The analytical grid used for the review of these four case studies has been developed on the basis of COWAM 2 results, of other European research projects (e.g. TRUSTNET IN ACTION), of the analysis of the French Local Liaison Committees (CLI) and their national association (the ANCLI) and of several research works (IGNA study<sup>16</sup> - Inclusive Governance of Nuclear Activities, July 2006; “*Acting in an Uncertain World: an Essay on Technical Democracy*” of Callon, Lascoumes and Barthes; Fung’s and Wright’s article “*Counter-power within deliberative and participatory democracy*”; Etienne Wenger’s “*Communities of Practice: Learning, Meaning and Identity*”). This analytical grid is divided into five key issues that influence the safety, robustness and sustainability of the contribution of local communities and actors to safety and radiation protection around a RWM site:

- The capacity of local communities and actors to assess the justification of siting a RWM facility in their territorial context
- The quality of interactions between local actors and of local democracy
- The development of local knowledge, know-how and expertise
- The capacity of local communities to interact with other decision levels which have a local impact

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<sup>12</sup> See the research brief "Belgian case study: local partnerships for the siting of a LILW repository"

<sup>13</sup> The analysis of the Slovenian Partnership approach was based on the National Insights for Slovenia included in the final report of Work Package 5 of COWAM 2 and on the participatory assessment of the Slovenian partnership approach carried out in the framework of CIP by the Slovenian National Stakeholder Group (NSG) – the outcomes of this participatory assessment process are available in the minutes of the 2<sup>nd</sup> and 3<sup>rd</sup> meeting of the Slovenian NSG

<sup>14</sup> See the presentation of the ORDIMIP case study in the research brief "Participatory Assessment of Decision Making Process"

<sup>15</sup> The analysis of the Community Siting Partnership approach for siting a geological disposal in the United Kingdom has been based on the White Paper "Managing Radioactive Waste Safely – a framework for implementing geological disposal" issued by the Department for Environment, Food and Rural Affairs (DEFRA) in June 2008.

<sup>16</sup> [http://www.mutadis.org/IMG/pdf/IGNA\\_0407.pdf](http://www.mutadis.org/IMG/pdf/IGNA_0407.pdf)

- Integration of radioactive waste management in local socio-economic activities and development projects

The full analysis is available on Cowam web site.

### *Discussion*

It was noted that the site proposed near Bure is located in an area with a low demographic density. What about the population to come when the site will be in operation? The impact on employment will be important in the area and will lead to a sociological transformation of the population. This point led to a discussion about attractiveness. Does the area's attractiveness stem from the site, or is it for the site to integrate a wider community development programme? The way the local community projects contribute to skill development at local level and empowers local actors to act at local level but also on decisions to be taken at a higher level, could be an interesting quality criteria for site selection processes.

The CLIS will soon establish a Committee on issues of development This committee entitled "Choosing the location of a prospective disposal" will discuss topics such as infrastructure and roads, but also the transposition of geological and other technical data coming from the laboratory to a nearby area.

In conclusion of this discussion, several participants expressed an interest to keep in mind and renew this international return of experience to improve the understanding of the key challenges which a site selection may face in France, now and in the future.

## ***V. Cooperative Investigation on modalities of integration between local and national governance levels, including the contribution of current national dialogue processes***

The previous COWAM projects have stressed the fact that RWM projects cannot be managed and discussed at local level only. There is a need to connect the short-term and locally focused question of site selection to the wider policy framework at national level, and to the perspective of a long-term management and monitoring. There was a great interest in the NSG to discuss these local-national connections, all the more as the new 2006 law set up new instruments for dialogue both at local and national levels.

### **V.1 Research demand by the NSG**

Several mechanisms that contribute to establish dialogue between national and local actors concerning radioactive waste management are being introduced in France. They aim to favour integration between national policy objectives and local objectives. These mechanisms notably encompass:

- The technical working group on the National Plan for the Management of Radioactive waste and materials (PNGMDR) set up in the framework of the 28<sup>th</sup> June 2006 Law,
- The High Committee for Transparency, set up by the 13<sup>th</sup> June 2006 Law concerning the nuclear issues in general, that is to replace a previous body (the High Council for Nuclear Information and safety – CSSIN),
- The proposal of a National Permanent Pluralistic Commission called for by the French National Association of Local Committees (ANCLI) in order to follow up issues of governance of radioactive waste management,
- The National Commission of Public Debate, that consider, following a recent return of experience on its activities, to follow-up the aftermaths of the debates it has organised, notably in the field of nuclear activities.

The objective of the investigations considered in the framework of CIP could be to evaluate:

- How these mechanisms contribute, on the one hand, to discuss the issues of governance that arise in the field of radioactive waste management and, on the other hand, to effectively integrate local and national views and perspectives?
- the conditions of a good articulation between these two governance levels

On this topic, the group may:

- Identify and examine the expectations concerning integration, notably on the basis of the existing outcomes of COWAM 2.
- Analyse recent return of experience from abroad

- Identify evaluation criteria from past or current experiences
- Lead a common evaluation of existing mechanisms (strengths and weaknesses) in order to identify directions of progress

## **V.2 Hearings of HCTISN, PNGMDR and ANCLI**

On its last meeting, the NSG heard presentations of three Committees or similar bodies playing a role in liaising local and national stakeholders :

- the High Committee for Transparency and Information on Nuclear Safety (HCTISN)
- the National Plan for radioactive waste and materials management, and its group
- the Permanent group on materials and radioactive waste (GPMDR of ANCLI) and ANCLI of proposal for a Pluralist and permanent national Commission (CNPP)

Through the discussions, the group highlighted the distinctive contribution of these three "tools" for dialogue between local and national institutions that are HCTISN the PNGMDR, and GPMDR. In addition, the group analyzed the contribution of the French NSG on local- national dialogue. This was an opportunity to assess the work achieved in CIP and cooperative research method.

### **1. Presentation of the High Committee for Transparency and Information on Nuclear Safety (HCTISN), by Henri Revol, president of the HCTISN**

The HCTISN was established by the law of June 13<sup>th</sup> 2006, on transparency and safety in the nuclear field (TSN law). It really took office on June 6<sup>th</sup> 2008. It is composed of Members of Parliament, representatives of the CLI, associations, trade-unions, nuclear industry, experts and representatives of the State. Its members are volunteers.

It is a forum for information, consultation and debate on the risks related to nuclear activities and their impact on human health, environment and nuclear safety. It may issue opinions and recommendations and is in charge to monitor them. The diversity of its opinions promotes transparency. Its meetings are subjected to a full report, published on its website so that people can react.

