Radioactive Waste Management

Radioactive Waste Repositories and Host Regions: Envisaging the Future Together

Synthesis of the FSC National Workshop and Community Visit Bar-le-Duc, France 7-9 April 2009

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FOREWORD

The 7th Forum on Stakeholder Confidence (FSC) National Workshop and Community Visit was held on 7-9 April 2009 in Bar-le-Duc, France. It was organised with the assistance of the CLIS (the Local Information and Oversight Committee of the Bure Laboratory) and the financial and logistical support of Andra, France's National Agency for the Management of Radioactive Waste. Amongst the participants were representatives of local and regional government (including six mayors and numerous local elected officials from five countries), civil society organisations, universities, waste management agencies, institutional authorities and some 20 FSC delegates from 13 countries and the European Commission.

The workshop focused on the territorial implementation of France's high-level and long-lived intermediate-level waste management programme. Sessions addressed the French historical and legislative context, public information, reversibility, environmental monitoring and the issue of memory. The workshop also included a visit to the site of the underground laboratory located at Bure-Saudron, a reception by the Mayor of Bure and a dinner debate with the president of a local industry organisation.

The synthesis is provided under the responsibility of the NEA Secretariat. It relies on verbatim notes taken during plenary sessions and accounts by assigned delegates (with thanks to Andra and to the Chairs of the round-table sessions). This synthesis has also been supported by the presentations and manuscripts kindly provided in good time by all the speakers. All these documents, in French or in English, are accessible online through the FSC web page (www.nea.fr/html/rwm/fsc/).

The editorial team at the NEA was comprised of Claudio Pescatore, Claire Mays and Kristin Sazama.

Acknowledgements

The FSC wishes to thank the numerous French stakeholders who contributed significantly to the success of the workshop.

The FSC gratefully acknowledges the programme committee participants:

- CLIS: Robert Fernbach, Jean Coudry, Roland Corrier and Jean-Marie Malingreau, with the assistance of Benoît Jaquet.
- Andra: Bernard Faucher and Gérald Ouzounian, with the assistance of Marc-Antoine Martin.
- NEA: Claudio Pescatore and Claire Mays.

Benoît Jaquet, CLIS Secretary, and Bernard Faucher, Andra International Affairs, attentively proofread the manuscript.

TABLE OF CONTENTS

INTRODUCTION TO THE WORKSHOP

The initial welcome statement was given by Mr. **Peter Ormai**, from Hungary, who spoke about the previous workshop held in Hungary, in 2008.

The workshop was then officially opened, first by Mr. **Uichiro Yoshimura**, Deputy Director for Safety and Regulation of the OECD Nuclear Energy Agency, who thanked the assembly, retraced the history of the Forum on Stakeholder Confidence, and then gave general objectives for such a workshop. It is not principally a technical colloquium but instead, a possibility to gather new insight on different perspectives and views. It is a good opportunity for learning together. The workshop aims to include all stakeholders and contribute to developing dialogue and improving confidence about management solutions. These efforts support the vision of the OECD as a whole, whose advice to governments is to view citizens as partners.

Mrs. **Nelly Jaquet**, Mayor of Bar-le-Duc, in the Meuse district, then spoke first about the workshop host city of 17 000 inhabitants, inviting delegates to visit the historic centre whose architectural patrimony is classified as "remarkable". She went on to talk about the future of the region and the potential impact of a repository, arguing that the host districts should take an active part in the necessary research and development. Local stakeholders particularly desire institutional guarantees for safety and for continued central responsibility over the generations, rather than devolution to territorial actors. The mayor highlighted the fact that the repository will play a role for tens of thousands of years, while human society and current ideas change and evolve much more quickly.

Mr. **Michel Jubert**, President of the Chamber of Commerce (CCI) of the Meuse district, spoke about the district whose industry is centred on metallurgy, agriculture and forestry. He characterised the Meuse inhabitants as highly attached to their green environment. Mr. Jubert stated that the CCI supported the disposal project as a matter of taking responsibility for the benefits of nuclear electricity, and said that reversibility was a key component as future scientific progress may provide new ecological and safer solutions.

Mr. **Gérald Ouzounian**, Andra Director of International Affairs, thanked the delegates and the participants from the Meuse and Haute-Marne districts for their presence on behalf of Mrs. Marie Claude Dupuis, Andra's CEO.

Mrs. **Janet Kotra**, President of the FSC, described the FSC work, and insisted on its links to the creation of a space for dialogue and collaborative learning. She then voiced her hopes that this important workshop encounter would be positive for all involved.

THE FRENCH HISTORICAL CONTEXT

The French institutional framework and the main actors

Mr. **Gérald Ouzounian** listed the different actors (Safety Authority, CNE, Andra, local stakeholders, etc.), and went over the waste classification, before mentioning the main dates associated with the repository project, and more specifically those related to the 1991 Waste Act and the 2006 Planning Act. He described the contents of these important documents, key to understanding the French framework related to this subject. He spoke about the French territorial administrative structure (in descending order: regions, districts, cantons, communes or townships) and then described the "transposition zone" around the Bure-Saudron underground research laboratory (URL). Finally, Mr. Ouzounian presented the "stepped-up" timetable for decision making from the 2006 Planning Act, insisting on the clear framework (legal and institutional) that exists for these to be taken (see Box 1 below).

Box 1. **Near-term decision making in France**

The Planning Act of 2006 ackowledges that Andra has demonstrated that the characteristics of the Callovo-Oxfordian formation in the Meuse/Haute-Marne area (of which Bar-le-Duc is the main town) are appropriate, in principle, for the geological disposal of high- and intermediate-level long-lived radioactive waste. A so-called "transposition zone" covering a surface area of 250 km² has been identified, i.e. the zone in which deep geological conditions are similar to those studied in the Underground Research Laboratory (URL) at Bure-Saudron.

At the end of 2009, Andra is to present to the Government suggestions for implementing major aspects of the project: facility design, operational and long-term safety, provisions for reversibility, and provisions for intermediate storage to complement final disposal activities. More precisely, Andra shall also identify a smaller, 30 km^2 zone, within the transposition zone, where more detailed geological surveys will be carried out for identifying where exactly the underground installations of the repository may be built. This smaller zone is called "ZIRA" (Zone d'Intérêt pour la Reconnaissance Approfondie). Andra is going to take into account the requests from the local representation in formulating its proposals for the location of the surface and underground installations, and also in particular the ones regarding the concept of reversibility.

A public debate in the Meuse/Haute-Marne is also slated to take place in 2013, to be organised and run by the National Commission on Public Debate (CNDP), as is done for other major infrastructure projects in France. To feed this debate, Andra is requested to submit preparatory public information on the project to the CNDP mid-2012.

Following the public debate, the public authorities will confirm the location of the repository footprint, and will select the surface area from which the access to the repository will take place, including where the surface installations would be built, and will start the process for implementing a repository. A "Reversibility Act" detailing the reversibility conditions will be discussed and voted (by 2015) before any repository licence is granted. The geological repository would start operation by 2025, if all authorisations are granted.

Regarding economic development, there is already a specific priority area corresponding to a circle of 10 km radius centred on the present URL. Future provisions concerning the repository are to be defined. Nevertheless, municipalities located in Meuse/Haute-Marne outside this specific circle but inside the so-called proximity zone are already benefiting and should benefit further from economic and development packages and initiatives, e.g, through the GIPs (see Box 2).

The historical background of the French programme

Mr. **Bernard Faucher**, of International Affairs at Andra, gave a detailed insider's account of the siting of the URL at the Meuse/Haute-Marne volunteer location. He first highlighted the context of the 1991 Waste Act (the Chernobyl catastrophe in 1986, the original site search of 1987-1989, on purely geological criteria, followed by the hearings conducted by MP Christian Bataille) and pointed out that the 1991 Act was the first law in France regarding the nuclear industry. He then went on to retrace the 1991-1998 events prior to the August 1999 decree that authorised Andra to proceed with the construction of the URL at Bure-Saudron:

- The positions adopted by the local actors and municipal councils in the different "communes" (towns and villages) or groups/syndicates of "communes" (such as the SIVU in Meuse).
- The various actions by stakeholders for and against the construction of the URL.
- The details of the ongoing national process that led to the 1998 decree.

Mr. Faucher recalled the SIVU's resolution accepting the URL if it was solely for research, if studies and investigations would concern exclusively reversible disposal and if the environment was protected. The Permanent Environmental Observatory is a reminder of this latter request. Cheese (and therefore the local production of "Brie de Meaux" for instance) is culturally as important as wine in the French context and so preserving the quality of milk is a key issue.

Mr. Faucher's past role in directing siting feasibility studies in Meuse/Haute-Marne allowed him to recognise the particular contributions that were made by elected and administrative actors, Andra employees and other individuals.

Mr. **Jean Marie Krieguer**, Andra Project Manager, spoke of the French high- and intermediate-level, long-lived waste disposal project. He described the overall schedule for this project, the parallel work on design of the repository and on the site selection work. In December 2008, Andra detailed the favourable characteristics that research shows and that are shared by the "transposition zone" of 250 km² around the URL. Within this zone, a smaller area of about 30 km² will be even more finely characterised. There is some flexibility in localising this underground area. Moreover, since the surface installations of the repository can be located some distance from the underground part, this adds even more flexibility in siting the surface ones, which are visible to local habitants and with which they must live. The surface site must be defined by consulting local stakeholders, taking into account historical, cultural and environmental features.

Mr. Krieguer then spoke about ongoing research on storage and about demonstration materials (e.g., prototypes of various machines and equipment) that will be displayed to the public in the new "Technological Exhibition Facility" located in Saudron. An environmental survey started in 2008 provides a baseline reference notably for local flora and fauna, and will be followed by an Ecotech through the end of the operational project period. He pointed out that monitoring is very important to enable reversibility, as it provides essential information on the engineered facility and its performance.

Mr. **Jean Coudry**, Board Member of the Local Information and Oversight Committee (CLIS), spoke on behalf of Mayor Robert Fernbach, Vice-President, about the structure of the CLIS and its mission, resources and activities up until 2008. He then described the new CLIS whose mandate was extended in 2006, and which alongside its traditional representation includes elected representatives from all communes concerned by the transposition zone (see Box 2 below). The "CLIS 2" is currently bringing new members up to speed and forming several working groups on such issues as communication with the public and reversibility. Mr. Coudry mentioned that opposing members withdrew from the CLIS to signal protest of

the choice (by the presidents of the two districts' elected General Councils) of its chair. The competence of the chair is not contested, but "that the person who is at the origin of the law in favour of disposal be named chair is considered by these stakeholders to be an obstacle to neutrality".

Mr. Coudry called for the future economic interests of the volunteer Meuse and Haute-Marne districts to be as well guarded as they are currently. The two districts have different economic contexts, the operating repository will be much larger than the URL and the question is open as to how benefits, direct and indirect, can be shared in an equitable manner. Mr. Coudry ended by detailing the means by which the CLIS fulfils its active public information role.

Box 2. **The CLIS and the GIPs: important actors under the June 2006 Planning Act**

The CLIS, the Local Information and Oversight Committee (Comité local d'information et de suivi)

In accordance with the provisions of the December 1991 Waste Act, the CLIS was first set up in 1999 at the time of the licensing of the URL. Following the June 2006 Planning Act, a renewed and modified CLIS has been operating since mid-2008. The Committee is constituted of 91 voting members from the Meuse and the Haute-Marne districts. The different levels of elected representation are covered; these include national Parliament, the General Council of each district, the municipal councils of 29 towns or villages in Meuse and 18 in Haute-Marne, the Regional Council of Lorraine (within which Meuse is located) and that of Champagne-Ardenne (within which is found the Haute-Marne). Thirteen professional chambers or unions (including the Order of Physicians of both districts) each send a representative to the CLIS. Seven civil society organisations have a seat, four of which declare their opposition to the geological disposal of radioactive waste. Four qualified experts sit on the committee, including a radiation therapy physician and a geologist. State authority is represented by the Prefect and a DRIRE[1] representative of each region. The national nuclear safety authority, ASN, and the implementer, Andra, each have a "consultative voice". A secretariat of three persons supports the CLIS. The CLIS chair is appointed by joint decision of the two Presidents of the General Councils of the Meuse and Haute-Marne districts. The full CLIS must meet at least twice a year. A smaller executive bureau and working groups meet more often in order to prepare the full CLIS meetings.

Under the Planning Act of 28 June 2006, the CLIS mission is to allow its members to:

- Obtain the maximum of information on research in the area of management of radioactive waste and, particularly, its disposal, from the relevant institutional actors as well as from external experts (the CLIS manages a budget of its own and and for scientific issues can also call upon the National Review Board).
- Follow-up, with expert help, the evolution of knowledge in the domain.
- Bring the information in accessible form to the public.
- Gather the maximum of data (environmental, epidemiological…) that can serve as reference points in the future.
- Ensure dialogue and debate.

The CLIS fulfils its missions through meetings with experts (lectures, colloquia, seminars) open to the public and media, and through public information using appropriate instruments such as posters, mailings, newsletter, and announcements in the press and on local radio. A staffed documentary centre is situated in the village of Bure, containing a diversity of publications and reference works by the CLIS as well as by technical stakeholders and outside sources. The Committee's website, www.clis-bure.com, includes a detailed "FAQ" section, as well as the calendar of activities, audio comments by a variety of CLIS members, the text of the two national Acts (1991 and 2006), etc. CLIS members build competence through training activities and relevant site visits in France and abroad. The CLIS is currently preparing its own work programme including specific working groups.

1. DRIRE: Regional Directorate for Industry, Research and Environment.

Box 2. **The CLIS and the GIPs: important actors under the June 2006 Planning Act** (Cont'd)

The GIPs, Public Interest Groups (Groupements d'intérêt public)

In the year 2000, according to the provisions of the December 1991 Waste Act, a separate Public Interest Group (GIP) was set up in both the Meuse and the Haute-Marne districts. Each GIP's mission was, and still is, to favour the economic development of these districts, through partnerships with the State, territorial and local communities, and industry. The funded projects centre on improving the districts' infrastructure (roads; urbanism; services and communications equipment, heritage) and on supporting economic activity (business and industrial parks, productive and environmental investments, training and R&D, grants and loans).

Each GIP is chaired by the President of the respective General (district) Council at the head of an 8-member governing board that names the managing Director of the GIP. Besides its President, the other members of the board include the Director of the DRIRE of the relevant region, the President of the Regional Council, two General (district) Councillors, Andra, Electricity of France (EdF), and one representative of the ensemble of the villages' councils that, historically, were the ones concerned by the public inquiry of the Meuse/Haute-Marne URL. These 33 villages (17 in Meuse and 18 in Haute-Marne) are situated within the "historic 10 km zone" around the URL main access shaft and have received benefits from the very beginning. As of 2007, the GIPs' area of specific action was extended (June 2006 Planning Act) to a so-called "proximity zone" including some 300 towns and villages in the two districts.

From 2000 until 2006, each GIP managed an annual budget of approximately M€9.1. Waste producers' cash contribution was the first source of these monies (M€6.86); the remaining funds were provided through consultancy and direct investments by EdF (M€1.52) and SODIE (K€760), a regional development agency. Since 2007, under the provisions of the June 2006 Planning Act, the annual resources of each GIP are provided by an "accompaniment tax" (M€11) and a "technological diffusion tax" (M€9), totalling an annual budget of around M€20 for each district. These taxes are paid by nuclear installations that produce high- and intermediate-level long-lived (H&IL LL) radioactive waste (NPPs, spent fuel processing plants, CEA facilities with reactors, etc). Since 2007, the historic 33 villages are provided with a direct GIP grant to their budget based on some €450 per year and capita. Infrastructure and other projects are funded separately, in competition with other projects in the other parts of the districts.

Mr. **Eric Chagneau** and Mr. **Jean Masson**, Director of the Public Interest Group (GIP) for the Meuse and for the Haute-Marne districts respectively, described their work:

- The structure of each GIP and its role of analysing and supporting a wide range of projects to enhance the development of economic activity in the relevant district.
- The amounts invested during the 2000-2006 phase: approximately 18 M€/year for 6 years, for an overall population of 380 000 people.
- The impact of the 2006 Planning Act: the amounts available for investment are increased to 22 M€/year (infrastructure projects) and 18 M€/year (other projects).
- The new missions and the new composition of each GIP (see Box 2).

The GIP Directors described their efforts to foster influx of projects to their districts; for instance they encouraged the waste producers Electricity of France and AREVA to locate new industrial and administrative activities in the districts.

Questions and comments

- Links between the GIP and the CLIS. Although these are different structures (district-level vs. level of the transposition zone; administrative unit of government vs. purpose-made council; mandate to increase economic viability of the host districts vs. mandate to oversee the technical work and assess impacts, etc.), they exchange information nonetheless.