The High Committee has the opportunity to issue its own subjects, take up issues or seek expert advice if necessary. He filed a notice on the SOCATRI event in Tricastin on July 16<sup>th</sup> 2008 and on the transport of plutonium between Great-Britain and France. It can be seized by the ministers in charge of nuclear safety, the chairpersons of relevant committees at the National Assembly and Senate, the President of the Parliamentary Office for evaluation of scientific and technological

choices (OPECST), by the CLI presidents and by operators for any matter related to information on nuclear safety and its control.

*HCTISN : a wide follow up of transparency of nuclear activities at national level - an incentive for constant progress*

The HCTISN issued 18 recommendations following the Tricastin event, and these have been on the whole taken into account by the Minister. This is a positive indication of the role the High Committee can play in influencing policies and management of important issues, although the High Committee remains a consultative body. The High Committee can not be seized by ordinary citizens. Nevertheless, the CLI can seize the Committee if they have not obtained the desired answers to their questions from operators or public authorities: the High Committee can then deliver an opinion. Through its mission to facilitate access to information, the High Committee cannot commit operators or authorities to action, but it can stress difficulties, needs and hinder – notably through its annual report - so that eventually decisions are taken to meet citizens' expectations on transparency.

## **2. Presentation of National Plan for radioactive waste and materials management (PNGMDR), by J-L. Lachaume, ASN Deputy director**

The PNGMDR is a governance tool created by the TSN law. Its main objective is to find solutions to long-term management for each category of radioactive waste produced, to reduce the amount of radioactivity and radioactive waste, and store them in dedicated facilities such as a deep geological disposal for high level waste. The Plan covers both materials and radioactive waste. For materials, one means the spent fuel, which is considered to be recycled, but which could be managed as a waste if it is finally decided to consider as such. The PNGMDR is also responsible for organizing the implementation of research and studies, necessary to develop new management trends, methods and facilities. To carry this out, the PNGMDR relies on the national inventory of radioactive waste and materials released by ANDRA. This inventory is updated every three years, forwarded to the Parliament for review by OPECST and made public. Finally, the PNGMDR does not deal with funding issues.

*The PNGMDR : making a continuous extensive and transparent review of waste management trends*

A pluralistic working group co-chaired by the Safety authority (ASN) and the Ministry of the Environment (DGEC), gathering waste producers, representatives of the State, ANDRA, IRSN, CNE, NGOs, ANCLI, AMF and OPECST, monitors and directs its implementation. Its organization and operation are very flexible, with two to four meetings per year with different topics each time. It operates on a step by step approach, requiring regular appointments, the definition of its objectives and is subjected to consultation with stakeholders.

The first PNGMDR has expanded the role of ANDRA and created of the National Commission on aids in the radioactive field (CNAR), a timetable for the storage and disposal of long-lived waste, and research for the evaluation of existing management chains (mining, waste with

enhanced natural radioactivity). A consultation on the first plan was made in the Internet. It was also reviewed by the Parliament, which carried out hearings and released recommendations. The second version of the PNGMDR, in preparation, will set the framework for studies to be undertaken for non-operational channels and will take stock of existing channels and actions to carry out to improve management.

### **3. Permanent group on materials and radioactive waste (GPMDR of ANCLI) and the Pluralist and permanent national Commission (CNPP) proposal, by C. Rigal, leader of the GPMDR**

In 2006, ANCLI held a roundtable with the CLI on waste issue in order to inform the State about the CLI point of view, in the course of a preparation of a bill on waste management. The roundtable led to the publication of a White paper on “Territories, radioactive materials and waste.”

Among the recommendations of the White Paper, ANCLI made a proposal for a pluralistic National Commission to monitor the management of radioactive materials and waste. It would be composed of representatives of civil society, local actors (ANCLI, CLIS and CLI), local elected representatives, trade-unions and associations appointed by the Government on a proposal of member institutions. This Commission would combine its work with authorities, public experts, operators and waste producers. ANCLI still wants its creation as a permanent forum for debate where different stakeholders on the issue of nuclear waste could intervene. The CNPP would be responsible for organizing regular meetings points between governmental actors and the general population with the CLI and ANCLI and contribute to transparency by making available to the public accessible and understandable information. Finally, the CNPP could develop a global and independent point of view from existing information or expertise. The CNPP wants to be a forum between the local and national level, in order to fully participate to the implementation of projects on waste management under the national policy. However, this proposal has been suspended with the creation of HCTISN. The government wished the implementation of the HCTISN before considering whether to create or not a CNPP.

Meanwhile, ANCLI has established a permanent group for radioactive material and wastes for these issues, the GPMDR composed of CLI members, CLIS of Bure, elected representatives, experts and associations. Much of its members are citizens without specific scientific knowledge. The GPMDR has set two objectives, in order to reply to the demand for consideration from the CLI on the governance of nuclear activities: monitoring of the White Paper recommendations and the implementation of radioactive waste and materials law. The GPMDR was particularly mobilized on tritium issues in 2007 and 2008 and has recently set as work themes reversibility and low-activity long lived waste.

*ANCLI's GPMDR: capacity building for local communities on radioactive waste management and related governance issues*

The GPMDR is not an institutional process as is the PNGMDR or the High Committee. However, it allows CLI members to mobilize experts and institutions on a problem such as tritium releases

for example and created a public space open to discussion. All this implies capacity building since most members of GPMDR are citizens with no specific scientific knowledge. The group is an opportunity for local actors to express their views freely and to raise questions that arise from the territory.

#### **4. Looking back at the activities of the French NSG in CIP**

It was proposed to discuss the value of CIP France activities as a cooperative research process : What have been according to participants the major contributions to cooperative research in CIP France? How did the process help facilitate dialogue between stakeholders? What are the limits? What are possible improvements?

A comparison was made with the processes that have been presented above (GPMDR, PNGMDR, HCTISN). It was underlined that the work done in CIP on reversibility at territorial level with the CLIS of Bure and local stakeholders from La Hague was important for local actors to build their point of view. Then in the national meetings local and national stakeholders could discuss the issue and confront their views, and try to bring out some convergent questions without any pressure to build consensus.

##### *A temporary tool for local-national dialogue*

The research on reversibility made local actors realize that they are not alone. With CIP they discovered that others think about the same issues in other places than Bure. It was possible to discuss with people who are already familiar with these issues at local level with the experience of long operating disposals: people living in North Cotentin have a concrete example of the notion of reversibility and irreversibility. The limits of the current waste management approaches is that they are only local, it was argued. If the waste are not disposed in Bure, they are in the swimming pools in La Hague. And if one wants to move them from these pools, one must find them a place where to go. How can a local approach solve such a problem? The value of CIP is to extend far beyond the local and national approaches because it works on a European scale, it was viewed.

A member of the Methodological Task Force commented that when discussion on reversibility started in this group it was thought that the group will go for technical discussions. Then it was realized that more time is needed to understand, formulate the problem constructively. We now approach a number of issues of practical implementation. The important thing is to have a neutral space and share with other countries.

Another value of CIP was indeed found in the fact that in meetings a number of actors meet in a place with no direct stake which creates positive conditions for freedom of speech. A participant noted that through CIP the question was raised how territories can engage local actors on issues of governance : have local stakeholders a power of informants or also a power of action?

## **VI. Summary - Conclusions**

During five meetings from June 2007 to June 2009, chaired by Mrs Rigal, ANCCLI, the pluralist group “CIP France” conducted an unprecedented analysis of the practical conditions of reversibility, starting from the plurality of knowledge and experiences of participants, and their many questions.

This group also provided a space for dialogue on issues relating to site selection, through different European experiences, trying to take into account the territorial dimension of development and the long term aspects of waste management facilities.

Finally, the group shared an analysis of the French situation as regards local-national dialogue on waste management. In continuation of this analysis, the group reflected on the work carried out for nearly three years in the draft CIP. How does this work have contributed to a dialogue between local and national? What was the nature of this contribution?

### **Reversibility in practice: a democratic challenge**

The reversibility of the geological disposal is guaranteed by the law on nuclear waste and materials management as of 28<sup>th</sup> of April 2006. The law provides a wide definition, only saying that the period of reversibility must be at least 100 years. In 2016 another law will detail more precise procedures.

The CIP meetings with local actors and representatives of key national institutions involved in this issue, allowed bringing together a set of knowledge and experiences on the following themes:

- Aspects associated with the practical implementation of a reversible disposal: technical aspects, monitoring, safety, expertise, responsibilities, legal, financial, administrative, political aspects.... related to the concept of reversibility
- Governance issues associated with the evaluation and decision processes
- The roles of local stakeholders in these processes.

Thus, the CLIS of Bure reminded its main question on the implementation of reversibility: does the 100 years of reversibility start from the input of the first package or from the input of the last one? In the first case, reversibility coincides with the period of operation which makes the concept meaningless for the CLIS.

ANDRA informed the group about current technical work at the Agency following the 2006 law. The Ministry of Environment and the Nuclear Safety Agency reminded the legal and regulatory framework. At the participants’ request, the Ministry of Environment representative also informed the group about financing methods of reversibility, as provided by the law. While some devices are set up following the 2006 law, other questions remain open and must be addressed by 2016, such as the transparency of funds management, waste long-term responsibility and financing (operators, State ...). The discussion particularly highlighted the lack of proper funding for packages removal and for an alternative management of waste in such a case.

ANCLI wished local actors could propose the group their own return of experience on the basis of CLIS work, and an analysis of the Centre Manche situation, at La Hague. This return of experience took the form of three meetings (Bar-le-Duc, Flottemanville-La Hague, Paris) during which local actors identified a set of issues: control and follow-up of the inventory, site memory and transmission between generations, environmental and health monitoring, decision-making process throughout the period of reversibility. In general, this contribution questioned the role of territorial actors in implementing reversibility. The principle of territorial vigilance has become even more important for local actors that the site impact is immediately located in a very long term view.

These different contributions have led to a new framing of reversibility. The 1991 law was a research law, giving a mandate for technical operators. The 2006 law is a research and a management law, which announces the establishment of a model of governance, combining research, technical and democratic, legal and financial devices. Several considerations emerge from this new framing:

- There is in France a legal and political framework which includes reversibility as an entire part of the geological disposal (2006 law)
- This legal and political framework is being established and must be detailed in a new law in 2016
- Practical reversibility, ie the practical implementation of the principle of reversibility, such as maintaining a capacity of choice between packages withdrawal, continuing a reversible disposal or its closure, requires a freedom of choice
- Reversibility involves a broad set of political, economical, financial, ethical and technical considerations
- The reversibility option assumes the existence of appropriate means - technical, organizational, financial and decision-making - in a democratic context and the maintenance of these means during the period of reversibility
- The definition of reversibility in 2016 will have to take into account all these components; several participants, including from the CLIS, emphasized that the technical definition should follow from the sense we want to give this concept, and not the opposite
- Through the principle of subsidiarity, local actors are directly involved in the mechanisms of reversibility
- A set of actors are required to cooperate to define this capacity of choice and its implementation, among them the institutional actors and local actors in their diversity
- The 2013 public debate will be a strong moment for a broad dialogue on reversibility and can be prepared from today by an investigation of its various practical dimensions

One of the conclusions of CIP cooperative research on reversibility is an acknowledgement that questions about reversibility are not only technical. While the responsibility to make a technical proposal for a reversible falls into the hands of the operator, they need to be appropriated and discussed by many other actors, especially local ones. Moreover reversibility is also much about legal, financial, ethical and political issues. These essential questions cannot be handled from a technical perspective. They should be worked out with a plurality of actors together, with decision-makers, to prepare and inform the eventual decisions.

## **Site selection for a low level long lived waste site (LLW-LL): international return of experiences**

The 2006 law put on the agenda the search for a FAVL waste disposal site. These wastes correspond partly to elements of gas graphite reactors, partly to radium-bearing wastes from chemical activities or drainage works of nuclear sites. The law defined an initial tight calendar, with a goal of having a site in 2013. This schedule was motivated by the desire not to delay the decommissioning of graphite gas power plant, and to achieve a better management of the waste currently stored on the original sites.

At the first CIP France meeting, a strong interest was expressed to observe European practice of site selection, in order to identify and analyze the good practices the French situation could benefit from.

Several returns of experience were proposed and discussed in plenary sessions: Slovenian and Belgian partnerships for the LLW-LL waste site selection, the selection site process in the United Kingdom, a regional device for specific industrial sites management (Midi-Pyrenees).

Two strong points emerged from the analysis of these experiments.

First, the different selection processes observed have been lasting over several years. The time dimension is an essential element of these processes, both because emergency is not favourable to dialogue and trust building, and because local communities need time to evaluate an application, and gain in capacity over the issues that are inevitably risen by the implantation of such a site. In Great-Britain, the Government has deliberately not given any deadline for the selection process and estimated it could take several decades.

Moreover, in these experiments the participation of territorial communities take a much broader sense than the agreement to a site selection. The dialogue falls within the scope of deciding the location of an industrial project, but the entire operating conditions of this project are discussed: since its opportunity and the justification of its facility here and now, down to the long term monitoring of the site, and its inscription within a territorial development project. The communities do not participate only as “affected” communities, but as partners in a development local project, as contributor to safety through the vigilance role they can play by defining the industrial project and monitoring its operation.

Despite a longer schedule (in June 2008, the 2013 commissioning objective was postponed to 2019), the French selection process appeared to be short compared to foreign experiences. A CLI president emphasized the asymmetry between the few months deadline given to municipalities to apply and the time necessary for construction. The municipalities felt isolated in the face of a call for candidates requesting a strong and sustainable commitment and raising issues that go well beyond the boundaries of their territory.