- The fact that the GIPs and their links to the URL are not well known: this is true and funding beneficiaries have been asked to display a label “Economic accompaniment of the Bure-Saudron URL” to better convey the fact that the source of this economic and cultural development for the districts is the current nuclear waste management activity.

- The rationale on identifying a smaller 30 km² area, ZIRA, within the 250 km² transposition zone: the smaller zone is needed to accomplish detailed reconnaissance, and is also needed to help the discussion with local stakeholders.

- On the public debate and its links to future milestones for the repository: the public debate procedure was introduced in France a few years ago and is required for all major infrastructure projects. The procedure states that the debate must answer a specific question. The debate in 2005 was at a national level, and will be at a district level in 2012-13.

LOCAL PUBLIC INFORMATION

The CLIS public information programme and the survey by the CLIS on the population's expectations

Mrs. **Laëtitia Colon**, scientific secretary of the CLIS, spoke about how the committee has carried out its major mission of communication since the early 2000s. Headquarters are a staffed public reading room in the renovated, historical wash-house at Bure, where documents by the CLIS and many other sources are collected. The web site presents the organisation and minutes of each meeting as well as FAQ and other documentary resources. The CLIS holds public meetings and colloquia, which are reported by local journalists. The CLIS Newsletter, a 2-4 page paper document, is distributed to the 170 000 mailboxes of the inhabitants of the local townships two to three times a year. Use of these different media was improved and adjusted following an impact study in 2005, in which it was found that the population did not necessarily distinguish the CLIS from the implementer. Flyers improve CLIS visibility. Mrs. Colon reviewed the expectations of the local population for the new CLIS, from a survey undertaken in 2006. The most highly ranked roles for the CLIS are 1) public information, including on risk assessments, and 2) monitoring of environment and health.

Consideration of other actors, organised and non-organised

Mr. **Roland Corrier**, Meuse General Counsellor and CLIS Member, spoke about defining the stakeholders associated with the repository project. He listed the various actors: Andra, waste producers, the GIPs, the National Review Board, the local stakeholders (General Council at the district level, townships and syndicates of townships), the local populations, and the plural chamber constituted by the CLIS. He insisted on the CLIS' role of information and monitoring at the crossroads of all these stakeholders.

Mr. Corrier pointed out that the economic, health-related and ethical risks linked to the multigenerational H&IL LL waste repository project imply that governance has to go farther than the usual representative democracy or than occasional encounters between experts and civil society representatives. He recalled the population's rights as guaranteed by the Aarhus Convention (access to information, early and effective participation in decision making, access to justice).

Mr. Corrier stressed that the calendar imposed by the 2006 Planning Act limits the ability of citizens to enjoy those rights; he suggested that significant resources should be devoted to organising multi-stakeholder forums for development and sharing of knowledge. He then read from a 2005 letter written by Mr. Jean-François Renard (Vice President of the Meuse General Council until 2001) to the Meuse district Prefect (State representative). This recalled the conditions set in 1993 by the Meuse General Council at the time of volunteering for the URL, regarding information and exchange on the project and also on the associated economic measures. Some of these demands are still not met, putting elected people in a difficult position. The letter, and Mr. Corrier, urged that an intensive citizen consultation process be set up, and suggested that a mediator with impeccable local credentials could help assure the interface between local concerns and national decision makers. The topic of reversibility in particular today calls for a significant effort of information and debate.

Andra's public information programme

Mr. **Sébastien Farin**, of Andra Communication Department, spoke of the public information and consultation programme that Andra has developed. This covers all the administrative units in the "proximity zone", any part of whose administrative territory is situated inside the "transposition zone". After recalling the legal and geographic context, he spoke of the various means set up by Andra:

- The COESDIC expert committee, including social scientists, meeting five times a year to assist Andra in defining its approach to public information and consultation.
- The publications, URL site visits, "open house" days, and information exchange that are made available for the public.
- The Technological Exhibition Facility located in Saudron close to the current URL, with its opening due in June 2009, where local populations and visitors will be able to see the demonstration of various technologies associated with the repository.
- Andra's contribution to the national "science festival", which included a simulated URL opened to the public in partnership with the Palace of Discovery science museum in Paris.

A mobile exhibit of 20 panels, soon to be circulated among local town halls, will explain repository features and the project calendar. Andra employees will be on hand to answer questions. Specific meetings are organised with local and regional elected officials and with economic actors.

Mr. Farin stated that two or three scenarios for the effective localisation of the repository would be developed in 2009 as a discussion basis with the local stakeholders in preparing the 2012-13 public debate.

Questions and comments

In response to audience questions and comments the workshop learned that:

- A need for a local mediator has not been discussed in the CLIS. The CLIS itself plays a mediating role. However, some mayors stated in the last General Assembly of the CLIS that they do not feel competent to carry out the role of mediator in their home communities. Training and support are needed.
- The CLIS survey showed that local people want more information about economic development linked to the waste management project. It would have been interesting to know if they were asking e.g., "what is funded?" or "who is taking the decisions and how are they framed?". However, the CLIS survey did not yield finer detail on this question.

Round-table discussions

Following the standard methodology of FSC workshops, delegates then broke up into six round-table groups, mixing stakeholder roles and nationalities. They discussed the following general questions taking into consideration both the specific French context, and the experience of international delegates:

1. What information is key to the local population to support their discussions and decisions?
2. What sources do the local population use? Are the sources trusted and sufficient?
3. What is expected of international institutions in terms of providing information?
4. How to deal with different levels of understanding and interests amongst the participants in the process?

Returning to a plenary session, each round table presented a summary of discussions.

What information is key?

Overall it was found that the content of information desired by local populations differs according to phase of the decision process, distance from a potential site, decision making role, and cultural context. Populations close to an effective site want information regarding major and minor impacts affecting themselves and the next few generations. The community is interested – or should be – in knowing how daily life may change over time, how the community may change in nature in the next hundred years or so, and whether preparations are being made for this.

The potential impacts range from construction inconveniences to emergency preparedness to long-term health. Amongst the socio-economic concerns are the availability of new jobs and investments, and the development packages that may be provided (or negotiated). People also ask about protecting the value of their home and property. Some FSC foreign delegates, representatives of local stakeholders in their country, pointed out that the economic questions are key – impacts can be positive as well as negative – and they urged their French counterparts to actively follow these up.

Some observed that special competence is needed to grasp information about radioactivity, and there is often confusion between categories of waste. It was suggested that long-term safety and the details of the safety case seem not to be primary concerns of local populations. However, Japanese delegates pointed out that safety can be a major question among local people who remember accidents in other contexts. Swedish stakeholders spoke of the Environmental Impact Assessment process, which their affected communities have used to review many such questions in detail.

Round-table groups agreed that it is important to provide information on the process of decision making and review, as well as procedures that may be open to communities to get details, to negotiate their interests or to bring their concerns into the discussion. Such process-related information is of great importance to elected people. Indeed, some round tables suggested that engagement of stakeholders in the decision process should the primary focus, and the type of information needed to support local understanding and buy-in would then be identified.

From which sources?

There needs to be an acknowledgement that each stakeholder has different information needs and trusts different sources. In the European Union, surveys find that scientists have highest credibility and the nuclear industry least credibility. Furthermore, people may prefer hearing from individuals who are like them in some way, whether culturally (another local person, a woman, a member of ethnic group, or a familiar leader/counsellor) or in terms of opinion (“for” or “against”). Authorities should be sure to provide important information to a wide range of relays. It’s especially important that anyone who wants to get information can find it. A range of media should be used as well to reach people. Demonstration centres are useful to give a concrete idea.

Local citizens’ working groups should transmit information and they will need adequate support to find and generate information to meet local needs. An especially effective format is for these groups to hold public workshops during which they ask the hard questions of implementers and authorities. This is useful to demonstrate on the one hand that the questions require more than a “yes or no” answer, and on the other hand that local representatives are keeping an eye on the process.

There is an issue of “who chooses the experts”. Some felt that the concerned region should designate expert informants, whose role could be supported by waste funds but who should not be hired and paid by the implementer. Or this could be handled as in Switzerland, where the implementer Nagra paid for a professional study requested by three communities on socio-economic and ecological impacts. In Sweden, implementer SKB has paid for studies as well but importantly, it is municipal representatives who have shaped the terms of reference.

Constructive confrontation among viewpoints can be useful, as in a technical forum including the regulator, the implementer, and environmental groups. Switzerland provided an example of high-visibility international review. Questions and documentation were placed on the open web.