## **Dialogue processes between local and national actors**

CIP France compared various dialogue devices between local and national actors, implemented set up after the 2006 laws on nuclear waste management and transparency and nuclear safety.

The High Committee for Transparency and Information on Nuclear Safety carries out a monitoring of transparency issues that may arise in the nuclear field. Its first months of activity indicate that the HCTISN can play a major role in favour of regular progress by observing transparency issues, proposing recommendations and monitoring their follow-up. It highlights difficulties and the way they are dealt with. Its institutional position gives him an argument of great weight.

The PNGMDR provides a transparent, broad, and exhaustive vision of waste management procedures. There is a “cost of entry” to follow the PNGMDR as it reveals legal and technical details of different procedures management. It is not easy to access. However, the PNGMDR is open to associations and is subjected to public consultation every three years. The Plan is intended to plan and coordinate efforts in charge of waste management with a view to reach operational reliability. With its almost institutional characteristics, the PNGMDR is committing and somehow binding.

ANCLI’s GPMDR gathers CLI members to discuss issues in the field of nuclear waste management. It gives local actors opportunities of capacity building, both on technical aspects and on issues of governance. As a result from CLI self-organisation, this group maintains an informal characteristic which encourages an “open” questioning on waste issues. The GPMDR also re-frames technical aspects of waste management, by questioning the choices and management methods within and outside the technical field.

## **Looking back at CIP activities in the French NSG**

To conclude this overview, the group was invited to reflect on the work carried out for nearly three years within CIP. How has it contributed to a dialogue between local and national actors? What was the nature of this contribution?

Several aspects and effects of CIP France were highlighted.

### Plurality and mediation

The NSG is a pluralistic group whose members share a common interest in questioning the waste management process in terms of governance. Participants stressed the "neutral" characteristic of this group. Discussions occurred in an atmosphere of respect for the different participants’ point of views. The NSG has provided a place for dialogue, away from the decision making process.

Participants particularly appreciated the opportunity to have direct discussions that are not hampered by a "game role", institutional considerations or contradictory arguments. In addition, this group appeared as a place where simple and basic questions were not immediately disqualified.

Participants stressed the importance of mediation in the dialogue to keep the discussion focused on issues of governance and ensure a balanced dialogue.

The working group did not judge the past or the current radioactive waste management. The group members did not meet to negotiate. However, the group has made an important contribution by working on framing practical issues arisen by the implementation of waste management.

### Sharing and framework

The NSG has defined its work program during its first meeting (June 2007) after examining current issues in the field of radioactive waste governance. The framing of the cooperative research program was carried out in dialogue between different stakeholders.

For the three main issues discussed in the group (reversibility, selection process for low-level long-lived radioactive waste management site, integration between local and national levels of governance), the first step in the NSG was to take stock of the diversity of the situation. The topics were introduced by different categories of stakeholders. Contributions from participants on the same matter were different, not so much because of different opinions than because of different experiences or domains of knowledge. While the issue was discussed through a technical aspect by some, others have highlighted the legal, economical, political or ethical sides. Thus, the dialogue has enriched and broadened the scope of considerations on the topics. For example, about reversibility, the NSG highlighted dimensions such as local stakeholders' participation, decision-making process on reversibility options, financing, long-term monitoring, etc... These dimensions can be added to the technical notion of reversibility.

### Questioning and integration

While aiming to develop as much as possible a common understanding of governance key issues (on reversibility, site selection, or the relationship between local and national levels) the group methodology has facilitated the confrontations of points of view, allowing all stakeholders to express their position. Then, the group built on these different viewpoints, sometimes conflicting, to integrate the different dimensions, such as technical, legal, ethical, political, economic ... A particular aspect of this work was to examine the process of governance in terms of their ability to create resources and channels for participation by local actors.

## Connections between territories and capacity building

During the last NSG meeting, the local community representatives insisted on the fact that these exchanges at the national level - with representatives of national institutions, but also with other local communities - have sustained their discussions at the local level and have broken a certain sense of isolation. Local actors in Bure, in La Hague have received confirmation that they were not the only ones to ask questions, such as those about reversibility. The involvement of several actors from different territories in a dialogue with national actors can be a way out of a closed bilateral dialogue between a project proponent and local citizens. This kind of dialogue often leads to dead ends and does not fully address issues of governance. Cooperative research tested in CIP France has built bridges between different stakeholders, but also between different communities. This was expressed by a local member of CIP France as follows: "If the wastes are not yet in a disposal at Bure, they are currently stored in pools at La Hague. And if you want to remove them, they must find a place. How can a local approach solve such a problem? CIP goes well beyond the local approach because it operates on a European scale". The group highlighted the fact that a site operation or a site installation project in one region cannot be reduced to a local problem, and is a part of an overall management policy. By creating a space of neutral dialogue between local stakeholders and representatives of national institutions CIP has also contributed to "connect" local issues to national policy issues.

Similar reflections were made in the other Slovenian, Romanian, Spanish and British groups. In the 5 countries, CIP has established a temporary institutional process which provided a forum for discussions less formal than in some other arenas. It has allowed the development of new set of relations between the local and national actors concerned by nuclear waste management. The activities of CIP process were innovative with a view not to implement, but prepare for an inclusive approach to governance, promoting mutual learning and the development of a democratic culture, which is vital for a such complex issue as waste management.



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## Annex 2

### PROPOSALS OF RESEARCH THEMES

#### *Demands expressed by the French National Stakeholder Group (NSG)*

## 1. SYNTHESIS

As a result of the discussions of the French NSG about the research topics proposed by CIP in the field of governance, four subjects of investigation corresponding to topical questions for the French participants were identified:

5. Governance dimensions of the practical implementation of the concept of reversibility for a deep geological disposal: technical, social, political and economic stakes;
6. Processes for identifying, selecting and accompanying a site for the management of radium-bearing and graphite waste;
7. Modalities of integration between local and national governance levels, including the contribution of current national dialogue processes;
8. Economic development of territories as a condition of vigilance in long-term management of radioactive waste.

These subjects will be investigated from the three research orientations proposed by CIP: sustainable governance of long-term issues, structuring local communities, legal and institutional frameworks and processes. The following issues underlined during the discussions of the French NSG, will be addressed in a transversal way in the investigations:

- Role and contribution of expertise
- Conditions of implementation of vigilance on the long term
- Sustainable participation of local actors, young people and/or the public in the different dialogue forums (Local Committees, public debates, ...)

## 2. INVESTIGATION TOPICS FOR REFLECTIONS IN THE FRENCH CONTEXT

For each topic, paths of reflection were identified; however, they are not exhaustive nor finalised at this stage.