Several round tables pointed out that the regulator, in principle a neutral public trustee and "on the side of safety", is appreciated as a source of information. Delegates were interested to learn how the French safety authority (ASN) has played its role during the URL period. The French regulator is institutionally independent since 2006. It had no specific local mission on the URL, although it had an important role in reviewing Andra's URL file application and later the Dossier 2005 concerning the feasibility of geological disposal. ASN's visibility is notably increasing for the coming phases. The National Review Board (CNE) created by the 1991 Act also has a strong review role and some delegates suggested that Andra should communicate locally about these existing checks and balances.

What is expected of international institutions?

The main role of international agencies is to enhance confidence in national regulators and implementers. Namely, the agencies can increase credibility by reviewing and challenging information by national organisations. They can also benchmark good practice regarding e.g., safety standards and decision processes, and review the national approach in this light.

It is important for local communities to be able to learn about what is done in other countries, from international counterparts and officials. While visits abroad may not be feasible for a large number, local representatives can bring home their experience. Visits to the home locality by international representatives confer a sense of pride on local populations and, like the FSC workshop, these can offer a neutral dialogue forum.

How to deal with different understandings and interests?

It is impossible to design information for every single need, but at least it should be presented in vocabulary understandable to all. Waste managers should remember that laypeople are experts of their local life and avoid embarrassing people by delivering overcomplicated (or oversimplified) information. Information of all types should be available, and managers should not decide by themselves what people "should want" to know. Delegates recognised that scientists often lack training in communication and they should benefit from this.

Today's youth are an important target for information as they will be tomorrow's decision makers. Informants have to reach out to them using their own new media. Similarly, grassroots work is needed in communities that may have little familiarity with the issues. The role of facilitator or mediator, capable of centralising and translating information, is worth looking into (this is being done by the ARGONA radwaste governance project in the European Union). In this respect, partnering with local authorities is most important. Waste managers should help elected people, civil servants and working group members show their local population that they are doing their job. These authorities know local needs best. They need training to be able to play the mediator role, and time to keep themselves informed as well as to go into the field and speak with local people. They also need appropriate large spaces to conduct meetings and place exhibits, for instance.

French delegates spoke in detail about dialogue regarding long term safety issues and scientific aspects. The key word is "relationships" – local authorities have to go out and meet people, to hear their concerns and their fundamental assumptions about risk, uncertainty and safety. These will shape the way an individual hears expert information (some judge most credible a scientist who says "I am not 100% sure", but this statement may mean something unacceptable to a different person who is looking for

100% safety assurance). Usefully, the General Council of one district collaborated with town halls and technical schools to organise a series of training lectures. Ninety people attended the series and chose the subjects, which focussed on radiation risk. They may act as reference persons, “trained people of good judgment” to whom community members can turn for a trustworthy opinion. Still, however, a comment was heard that the legal timetable of decision deadlines is too hasty to allow information and dialogue to spread among the several tens of thousands of people living in the area.

REVERSIBILITY: EXPECTATIONS AND MOTIVATIONS

The historical and political interpretation of reversibility

Mr. **Jean-Michel Hoorelbeke**, Andra Deputy Director for Projects, reviewed the French demand for reversibility from its first appearance in the 1991 Waste Act. This feature was a central issue in siting hearings for the URL. In 1998, the National Review Board (CNE) and the government provided opinions on reversibility and Andra also held an international workshop presenting its operational approach: a repository design that would allow waste packages retrieval if desired, coupled with management stages implying political decision. By 2002 Andra understood the political demand as one for progressive decision making with flexibility for future generations (possibility to check or retrieve waste packages or to prolong the observation period). Reversibility is seen as a factor of design creativity. In its 2005 Dossier, Andra detailed stepwise concepts allowing reversibility (with monitoring) for a period of up to 200-300 years. Reviewers have agreed that reversibility can be assured during operation for at least 100 years.

Reversibility is not a technical requirement, but a societal demand to which technologists must respond, taking into account material constraints and making their proposals understandable to the public. Further applied research and its review will inform the Reversibility Act slated to be issued by Parliament in 2015. Interim storage is positioned as a method complementary to underground disposal, notably for potential future phases of retrievability.

The views of the National Review Board (CNE)

Mr. **Pierre Bérest**, CNE member and professor at École Polytechnique, stated that the CNE, renewed by the 2006 Planning Act, has a single mission. It reviews all works carried out in the field of radioactive waste management studies, which means therefore reviewing the investigation works conducted by Andra and the Commissariat à l'énérgie atomique (CEA). It reports each June to the Parliamentary Office for the Evaluation of Scientific and Technological Choices (OPECST). The latest review of reversibility by the CNE dates to 1998. Mr. Bérest recalled the basic principle of stepwise decision-making stated at that time: each step requires a political decision to move forward, pause or move backward, if a net advantage for society is found. Arguments in favour of reversibility are: possible future scientific advances (partitioning and transmutation); future economic needs (recovery of fuel resources); observed risk or safety failure (including the need to withdraw a wrongly accepted faulty waste package), and the ethical need to leave options open. The CNE gave great weight to the notion that the public has to be convinced of the quality and robustness of the repository before any definitive decision, this demonstration needing time.

Mr. Bérest highlighted the potential contradiction between safety and reversibility. A repository remaining open could become altered, or society in the interim could lose the ability to close it. Andra has thus proposed a scale of reversibility showing diminishing ease of retrievability and increasing passive safety over time. Further CNE findings are: the term of reversibility must be stated at the outset; the public and workers must benefit from at least the same level of radiation protection as that afforded in the case of a nuclear power plant; reversibility must not render a repository any less safe. Ending with a quotation from Thomas Jefferson, Mr. Bérest highlighted the need to inform by education the "wholesome discretion" of the people to exercise their control of societal decisions.

NEA working group on reversibility

Mr. **Claudio Pescatore** suggested that reversibility is ultimately the ability to trace back the steps that allowed the construction and operation of any engineered structure. Historical examples can be given of the de-construction of facilities and their structures. The two massive-rock temples of Abu Simbel were carved out of a mountain in Egypt in 1250 BC; they are constituted of chambers and corridors richly engraved or painted that also count hundreds of columns and statues. The temples were de-constructed, moved elsewhere in Egypt, and re-constructed with 1960s technology. The term "reversibility" is not used in engineering, but constructing with a view to eventual deconstructing is becoming a recognisable engineering approach, e.g., so that structures (cars for instance) can be easily dismantled and parts re-used or properly disposed of. Thus, in France, as part of the authorisation procedure by the safety authorities, the owner of a new nuclear power plant (NPP) must illustrate how the construction sequence can be reversed. Many lessons have been learned over the years to facilitate eventual decommissioning and dismantling of NPPs. Mr. Pescatore also gave an example of continued care of a "facility", which requires reversing actions made earlier: namely, the recurrent refurbishing of the Todai-ji temple in Japan, which is the largest wooden structure in the world. First built in 752 AD, the temple still stands, but no part of the structure is original.

These analogues and many more subjects related to reversibility are being examined and discussed in an ongoing international project on reversibility and retrievability (R&R) under the aegis of the OECD/NEA. Mr. Pescatore presented some general findings of the project so far. These show that current policies on R&R vary among countries: R&R is a formal or primary component in France, Switzerland, and the United States, it is not formally required in Canada or the United Kingdom but it is widely discussed in the national debate; it is not formally required in Sweden and Finland, and it does not seem to play an important role in those countries' debates. Progress reports will be available during the course of the project. As part of the NEA project, an international conference will be organised in Reims, 15-17 December 2010, which will be open to all interested parties.

CLIS: What are the expectations and motivations for reversibility?

Mr. **Jean-Marie Malingreau,** CLIS member and a union official, stated that independently of opinions on nuclear power, the waste must be managed. The CLIS, as well as the elected General Councils of the two host districts, have set reversibility as a primary condition for a repository. The CLIS organised an international colloquium in 2001. While originally it was thought that waste packages would be permanently retrievable, it is now understood that there is a point of no return. The CLIS states that the 100-year period of reversibility should start at the closure of the repository (not at the first entry into operation). The decision is to be taken by Parliament.

Mr. Malingreau referred to the insight gained by CLIS members who participated with the full range of French stakeholders in the European programme "COWAM in Practice". In cooperation with the national federation ANCLI, and drawing on the experience of the local committee overseeing the Centre de la Manche Disposal Facility, the CLIS participants developed a civil society statement on the practical implementation of reversibility. This will inform the working group on this topic recently formed by the CLIS.