### **2-1. Governance dimensions of the practical implementation of the concept of reversibility for a deep geological disposal: technical, social, political and economic stakes**

In accordance with the perspective adopted by COWAM, this theme of reversibility will be addressed taking into account the concrete point of view of the various stakeholders, notably local ones. Research within this theme should thus contribute to analyse and discuss the way existing or considered mechanisms for practical implementation of the concept of reversibility for deep geological disposals are embodied within a process of long term governance (decision

process and criteria, financial mechanisms ...), as well as the constraints or potentialities that are associated with such mechanisms.

The following topics may be investigated:

- Sharing an appraisal of the technical mechanisms for reversibility currently considered in the French context
- Examining the expectations and objectives concerning reversibility in the context of the 2006 Law: reversibility, for which purpose? CIP may study the history of the notion in France, examine the return of experience from abroad, identify and discuss the expectations of the various stakeholders regarding reversibility.
- Discussing scenarios for the conditions of implementation (in terms of governance) of reversibility depending on the different technical mechanisms existing or considered.
- Discussing the particular role of expertise in the issues concerning reversibility: how can expertise on this question can be built and shared in order to favour a shared evaluation of the technical mechanisms between the various stakeholders?
- Discussing the articulation between the notion of reversibility and the ones of vigilance and governance of the long term.

## ***2-2. Processes for identifying, selecting and accompanying a site for the management of radium-bearing and graphite waste***

The 2006 Law provides for the selection of a site on which a storage facility for radium-bearing and graphite waste may be installed within 5 years. European experience – whatever the type of waste considered is – has strongly developed during the last 10 years, with the experimentation of new approaches for site selection (UK, Slovenia ...). In France, one can also notice innovation in the field of chemical waste (e.g. the existence of an innovative participatory process for the implementation of a storage facility for class 1 industrial waste in the Midi-Pyrenees region). The CIP group could analyse these different experiences in order to draw out the good practices that are relevant for the French case.

The works carried out in CIP on this topic could be exemplary regarding the way of tackling the subject upstream decisions, thanks to an effective multi-actor process allowing co-construction of the search for the solutions most adapted to the issue at stake, with actual transparency concerning the available information, the existing controversies, risks ...

Among the modes of governance associated with the process of identification and selection of a site, the following points may be analysed:

- The role of the various local and national actors in the selection process

- The development and sharing of expertise concerning radium-bearing waste management
- The inclusion of local actors in the process of defining and implementing the national decision framework (selection criteria, decision steps, right to withdraw, definition of management options ...)
- The elaboration of conditions of candidature for municipalities
- The development of a sustainable development project for the territory that is articulated with the activity of managing radium-bearing waste on the long term.

### ***2-3. Modalities of integration between local and national governance levels, including the contribution of current national dialogue processes***

Several mechanisms that contribute to establish dialogue between national and local actors concerning radioactive waste management are being introduced in France. They aim to favour integration between national policy objectives and local objectives. These mechanisms notably encompass:

- The technical working group on the National Plan for the Management of Radioactive waste and materials (PNGMDR) set up in the framework of the 28<sup>th</sup> June 2006 Law,
- The High Committee for Transparency, set up by the 13<sup>th</sup> June 2006 Law concerning the nuclear issues in general, that is to replace a previous body (the High Council for Nuclear Information and safety – CSSIN),
- The creation of a National Permanent Pluralistic Commission called for by the French National Association of Local Committees (ANCLI) in order to follow up issues of governance of radioactive waste management,
- The National Commission of Public Debate, that consider, following a recent return of experience on its activities, to follow-up the aftermaths of the debates it has organised, notably in the field of nuclear activities.

The objective of the investigations considered in the framework of CIP could be to evaluate:

- How these mechanisms contribute, on the one hand, to discuss the issues of governance that arise in the field of radioactive waste management and, on the other hand, to effectively integrate local and national views and perspectives?
- What are the conditions of a good articulation between these two governance levels?

On this topic, the group may:

- Identify and examine the expectations concerning integration, notably on the basis of the existing outcomes of COWAM 2.

- Analyse recent return of experience from abroad
- Identify evaluation criteria from past or current experiences
- Lead a common evaluation of existing mechanisms (strengths and weaknesses) in order to identify directions of progress

#### **2-4. *Economic development of territories as a condition of vigilance in long-term management of radioactive waste***

On the basis of a return of experience from European countries, COWAM 2 stressed the importance of the sustainable local development as a contribution to uphold on the long term the capacity of vigilance about the site. In France, several initiatives were started to reinforce economic development in the vicinity of the site of Bure.

- On which return of experience from abroad or in the field of chemical activities can one identify favourable conditions for an effective articulation between sustainable development and long term vigilance? How the lessons learnt could be translated in the French context?
- How to enhance the inclusion of the notion of vigilance in the definition of sustainable development projects for the territory?

### **3. CROSS-CUTTING ISSUES**

During the discussions in the French NSG, it appeared that the governance of radioactive waste management raises questions related to expertise, vigilance and sustainable participation of stakeholders. These questions will be addressed in a transversal way within the different investigation topics.

#### **3-1. *Role and contribution of expertise***

The construction of expertise in a context characterised by a wide participation of stakeholders raises various questions:

- How is it possible to organise the work with local actors in order to facilitate common ownership of knowledge?
- How should expertise be written out?
- How does co-construction of expertise develop in the field of nuclear activities?
- How may local actors be supported to develop their own skills, while observing the regulatory process as well as the operators' and nuclear safety authorities' responsibilities?
- To what extent can one consider mutual efforts of local actors on expertise at national level?

The elements of expertise brought in the different investigation topics above will be used to answer these questions in a practical way.

### **3-2. *Conditions of implementation of long term vigilance***

Considering the temporal dimension associated to radioactive waste management, the issue of implementation and uphold of vigilance on the long term is crucial. This issue is notably addressed in the investigation topic dedicated to economic development. Other questions may also be considered:

- How is it possible to ensure the distribution of a vigilance function between local, national, and maybe even international level?
- How is it possible to uphold and transfer a capacity of vigilance from a generation to another?
- How may memory be preserved?
- What is the exact meaning of the notion of compensation in the framework of the reflection about long term vigilance?

### **3-3. *Sustainable participation of local actors, young people and/or the public to the various dialogue fora (Local Committees, public debates ...)***

Taking into account the long term dimension also raises issues related to the permanence and continuity of the engagement of the various actors involved, and notably:

- What are the necessary conditions for a sustainable participation of non-institutional stakeholders in dialogue and monitoring bodies?
- How financial resources should be allocated?

How is it possible to build processes where the meaning and thrust of participation would be reinforced, notably for young people?

## Annex 3

### **Return of Experience on the Practical Implementation of Reversibility** *From the Centre de Stockage de la Manche (CSM)*

The CSM, with more than 527 000 m<sup>3</sup> of low and medium-level radioactive waste stored between 1969 and 1994, is the first and most important European center for storage of radioactive waste.