Mr. Malingreau argued that the Meuse/Haute-Marne must remain a vital centre of activity to guarantee that future generations find acceptable conditions. He urged Andra to work in closer concert with the CLIS so that the committee does not learn of decisions through the press. He expressed regret that the current national effort to site a new facility for disposal of low-level and long-lived radioactive waste came to divide the population in these districts. Finally, Mr. Malingreau gave recognition to the volunteers who compose the CLIS, as well as the Secretariat of the CLIS and the neutrality achieved by that staff.

Reversibility: Provisions and potential implications, the views of Andra

Mr. **Jean-Noël Dumont**, the Reversibility Project Correspondant at Andra, presented the phases by which the repository will be implemented. After the creation of access infrastructure, underground storage galleries will be constructed in succession, each to operate for some ten years. Reversibility consists of constructing all parts of the installation in such a way as to preserve the ability to remove them. Mr. Dumont then introduced the present concept of a "scale of reversibility", which helps point out the decision milestones for which stakeholder participants must be identified. He estimated that 7-8 further years are needed to elaborate the concept.

Questions and remarks

In response to questions from the audience, it was stated that:

- Vitrified HLW would be placed in thick steel containers allowing persons to walk around them. Sixty years of interim storage would allow their heat to subside. Dams and tunnels have provided experience with keeping monitoring captors alive for 50 to 60 years. Fibre optics could provide another solution. Research is continuing, e.g., on batteries capable of running for decades.
- While ten-year milestone periods seem short to draw conclusions on performance, this corresponds to the rhythm of safety reports to the regulator. This frequent checking means that the implementer has a clear calendar for planning and also has the opportunity for timely intervention.
- Vitrification makes it harder to go back to the original liquid waste stream and intervene on the waste. The trade-off, however, is an enormous gain in safety for workers and the public, as the glass form stabilises the waste and can be set to cool off in a simple manner.

Round-table discussions[2]

The workshop then broke up into the same six mixed groups to consider these questions:

1. What are the different actors' objectives for reversibility? How can their different expectations be accommodated?
2. What are the limits/implications of reversibility? How can society help define them?
3. Is there recognition that reversibility objectives and expectations may evolve with time?

The aim of this session was to explore participant's views of retrievability. The key themes emerging under each question are outlined below.

Different stakeholders in different counties and even within the same country have a different understanding about what retrievability is, how it will be achieved and for how long. This highlights the need for dialogue between all stakeholders to develop a common understanding of the issue and agreement on the way forward. Although there were different views about the definition, there were some common views about the objectives of retrievability.

Not all countries are discussing the issue of retrievability; it has not become part of the radioactive waste management debate in Sweden and Japan. In Sweden, the law is for final disposal

2. Thanks are due to FSC Core Group member Elizabeth Atherton for preparing the report of these Round-table discussions.

and a phrase that is used is, “if you trust the rock, trust the rock and close the facility”. However, it is recognised that the discussions about new nuclear power stations could mean spent fuel may come to be seen as a resource rather than a waste and this may change the debate.

There was some feeling that if reversibility and retrievability are important to the safety case in the Swedish programme, the regulator will make them requirements as part of the regulatory and Environmental Court review processes. For instance, in the safety case it is broadly understood that the implementer needs to be able to demonstrate the ability to fix a problem should it occur in the repository. If this requires retrievability, the regulator will make this a requirement.

It was recognised overall that different approaches may be taken for different kinds of radioactive waste depending on the wastes’ potential use as a resource in the future. Different approaches to retrievability may also be needed before and after closure of the facility.

Across all the discussions safety was identified as the key concern and it was recognised that plans for retrievability should not have a negative impact on safety. However, it was also recognised that there may be trade-offs that have to be made between retrievability and passive safety.

Some stakeholders were concerned about the introduction of retrievability because they thought it could undermine the safety of the system or could raise doubts about the safety of the facility (why would you want to retrieve the waste if the repository is “safe”?). However, other stakeholders felt retrievability could enhance the safety of the system as it allows implementers to check that the facility is working as expected and provides a way to deal with things if it is not. One possible reason for the differences in opinion is whether a person gives more trust to society or to technology. It was noted that reversibility does not relieve us from taking all prudent measures for passive safety. Some participants felt that the inclusion of retrievability communicated a welcome degree of modesty on the part of implementers, i.e. they cannot completely predict what will happen in the future.

Although some programmes do not talk about retrievability explicitly, most talk about phased decision making or a stepwise approach to implementation. Many of the aims of a stepwise approach (flexibility, building confidence, integrating new technology) are the same as the aims of retrievability (see below under question 1).

The Swedish programme is understood to require a long period in advance of closure in which there will be experiments, to demonstrate the performance of the system. The implementer is also required to bury a small amount of waste as an experiment. It was suggested by other participants that in some other countries, these kinds of requirements might be understood in context of retrievability and reversibility even though these are not discussed in this way in Sweden. It was suggested that programmes for which retrievability concepts are not explicitly important, as in Sweden, may in fact be very similar in practice to programmes which have adopted retrievability as a core concept. However, what is different is the way in which these activities are discussed. Therefore, whether or not retrievability is explicitly discussed, the overall approach across countries is similar and aims to build flexibility into the programme. How the overarching objectives are discussed and whether retrievability is explicitly part of the debate depends on the history in each country and how stakeholder engagement has been part of the programme. In some countries retrievability has been integrated into the technical concept as part of developing the social licence that is required to implement the facility.

In some countries retrievability is part of the legislation on radioactive waste management. However, it was recognised that this should not be too prescriptive and needs to leave room for modifications during implementation.

The following sections summarise the discussions under each question.

Question 1A: What are the different actors' objectives for retrievability?

Many similarities were found between the groups in their identification of the following objectives:

- To achieve a stepwise approach to implementation of geological disposal with suitably small steps between each part of the process.
- To be able to go back a step in the process.
- To enable people to make decisions which are reversible.
- To build confidence and trust incrementally over time.
- To enable the ability to remove the waste if something did not go to plan.
- To take advantage of the technical development that might happen over the disposal facility life time.
- To be able to implement a different waste management technique in the future.
- To be able to re-access the waste if it is seen to be a resource in the future.
- To enable future generations to make decisions about how to manage the wastes.
- To build flexibility into the system.
- To be able to master risks and show that they are being addressed.

There was some feeling that those in Sweden who call for reversibility and retrievability may hold this position because they are opposed to nuclear power and do not want to see the implementation of a repository proceed. Thus, possibly they do not have a genuine desire to see the inclusion of reversibility and retrievability in the programme, but assign a different strategic objective to these concepts.

Question 1B: How can different actors' expectations be accommodated?

It was recognised that the only way different stakeholders' views can be taken into account is if these are fed into the discussions and decision-making process. This in turn requires public debate on reversibility and retrievability. This debate needs to occur when designs are being considered for the repository, so that the requirements can be integrated into the design. Some participants felt that the timescale for retrievability and any limits on it must be part of the debate. Participants felt it is important to develop a shared view of the aims and implementation of reversibility and to ensure that societal preferences influence the technical solution.

Some French participants raised concerns about the timing of the parliamentary debate on reversibility for the law planned for 2015: this debate will come after the licensing application and it could be too late to impact the repository design.

The need was emphasised for clear decision points throughout the waste management process and for stakeholder input into these. Participants felt it was important to understand who the decision maker at each point is and how decisions will be made about moving to the next stage in the programme.

Question 2A: What are the limits/implications of reversibility/retrievability?

Several costs were identified with maintaining reversibility/retrievability:

- Maintaining the disposal cells.
- Replacing the equipment.

- Replacing the vaults that have been used and therefore, increasing the footprint of the facility itself.
- Doing something else with the waste that is retrieved.

It was recognised that these additional costs will need to be covered and that this requires ongoing funding sources. This may place a burden on future generations and the appropriateness of this will need to be discussed.

In order for reversibility/retrievability to be implemented over time, several things need to be in place:

- Human resources to maintain the facility.
- Technology.
- An organisation to implement reversibility/retrievability.
- Regulations to control the process.

These in turn require that society is still operating and able to provide these resources.

Reversibility/retrievability will have an impact on workers who will have to operate the facility and handle the waste. Maintaining the facility will also use natural resources that may be decreasing.

Reversibility/retrievability can also put requirements on the conditioning and packaging of waste to ensure durability. It may also require additional monitoring of the facility. These may not necessarily be bad things; as they contribute to safety, the benefits may outweigh their cost.

It was noted that if wastes are being retrieved to be used as a resource, then the costs of retrieval would need to be less than the value obtained from re-using the waste.

In countries that are not currently considering retrievability the cost of the facility is based on a non-retrievable concept and money is being put aside to cover the costs according to that model. If retrieval is included in the design in the future then the funds may not be sufficient to cover the costs and this could have an impact on power plant operators and ultimately on electricity consumers.

The main limitations identified for retrievability were:

- Safety – Participants did not want retrievability to have a negative impact on the safety of the facility. Some stakeholders felt that having a long period of retrievability could have a negative impact on safety and that this is unacceptable.
- Costs – The costs of implementing retrievability may make it impractical.
- Time – Maintaining retrievability requires the maintenance of the disposal vaults and facility; this will not be feasible indefinitely and will require new vaults over time.
- Technical – There may be technical limits on the implementation of retrievability.

Question 2B: How can society help define the limits/implications?

Participants felt there needs to be open public debate about the pros and cons, the costs and limitations and the benefits of retrievability. This was felt to be necessary to be able to make decisions about retrievability and its implementation in each country.

Participants recognised that there are trade-offs associated with retrievability:

- The desire not to place burdens on future generations versus giving them choices.

- Implementing geological disposal to decrease risks and provide a “final” solution versus leaving options open which may have a negative impact on risks.

Participants felt it is important to understand the monetary and other costs associated with retrievability and how they may change over time. They felt this needed to be fed into the debate about retrievability so stakeholders can decide whether it is worth the costs.

Question 3: Is there recognition that the retrievability objectives and expectations may evolve with time?

It was recognised that implementing a geological disposal facility will take many decades. During this timescale, the society and context in which the facility is being implemented will change.

These changes will inevitably impact on the objectives and expectations for the facility as a whole, including waste retrievability. Therefore, some stakeholders wanted a regular review of the approach and a stepwise process for implementation in order to enable any changes to be accommodated. This requires continuous dialogue.

One particular issue that may change the expectations of retrievability is the use of nuclear power in a country. If there is a nuclear renaissance then spent fuel may be viewed as a resource rather than a waste, so keeping it retrievable may become an issue.

Some participants gave examples of how the debate in their country has changed over time. In France, 25 years ago retrievability was perceived to be a flaw, but now it is a legal requirement. In the USA, in 1992, the law was changed. The focus now is to provide perpetual care and forms of active control, and ensure maintenance of memory.

Participants recognised that it is not practical to redefine periodically what is needed from retrievability, as this could have unsustainable cost implications and may require redesign of the facility. Retrievability can also become more difficult as the facility is implanted. Therefore, it is important to have a wide ranging debate at the outset to get clear aims and objectives for retrievability and to develop the way forward. Participants felt it was important to have the debate early so that it can feed into decisions about the design of the facility.

Clear goals and decision points need to be agreed at the beginning of the process, especially decisions that will impact on the flexibility, retrievability and future options. Having a clearly defined stepwise process enables the opportunity for stakeholders to agree when and how to move to the next stage of the process, especially if this decreases the future options that are available.

LOCAL VISIT: ECONOMIC SUPPORT AND REGIONAL DEVELOPMENT

Foreign and French participants spent the afternoon of the second day visiting the area that hosts the Meuse/Haute-Marne Underground Research Laboratory (URL), less than an hour's drive south of Bar-le-Duc. The URL is equidistant, only a few kilometres, from the centre of Bure (Meuse district) and the centre of Saudron (Haute-Marne district).

Visit of the URL

The workshop delegates first visited the surface installations of the URL. Because of occupational safety requirements, the underground installation itself can receive only a limited number of persons at the same time and therefore access by visitors to the underground installations depends on the number of workers present underground. The URL thus includes a visitors centre where Andra guides point out geological characteristics and explain the experimental work. A full-scale mock-up underground space allows visitors to have a physical sense of the URL. Closed-circuit cameras provide additional details of the ongoing activities underground. At the URL visitors centre, the workshop delegates heard presentations and interacted with science exhibits, before walking around the grounds and visiting the core samples bank.

Mr. **Pierre-Lionel Forbes**, URL Director at Andra, explained how the disposal cells of a future repository would be installed. Mr. Forbes illustrated the layout of the repository and the waste handling and emplacement techniques, and invited the delegates to visit the technological exhibition facility being finalised in nearby Saudron. One interesting feature of the proposed design is that the underground facility, at a 500-metre depth, could be accessed through a five-kilometre long, low-incline ramp. This has several advantages of which the most conspicuous is that the village(s) that would host the surface facilities and the village(s) that would host the underground facilities need not be the same ones. This long ramp thus helps provide significant flexibility in terms of siting of the surface installations. Given the size of the proposed repository, it is likely, in any case, that the footprint of the ensemble of the final installations would involve more than two villages.

Mr. **Marc-Antoine Martin**, URL Communication Manager, reviewed public information and relations work, pointing out the categories of visitors including a large number of school children each year. A visitors' evaluation questionnaire helps staff to understand their experience and demands, and Mr. Martin offered to share the form with his international counterparts. The communications department will step up public information in the proximity[3] and transposition[4] zones, through public meetings and documents. One delegate asked how Vosges[5] district residents are taken into account, as a

3. The proximity zone is defined by socio-economic and territorial (administrative) criteria by virtue of the June 2006 Planning Act. It covers some 300 villages located in the Meuse and Haute-Marne districts.
4. The transposition zone is defined on scientific criteria in Andra's report on URL research, "Dossier 2005" (presented as part of the preparation for the 2006 Act). Geological and other technical conditions within this zone of 250 km^2 permit the URL experimental results to be transposed there. Therefore, the underground installation of a future geological repository, should it be licensed, will be located within this area. The transposition zone is nearly ten times smaller than the proximity zone and is included inside the latter.
5. The Vosges district did not volunteer in 1993 (MP Bataille mission) for siting an URL and therefore has never been involved in the process.

significant surface of this bordering district is close to the transposition zone. Mr. Martin explained that Andra's first duty lies with the districts that came forward in 1993 to volunteer. He and his staff would certainly attend public meetings in the Vosges if invited to do so.

Visit of the technological exhibition facility

The technological exhibition facility is being constructed at Saudron for inauguration in June 2009. The delegates were privileged to see industrial prototypes/demonstrators and innovative equipment under study for the emplacement of the waste containers in the disposal cells of a future repository.

Visit of the Bure village

Mayor Gérard Antoine then hosted a small reception in the Town Hall of Bure, which counts 80 residents and whose economy is mostly rural. Delegates tasted a few local specialties including the world-famous AOC cheese "Brie de Meaux" that originates from cows' milk produced mainly in the immediate vicinity. Accepting the thanks of Janet Kotra, Chair of the FSC, Mayor Antoine graciously said he was honoured to receive such a large delegation of international visitors. He recognised good relations between the village councillors and Andra over the past 17 years. On the other hand, the economic accompaniment programme set by law and administered by the Meuse district GIP is not satisfactory in his view. Mayor Antoine feels that the GIP grants are perhaps distributed over much too large an area; his own village, identified in name with the URL, expected more support than has been received. The GIP funds contribute directly to Bure's annual budget at a rate of about 450 €/habitant per year.[6] Mayor Antoine informed the FSC delegates that local projects which formerly garnered co-financing at a rate of nearly 80% (basically the GIP would bridge the gap between regional, district and other grants in order to reach 80%) are now supported at an average final rate of only 50%. In a tiny rural village the annual GIP grant of 450€/habitant does not yield a sum sufficient for leveraging loans or grants for which "seed money" or municipal investment is required. Neighbouring villages, similarly small, share the same budgetary predicament, even if some infrastructure improvements are seen. This issue, which seems specific to the Meuse district as delegates were not informed about such a case in Haute-Marne, has created some tensions between the local mayors and the General Council of the Meuse district. FSC delegates were told that the need for funds is one reason why windmills are seen in the vicinity: the villages of Bonnet and Houdelaincourt have accepted to host these in order to receive the associated annual payments.

CLIS members and staff took the opportunity to show the delegates their well-stocked public reading room situated across from Bure Town Hall in a handsomely restored[7] traditional stone wash-house. Although this visit had not originally been planned, the CLIS secretariat graciously kept these premises open past usual hours. Delegates appreciated the CLIS members' initiative and their explanations of how documents are chosen from many sources and shared with interested citizens.

Also on the central square of the small village is an old farmhouse on which a banner reads "Bure – Free Zone – House of the Resistance to the Nuclear Waste Bin". It too has a small reading room, stocked with pamphlets of the anti-nuclear organisations. Workshop delegates interacted with a gentleman from the house. They learned later from local mayors that the house residents are perceived as new arrivals and foreign to the region.