In October-November 1995, an inquiry was held on moving the center to a monitoring phase. Regarding the many issues and questions raised by this transition, on 22 December 1995, the Minister of Environment announced the creation of a commission of experts, the so called Commission Turpin, responsible for a thorough evaluation of CSM. The so called inquiry Pronost Commission handed in its report on 5 February 1996 and gave a favourable opinion. The government decided to wait for the Commission Turpin outcomes before authorizing the work.

Moreover, since the late 1980s, ACRO conducts environmental monitoring around the CSM. In May 2006, the association released a report on "lessons from the Centre de Stockage de la Manche."

Although dealing specifically with the CSM, which has historical features, the Commission Turpin and ACRO reports brought to light a number of factors that appeared interesting to better understand the practical challenges of reversibility in a disposal or storage facility. The CSM itself has not been designed as a reversible center. However, the questions it raises about the waste inventory management, the memory of what is stored, the oversight of the installation, the adaptation of standards and the role played by local actors are relevant for any facility with a dimension of reversibility.

#### *Constitution and memory of the inventory: the responsibilities of monitoring*

The current inventory of CSM is not known with accuracy. During the early years, only deposit slips from producers, waste senders served as a proof, so that the inventory was established on the basis of a single actor's statements. In retrospect, these statements appear to be not enough to form an opinion about the dangerousness of waste, and they have led to some doubts about the reliability of the information disseminated. Then, reporting methods and the radiological characterization of packages progressed. In 1979 Andra implemented a control system for packages based on quality assurance from the producer, to better know their radiological contents, and in 1984 and 1986 the basic safety rules tightened the criteria for packages acceptance.

This evolution shows that there is a benefit of other actors being present for the control and the inventory monitoring : the producer reports its waste, while the manager of the center and the safety authority must be able to monitor and identify the veracity of the packages contents declared by the producers. About the CLI, they have a role of citizen vigilance in this monitoring

process. The clear division of responsibilities of the producer, operator, controller, and the citizen, the plurality of views greatly enhance the quality of control.

The Commission Turpin stressed the need to keep the memory of the site. However it is hard to exactly know what was disposed of in the center. A storm caused the loss of part of the deposit slips. The bungalow where they were archived was flooded. The deposit sheets on waste from the first phase of operation have been rewritten afterwards on the basis of employees' memory - in the absence of other reliable data. Because of this loss of information Andra achieved at the end of the operation of the CSM, an important work to consolidate its inventory.

This example shows that a passive management, based on closure and oblivion, is hardly compatible with the maintenance of memory on the site and on what is stored, whereas memory is key to ensure security of future generations. Keeping the site memory refers to the support through which it will take shape and the sharing of information with local actors. Historical examples show that if paper is vulnerable, it is, in contrast, with the redundancy of information in several forms that memory can be passed from generation to generation. This CSM return of experience has been taken into account for the Centre de Stockage de l'Aube (CSA), which took over from the CSM. In general, sharing with the public knowledge about the nuclear waste in disposal supports ensures the transmission of a memory from generation to generation, and supports the regular update of the monitoring according to events. It also implies the maintenance of a capacity of action and monitoring.

### *Measures and closure*

Measures are an essential part of surveillance. At the CSM, the capacity to carry out certain measures was lost because of the closure of piezometers within the perimeter of the facility, which gave way to the coverage. Although piezometers outside the facility continued monitoring, there was a partial loss of capacity in the center environmental oversight since it became difficult to understand, from the outside, what happens under the cover, notably as regards the possible sources of ground water pollution.

If the origin of this closure was to protect and be protected from the storage content, the result was that the measures and therefore the monitoring of what goes on inside from the outside became impossible. Should one make a choice between protecting the site, with a maximum insulation, and keeping surveillance capacity by reserving a possibility of access? However, the CSM has not been constructed to be reversible, which is not the case of the disposal of high-level and long-lived waste. One of the issues raised concerns the maintenance of measuring equipment during a long period. How to maintain internal equipment in a prospect of reversibility (sensors, wiring, cameras, computer equipment, charging batteries, etc. ...)?

### *Evolution of standards*

The CSM was one of the first main storage of radioactive waste in France, following the end of sea filing. Indeed, it has built and supported the establishment of a doctrine of waste management, which was gradually strengthened over time, from an internal management by the

producer of waste to a standardized management by the public authority (a 1982 fundamental rule of safety set a maximum capacity of waste for the center). The regulations at the CSM have been regularly updated until its closure. The constant evolution of safety standards and control procedures at the CSM shows that the adjustment should be permanent. It is even more acute for even a long-term reversible facility. How to ensure that the standards of a waste management facility of high activity such as the one that may be in Meuse / Haute-Marne will be updated, in particular during the reversal phase? What possible adaptation of the site facing the future development of new safety standards, standards of workers and environmental standards? How to adapt technical and organizational devices to these expected evolutions?

### *The possibility of withdrawal*

The Commission Turpin said that the CSM will not return to nature in 300 years, because of the highly toxic and radioactive waste it contains (100 kg of plutonium, many chemical toxics, 20 tons of lead and a ton of mercury), and will not be reversible. The most dangerous waste being in the bottom, it would be necessary, to remove them, to remove all the upper and middle layers of waste. The Commission found that demolishing the structures in which packages were, would be an expensive project, financially and in time. Moreover, its impact on the environment and the staff would be much larger than if the storage was left in the state. No dismantling, even partial, was therefore expected, because of the risk of such an operation. Finally, there was no back-up storage solution for waste – they could actually not be accepted in the new CSA facility, because of its much stricter regulation. The question of the cost of the withdrawal, in financial terms but also environmental and health (measured against the estimated cost of such a maintaining) and the absence of an alternative to dispose of the waste has been the main considerations in choosing to retrieve or not waste.

### *The participation of local actors through the CLI*

The questions of the local population about the transition to a monitoring phase has been the source of the Commission Turpin. The Commission Turpin stressed in 1996 that, on waste, the role of local people, through local commissions, should be strengthened because of the length of the facility. *"The Commission should not only be informed, but also give its opinion (...). This does not relieve the administrative authorities of their responsibilities. Ultimately, they will accept or not the proposals of the ANDRA. It comes to force a dialogue. Indeed, we are in a case quite illustrative. The presence of waste means the presence of pollutants, and therefore, not as much a threat as a restriction that the population will assume for a very long period. The authorities must take into account the opinion of this committee. They may not follow it, but will have to explain."*

The CLI allows to obtain data on the history of the facility, inventory, incidents, actions in the environment and other elements allowing actors to follow the life of the facility and its impact. During the return of experience, local actors have stressed both the importance of this tool that is the CLI, and sometimes experienced difficulties in obtaining information. A question had also arisen about the role of the CLI during a public inquiry, in particular for the passage of the installation of a stage of operation to a stage of oversight or closure. This question is particularly

important in the case of a reversible disposal for which decisions can be taken at regular intervals on the maintenance of galleries, closure or packages withdrawal. What is the involvement of local actors and at what moment in the decision making process ? What role for the CLI, which control and visibility of the inventory tracking? What knowledge-sharing with local players? What discussion on scenarios to cope with standards new developments? All these issues have emerged in the feedback of the CSM and are important for a long-term and reversible site management.