6. This GIP annual contribution based on around €450 per capita has been implemented since 2007 (2006 Planning Act – Article 21) and applies only to the 33 villages with territory within the historic 10-km radius of the URL main access shaft.
7. The restoration was contributed by Andra.

Speech on economic local development

The local visit ended with a dinner at the village recreation hall of Montiers where **Mr. Oblette,** Vice President of the local metallurgy association Energie-ST-52-55 (52 and 55 being the postcode and car plate number for the Haute-Marne and Meuse districts, respectively), spoke about local industry's response to new opportunities. Metallurgy is an historic activity in the region and through grouping together in this association, small enterprises have been able to modernise their business practices (notably in terms of quality control to meet French nuclear industry standards) and thereby improve their offer. Thanks to efforts by the GIPs, Andra's presence in the region has been joined by that of Electricity of France and Areva. These industrial clients have given new orders for local supply. The association is currently looking beyond the national level and aims at the US ASME[8] qualification. As a recent example, Areva has won contracts to build two European Pressurized Reactors in China, and association metallurgists will provide metal tubes and spigots. For the time being, the association is not self-sufficient and still needs the annual GIPs' contribution to operate. In terms of diversification for local metallurgy, this initiative so far has resulted in some 10% additional revenues.

The local mayors attending the dinner and thus this presentation, mostly from the local rural municipalities, had not been fully aware of this GIP development action, which is an example of support beyond the historic "10-km" radius of the URL main access shaft.

8. American Society of Mechanical Engineers.

ENVIRONMENTAL MONITORING AND THE ISSUE OF MEMORY

Environmental monitoring and its review on behalf of the CLIS

Mr. **Benoît Jaquet**, Secretary of the CLIS, gave the fourth presentation of the workshop by this stakeholder organisation.

An Environmental Monitoring Plan was set up by Andra from the start of the URL construction, in response to regulatory requirements. A baseline was obtained for the following vectors: water quality (surface, underground, and waste water), air quality, noise levels, flora, fauna and radioactivity. The CLIS contracted the IPSN (now a part of the Institute for Radiation Protection and Nuclear Safety, IRSN) to review the plan and its relevancy to local stakeholder concerns. Two recommendations were made: to add two water quality measuring stations, and to continue radiological monitoring. After debate in the CLIS (June 2000) Andra's final environmental plan integrated the proposals.

The other topic mentioned by Mr. Jaquet was the initiative by the CLIS to introduce epidemiologic studies. A national group was set up by the French Institute for Public Health Surveillance (INVS) including, as stakeholders, the CLIS, the Nuclear Safety Authority (ASN), Andra, and regional epidemiology units. Its objective was to consider how to produce a meaningful baseline (which population, which pathologies). Despite express interest by the CLIS, the group met only once in 2003.

The CLIS continues to believe that this issue must be addressed and has created its own, internal working group[9] on "environment and health". It will deliberate on public health expectations for the impact studies foreseen in repository licensing requirements by the 2006 Planning Act. Andra meanwhile is setting up a "permanent environmental observatory".

A tool in the service of the CLI, independent review. Example of the CLI associated with the Aube district LILW disposal facility

Mr. **Philippe Dallemagne** is Mayor of Soulaines-Dhuys, President of the Community of Communes of Soulaines and Vice President of the Soulaines CLI.[10] He called independent expertise – enabled by the 2006 Act on Transparency and Nuclear Safety – "fundamentally necessary" to allow a local commission to move beyond polarisation between pro- and anti-nuclear sources. The Soulaines CLI woke up from torpor and increased its credibility by launching a bidding process for independent investigation of the facility's radiological impact. This became necessary because dose rate measurements taken at the fence by the CRIIRAD laboratory, in a campaign financed by the Regional Council of Champagne-Ardenne, showed "hotspots" (although levels of radioactivity remained within regulatory limits). The authorities and the operator were kept informed and co-operated, notably by

9. In line with this topic, it is worth recalling that according to the June 2006 Planning Act provisions, the new CLIS now integrates a physician specialised in radiation therapy as well as a representative of the Order of Physicians in each district.
10. A CLI is a "C*ommission locale d'information*". This type of organisation is commonly established in France for all facilities that are deemed according to regulations to pose a danger to the environment. CLIS, *Comités locaux d'information et de suivi* or "local information and oversight committees" were created by the 1991 Waste Act specifically to accompany the URL project as from its licensing.

opening the facility for sampling from the piezometers located within the facility fences. This unprecedented move was encouraged, according to Mr. Dallemagne, by the rigour of the CLI's study protocol, and reflected Andra's willingness to help the CLI construct its own independent public information. The protocol approved by the CLI covered radionuclides not usually measured and included 3 samples at each place: one for the independent organisation (ACRO in this case), one for the operator (Andra) and one as a possible reference, should any discrepancy in results appear (this did not occur). The process was managed by the CLI with attention to optimising the cost of data delivery. At the end the CLI issued the results, thereby establishing a baseline and informing the population about the degree of "environmental pressure" exercised upon the ecosystem by the facility.

The memory of the repository

Mr. **Patrice Charton**, Andra Deputy Director for Risk Management, said that the objective of memorialising a repository over the long term is to help future generations understand their site observations, to correct dysfunctions or even to transform the site in light of unpredictable technological advances. While monitoring and human presence over several hundred years are mandated by law (the precise period will be determined by the so-called "Reversibility Act" by 2015, based on Andra's proposal and input from various stakeholders), we cannot know whether society will choose or even be able to maintain this for very long periods. Without memory preservation, closed-down industrial sites today become lost or unreadable in as little as 20-30 years. Mr. Charton detailed the technical means by which Andra passively archives the Aube district LILW facility (a detailed construction and operational history on permanent paper, jargon-free, available on internet and to be reviewed this year by the local CLI). Very durable materials like sapphire and platinum are considered for markers, but it is recognised that the drawings, symbols or texts that we could microengrave may not be readable by future generations. Based on our archaeological (backward-looking) experience, beyond a few thousand years in the future our language (not to speak of our software) could be entirely incomprehensible. In the next decades, active memorialisation considered for the future HL and IL-LL waste repository will rely notably on maintaining exchanges with the local public. The CLIS will play a fundamental role.

Questions and remarks

A participant commented that the concept of ecological footprint has been introduced into a draft law by French Parliament. The CLIS Secretary wonders whether this new opportunity will be taken up in regard to the repository or whether the classical environmental impact study will be required. In any case, the CLIS will act as it did for the Environmental Monitoring Plan, actively following up and informing about the future development of the footprint concept and regulatory prescriptions.

A CLIS member, reflecting on the Soulaines CLI case, pointed out that the resources available to the local commissions to carry out their role are small by comparison to those of the big organisations. Mr. Dallemagne, whose CLI will organise new analyses during operation of the Aube facility, said that fortunately these stakeholder organisations do not work in isolation. He pointed to the vital support provided by the Scientific Committee of the ANCLI (the national federation of CLI) in working out the study protocol.

The regulator role is different in the various countries, notably with respect to environmental analyses (limited to control of compliance with regulations in some cases, while elsewhere in charge of the complete arrangements for environmental monitoring). The CLIS expects that the Safety Authority will "naturally" be involved in the deliberations of the working group on environment and health. Mr. Charton pointed out that the ASN gives guidance and also performs review. For instance, the geological repository safety report will include memory aspects and will be assessed by the regulator.

Round-table discussions[11]

As in the first session, participants in the workshop then convened in the six mixed groups for in-depth exchanges. The following questions were discussed:

1. What are the local expectations for monitoring the environment?
2. How can the local community contribute to this monitoring?
3. How can the local community contribute to maintaining the memory of the repository?

The summary below reflects the plenary reports by the different round tables.

What are the local expectations for monitoring the environment?

There was a general agreement across the round tables that communities consider monitoring to be a key issue, principally in regard to health and environmental concerns. Monitoring objectives as seen by communities are basically to give assurance that everything works correctly and to have the possibility of receiving early signals of any shortcomings. But communities are also asking for monitoring to measure impacts on socioeconomic variables. The idea came up of monitoring the implementation of benefit packages or further social and economical compromises agreed at the site designation phase (economic development, property value protection, etc).

Underlying the different considerations there was a common understanding that communities and other stakeholders should have the ability to access and to interpret monitoring results. Transparency, truthfulness and engagement in real dialogue were frequently mentioned as basic conditions for locals to make the most of monitoring efforts. A further consideration was noteworthy: any attempt to follow up monitoring should focus on key issues involved (e.g., safety) thus avoiding discussion on trivialities.