**Annex 4**

***Reversibility in practice***

**The local actors' point of view**

Local actors' proposals

Cowam In Practice  
French National Stakeholder Group (NSG)

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The reversibility is included in the 2006 Law on the sustainable management of radioactive materials and waste as follows: “The disposal of radioactive waste deep underground is the disposal of these substances in a facility specially equipped for this purpose, in compliance the principle of reversibility.”(Article 5); “The Government presents

a bill establishing the conditions for reversibility.

After enactment of this law, permission to establish the center may be issued by government decree passed in the Council of State, after public inquiry. (...) The authorization sets the minimum period during which, as a precaution, the reversibility of disposal must be ensured. This period may not be less than a hundred years.” (Article 12)

Local actors are doubly concerned by reversibility.

☞ *By their statutory mission, Local Commissions and Committees have a role of vigilance and will be able to look after reversibility, i.e. maintaining a capacity of choice between:*

- 1. continuation of a reversible disposal,*
- 2. withdrawal of packages and*
- 3. closure of disposal.*

*This monitoring concerns as much technical aspects, as the legal, financial and decision-making dimensions associated with reversibility.*

☞ *On the other hand, the local actors raised the question of preparing the governance of reversibility within the 5 to the 8 coming years. What procedure to prepare this device? What contribution of citizens? How will this be taken into account in the decisions?*

---

The exchanges and discussions on reversibility developed by the pluralistic group *Cowam In Practice France* have helped to build a common understanding of issues and questions associated with this concept. The ANCLI requested CIP to expand the contribution of local actors and to organize two regional meetings in May-June 2008 (Bar-le-Duc, Flottemanville-Hague) and an inter-regional meeting in September 2008. These sessions have enriched the reflection of the French group providing feedback on two elements: the reflections of CLIS in terms of reversibility, the feedback of the operation of the CSM. On this basis, the territories of the Hague and Meuse Haute-Marne have also identified a number of proposals.

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In its recent opinion on the radio-ecological monitoring of water around the nuclear plants and on the management of older storage sites for radioactive waste (6 November 2007 opinion, [www.hctisn.fr](http://www.hctisn.fr)), the High Committee for Transparency and Information on Nuclear Safety (HCTISN) stressed the essential role of CLI in the continuous improvement of the nuclear sites management.

## 1. The obligation of reversibility: an opportunity to monitor and improve

For local actors, reversibility introduces an essential time frame to **maintain a capacity of choice** between three management options (continuation of reversibility, packages withdrawal, closure of disposal) and **influence the adjustment** of the management system **during time**.

To build a **practical reversibility**, locally operational, actors from local communities believe it is now important to negotiate **governance processes where local players have their place**.

The reversible disposal is made in a first time to **monitor and verify** what is put on the site - the **inventory** should be shared and discussed with local actors, and provide reliability and confidence guarantees necessary to these actors.

Reversibility is also an opportunity to **ensure that security is maintained**. More generally, it is possible to **determine the viability** of waste management options, to **question and improve them over time**. These questionings are related to the various pillars of reversibility: environmental and health monitoring, funding, accountability, local monitoring...

Reversibility only makes sense if accompanied by **oversight, feedback and evaluation** to be able to make an informed choice among the three management options. Through this monitoring work, the civil society will **develop**, and **maintain a critical and cautious look at the selected options**, in order to **take into account the ethical concerns of local communities** in the decision-making process. The local actors contribute to organise the return of experience in this perspective.

## 2. The preparation of reversibility

Local actors want the period by 2015 to be an opportunity to prepare reversibility. They want to focus as much on the technical aspects as on the governance framework that will support reversibility and translate this concept into a practical reality, able to provide technically, legally and financially a sustained capacity of choice.

In this perspective, local actors can offer their own vision of practical reversibility, and contribute to the reflections conducted by the various actors responsible for the development of concepts (technical and others) of reversibility.

A major concern is to ensure that the technical device is in line with the governance framework of reversibility. This requires a continuous dialogue between the different actors responsible for the practical implementation of reversibility now, without waiting for 2015.

Local actors involved in the CIP French NSG led a return of experience, on the one hand on the reflections of CLIS in terms of reversibility, and on the other hand on the CSM (Centre de Stockage de la Manche). The operation of this facility covers a period of 40 years. It is subject to constant monitoring by the operator, and the safety authority. A thorough evaluation was carried

out in 1996 with the Commission Turpin. In addition, local associations such as ACRO keep a close watch on the center and carry out their own measures. This monitoring highlights a number of issues concerning the long time that are particularly relevant to a generic reflection on reversibility (construction and memory of the inventory, environmental monitoring and oversight of the facility...). For Commissions and Local Committees, such returns of experiences are very useful tools to better understand the issues and practical conditions of reversibility. Sharing other cases on relevant experiences of success or difficulties is considered. We particularly consider cases such as the Dutch or German ones (Habog, Ässe ...).

The ANCLI wishes to facilitate exchanges and return of experience between regions involved in waste management in France and more widely in Europe. The exchange between these territories should enable local players to learn from each other about their concerns and establish their views and contribution. It must be continued with a dialogue with other stakeholders: operators, and other national institutional actors, to investigate the various aspects of waste governance:

- The decision-making process until the end of the reversibility period
- The waste inventory
- The monitoring programme
- The assessment of costs and monitoring of the fund management
- Memory and intergenerational transmission

The analysis and suggestions of local commissions and committees are set on each of these aspects in the following sections.

### **3. Decision-making process until the end of the reversibility period**

In its 12 October 2006 opinion, the CLIS of Bure hoped that a special attention would be paid to study the conditions of reversibility, and clarified that the starting point should be the date for a possible operation disposal and not the date of its authorization. This view was confirmed in the inter-regional and local meetings organized by CIP.

The implementation of reversibility involves regular meeting points between different stakeholders, including civil society, at local and national levels. These meeting points must verify that the ability to choose between three options (continuation of reversibility, withdrawal of packages, closure of disposal) is maintained in practice, i.e. that we are able both on technical, financial or legal aspect to make a choice as far as possible unconstrained between these options.

Local Commissions and Committees wish they could take an active part in monitoring this system of governance. They will ensure that legal, financial and technical resources are sustained and updated on a regular basis to maintain a genuine capacity for choice. They will also participate in the discussion when a choice between three options will be on the agenda.

### *Expertise, support to the decision*

In this context, Local Commissions and Committees stress the importance of access to expertise and training. Citizens must have access to the data produced by operators and government experts. Other forms of expertise must be mobilized to investigate issues raised by reversibility. Local Commissions and Committees may conduct counter-expertise or complementary expertise. Pluralistic expertises will be made on issues marked by differences or strong uncertainties.

As the stakes of reversibility are not only technical, expertise will cover a broad range of skills (legal, ethical, financial ...).

### *The role of Local Commissions and Committees over the medium-long term*

Local Commissions and Committees want to reflect on their role in monitoring reversibility in the mid and long term. The Commission Turpin had already stressed the role of Local Committees, on waste management, should be strengthened because of long-term facilities considered. *“The Commission should not only be informed, but also give its opinion (...). It does not remove the administrative authorities of their responsibilities. Ultimately, they are or not to accept the proposals of ANDRA. This is forcing a dialogue. Indeed, we are in a very illustrative case. The presence of waste means the presence of pollution, and therefore, not so much a threat than a constraint that people will assume for a very long period. The authorities must take into account the opinion of this committee. They may not follow, but will have to explain.”* How can Local Commissions and Committees monitor the implementation of reversibility, from one generation to another? What devices and points of engagement will ensure the inclusion of their opinions?

### *What organization for the local territory on risk and development issues?*

The feedback made between players of the Meuse Haute-Marne and North Cotentin regions highlighted the fragility of citizen participation on the issue of waste. More than on any other subject, the fact to have a vigilant citizen oversight is often perceived as an attitude of distrust against any waste management project. On the contrary, attention to development projects that go with the establishment of a site is analyzed as a sign of overconfidence. These shortcuts, and the divorce between a rationale of development and a rationale of vigilance are counter-productive, and weaken further the participation of local citizens who should be able to legitimately contribute to the reflections on the future of their territory, and look at all aspects associated with a facility siting. Local Commissions and Committees propose to carry out a reflection on the conditions for successful involvement of the local communities combining development and a capacity of vigilance.

#### **4. Control instruments and inventory oversight**

What guarantees and sustainability does the inventory provide? A clear distinction between the responsibilities of waste producers, the operator of the management site and the safety authority enhances the quality of the inventory. The history of CSM has demonstrated the importance for the inventory to be declared and controlled by different bodies. The inventory gains in reliability and transparency.

Since waste will be on their territory for a long term period, it is necessary for local actors to know what goes into the disposal.

The involvement of local actors in the inventory control and monitoring does not replace the responsibility of the producer, operator and safety authorities, established by the two laws of June 2006 on transparency and nuclear safety, and on the sustainable management of radioactive materials and waste.

This oversight will strengthen the sustainability of the memory on the site and what it contains, and the confidence that local players can have in the technical devices used to manage the waste.

#### **5. Site monitoring program : the environment and health**

In the framework of the French NSG, members of Local Commissions and Committees have shared an understanding of goals and challenges of a surveillance program of a waste management facility, in the perspective of reversibility.

This monitoring involves both the environment and health impact, and the site itself, to maintain a capacity of reversibility.

Local Commissions and Committees should be able to contribute to the *definition* of the monitoring program. They may give an opinion on the institutional experts' proposals, and may make additional proposals from the local actors' viewpoint, if they deem it necessary.

Local Commissions and Committees will follow the *implementation* of monitoring plans. Scheduled meeting points will have to be organized so they can verify that surveillance is adequately ensured, and propose adjustments if necessary. Local Commissions and Committees will also monitor and evaluate corrective actions, set up after the detection of a problem.

Commissions and Local Committees' oversight is complementary to internal controls, conducted by the operator, and institutional external control (safety authorities, external audit). It is conducted for the territory, with local actors, with the direct objective to answer their questions.

On the monitoring of the site and the environment, as on the control and monitoring of the inventory, it is interesting to note the recent recommendation of the High Committee on Transparency and Information on Nuclear Safety (HCTISN): *The High Committee recommends*

*that operators of older radioactive waste storage facilities regularly present to the Local Commissions (CLI) the inventory of stored substances, the results of their environmental impact monitoring, the measures implemented to reduce their impact and time involved, and that a dialogue between stakeholders is conducted around these sites.*

## **6. Cost evaluation and monitoring of the fund management**

Discussions on reversibility in CIP have highlighted the difficulty to estimate the costs of waste management. It is indeed difficult to assess what is still partly at the level of concepts, particularly as reversibility introduces a dimension of choice, and therefore an unknown part for our generation.

The 2006 Law provides a structure for financing research, construction, and storage and disposal operations. It strengthens the transparency of resources dedicated to waste management. However, these funds do not cover the potential withdrawal. This lack of specific funding for the withdrawal weakens the credibility of the reversibility concept.

Despite - or because of - the unknowns that surround the waste management method, it is therefore necessary to consider now the evaluation of future costs: disposal solutions costs, reversibility costs, particularly cost of the withdrawal, management provisions, etc...

How to keep over time a fund away from financial uncertainties? Once the budget for waste management is defined, it is necessary to ensure that resources are well managed, maintained and adapted to circumstances if new needs are there. Thus, Local Commissions and Committees would also join in discussions on the mechanisms of monitoring that will ensure the adequacy, the good supply and good management of these funds. They will ensure that funding arrangements will guarantee a capacity of choice between three options constituent of reversibility (continuation of a reversible disposal, withdrawal of packages, closure of the disposal).

In any event, the cost associated to the disposal and its reversibility should not ultimately invalidate any alternatives options, neither fall on the hosting communities' charge.

## **7. Memory and intergenerational transmission**

The preservation of memory around the disposal site is essential. Many reflections are conducted to promote a transfer of memory on a passive way to overcome a possible period of oblivion. In a prospect of reversibility, the local actors insist on the need for active memory, only capable of maintaining a capacity of control and choice from one generation to another: how to give meaning to information and memory so that future generations are involved in risk management? How to pass from the information to the value?

One factor to keep a memory around the site is the existence of a social life. Can economic life be

a factor to enhance memory and vigilance of the area? As mentioned above, there is a risk of polarization in the communities between actors whose vision is only focused on risks, and actors who are only concerned with community development. A reflection must be undertaken on how to integrate development and vigilance in order to promote local dynamics able to sustain a vigilant oversight.

**Annex 5 – References of Research Briefs prepared in CIP, elaborated and /or discussed in the French NSG**

C. Reaud et al. *Aspects of Governance in the Practical Implementation of the Concept of Reversibility for DeepGeological Disposal, results of a cooperative research carried out in the framework of the French CIP group, D2-3 C*

R. Wylie et al., *Defining an Affected Community, D2-3 D*

E. Laes et al., *Belgian case study : local partnerships for the siting of a LILW repository, D2-3 A*

S. Baudé et al., *Contribution of the local communities to safety and radiation protection around radioactive waste management sites, D2-5 D*

C. Mays et al., *Participatory assessment of decision making process, D2-5 C*

Ces documents sont disponibles à l'adresse :

<http://www.cowam.com/>