By whom are monitoring results interpreted, and how? This was also a matter of major discussion in the different round tables. Most of the participants appeared concerned primarily about who is going to validate the results. Clusters of different opinions could be drawn out. Representatives of a few countries discharged this duty on national regulators or other assigned administrative officers. Swedish delegates converged in recognising the suitability of existing EIA procedures and environmental courts. Incontrast most of the other participants voted for establishing independent monitors/auditors who are chosen by the inhabitants or who take on these tasks on behalf of the affected community (see discussions on Q2). In this respect credibility seems to be the key point as expressed verbatim: "*People don't know the technical terms and don't want to/shouldn't be required to learn them. But if a credible voice is raised to say that the measurements are done according to the rules of the art, this can replace part of the understanding. This trust can be built up over years".*

Most of the round tables agreed that monitoring should be launched before a given facility starts its operation in order to record the baseline situation. Regulatory demands concerning nuclear monitoring are important but stakeholder consultations should be carried out to scope other potential impacts and to identify which environmental elements are to be monitored. A baseline should be established prior to the construction and operation of the facilities. Again delegates stressed the desirability of having clear rules for this to be implemented, and even suggested that a legal framework was of the utmost relevance.

In sum, there was consensus that local access to monitoring must be empowered by institutionalising local involvement (legal framework), allocating human and financial resources and ensuring their continuity.

11. Thanks are due to FSC Core Group member Mariano Molina for preparing the report of these round-table discussions.

Referring to the French case, there was general agreement that Andra appears to be performing well in conducting baseline research and organising ongoing monitoring, including seismic monitoring by national/international authorities. Nevertheless, French participants expressed that they want the additional involvement of the regulator, and also of independent laboratories. Monitoring by the regulator and implementer alone is not considered sufficient to build/sustain confidence. To this end the role of CLI seems to be extremely relevant, especially their ability to ask the right questions and to engage independent expertise. A particular situation was discussed concerning the initiative by the CLIS de Bure to introduce epidemiological studies. A national group was set up by the French Institute for Public Health Surveillance including as stakeholders the CLIS, ASN, Andra, and regional epidemiology units. Its objective was to consider how to produce a meaningful baseline (which population, which pathologies?). Despite expressed interest by the CLIS, the group met only once in 2003. Concerns were about the difficulty of identifying for study a suitably meaningful population sample in an area of low population density. To reach a statistically significant sample, the reference population would be spread quite far from the possible disposal area. The potential impact would not be the same for all members of the sample, and final results might therefore be meaningless.

How can the local community contribute to this monitoring?

Involvement of communities in monitoring was considered beneficial. If the conditions of transparency and credibility are met, the local level obtains a sense of ownership/responsibility and could provide sound contributions by posing questions, reviewing the results and reinforcing the actors in charge. Funds are required for the community to be part of monitoring. Whether the community asks for independent monitoring or simply wishes to be involved in the discussion of the results, financial support is required and this has to be provided in a continuous way.

All the round tables highlighted several benefits of being involved in monitoring:

- Processes of learning and development of confidence are fostered.
- The more information is fed to the local community the better they can contribute to the spirit of monitoring.

As pointed out in the responses to Q1, participants split when addressing the role of the community in monitoring. Several workshop delegates (from Canada, Sweden, the United Kingdom and the United States) were of the opinion that communities did not want to monitor by themselves but want to participate in knowing whether results fit with early safety and environmental assumptions. The role of the regulatory body seemed to be clear and authoritative in all these cases. The remaining countries' representatives opted for a more active role of the communities. Generally, they called for independent monitoring or alternatively the power to push the functions of specific bodies established in this spirit, as has been the case of the CLIS de Bure and of other Local Information Commissions in France.

How can the local community contribute to maintaining the memory of the repository?

Local communities have an important role in contributing to maintaining the memory of a repository. This was the feeling of round-table participants but also the experience in some countries where there is an advanced programme for implementing underground repositories (France, Sweden and the United States). Participants generally think that local communities will come to play a crucial role when the period of institutional monitoring is over. Then a double back-up system seems to be the most appropriate, comprising an official, national set of mechanisms to preserve the records of the repository (national archives, files, etc.), and an active involvement of local communities by means of their own cultural mechanisms and customs. As to the latter approach, some participants insisted that engineers can reflect and find methods but any method can fall into disuse or disrepair, i.e. State political regime can change over time.

To contribute to preserving memory the community and the local people have to embrace the principle, legitimise and participate in this to give it meaning and sustainability. After much discussion at community level, the feeling in Sweden is that locals must take the steps they can today, with what they know today, and try to carry that forward into the future. In France, the Parliament is aware of the high expectations of local people on memory and continuous debate is also taking place in other fora.

Continuity in efforts to maintain the memory of a repository is needed whatever the system chosen for this. The term "living history" was proposed by a round table, this to be composed by records based on local experience, communal archives (photos, written), etc. A particular action to enhance memory preservation is the possibility of creating a unique monument in the region that would attract visitors. In this case visitors will contribute to carrying memory forward. "Continuity" is the key word. In this respect, France's regular periodic updating of the national waste inventory and of documentation of the historic waste sites was highlighted as a good approach. In some countries there had been a need to interview former staff of historic facilities to improve the understanding of their construction characteristics and their waste.

Communities have their own ways of preserving their cultural features and history and of giving social significance to them. It is a particular mechanism of group interaction (soft memory) which automatically works within a community but could be harnessed to maintain the memory of disposal facilities. Creating a social memory of the facility in the host community will help to pass knowledge on to future generations and will enable them to influence how the facility is managed.

The list of tools for locals maintaining memory seems to be open and delegates generally agreed that these could be country specific. Major items appear to be the following:

- Land registers and markers.
- Regular dissemination and "translation" of the information.
- Oral history.
- Added value from the installation contributing to ensuring it a viable place in a sustainable community.
- Developing the culture of memory in institutions and territories.

EXTERNAL RAPPORTEUR'S OBSERVATIONS AND LESSONS LEARNT

Rapporteur's observations and reflections

Mr. **John Walls**, Senior Research Associate in the Geography Department of Durham University (United Kingdom) was invited by the NEA Secretariat to observe the workshop and to offer feedback on what was heard. He first acknowledged Mayor Jaquet's suggestion that the repository issue raises questions in the local area about identity and about energy choices. Dr. Walls agreed that people's identities are bound up with their home place. Siting a new industrial facility means that people have to accommodate a new identity or that they may resist it. It is an urgent social, political and cultural issue. In the case of Bure, no nuclear facilities exist in the area to provide a sense of familiarity.

Mr. Walls then observed that the French process of repository development is driven in a top-down manner by a system of laws to which all actors refer. Positive aspects are that all actors know their role and responsibilities. However, the gain in efficiency could be balanced by a loss of sensitivity to local needs and a reduction in innovation. A tight timetable is foreseen for the next steps and Mr. Walls asked if there would be enough flexibility to undertake more R&D if the scheduled public debate shows it to be necessary. He also asked what arrangements are in place for the implementer and local communities to conduct joint fact-finding in preparation for the debate.

Reviewing the role of the CLIS, Mr. Walls acknowledged that developing the monitoring and oversight function requires time, training and the ability to reach out to the public beyond traditional forms of representative democracy. He suggested that the establishment of the GIP to handle development funds is an example of good practice, and that it is important to ensure transparency and accountability through regular audit. Mr. Walls cited the French sociological concept of "hybrid forums", formal or informal chambers in which scientific and societal stakeholders come to grips with complex and controversial issues. These are valuable places where the range of concerned actors can surmount divides and address technical questions that concern the collective. Hybrid forums go beyond information sharing. Participants' identities evolve as they address controversies together, and their common involvement opens the door to compromises and alliances. Such arrangements respect citizens' right to be heard and to take part in decision-making. Far from being "anti-science", these forums offer productive opportunities to explore uncertainty. Mr. Walls asked whether RWM organisations have adapted to this new reality, and whether hybrid forums could be adopted in the French context. He concluded by reviewing typical obstacles to public involvement which should be overcome to help create new and robust solutions.

CLOSURE

Mr. **Christian Bataille**, MP and President of the CLIS, was absent for reasons of health. He provided a closing statement which was read for him by Benoît Jaquet. Usually laws are prepared by government and submitted to parliament, but as Mr. Bataille pointed out, the Waste Act of 1991 was a parliamentary initiative. In his statement, the deputy recalled the contributions of the 1991 and 2006 Acts and the 2006 Nuclear Transparency Act, including modifications to major public organisations involved in RWM.

Mr. **Jean Coudry** of the CLIS shared with delegates the image he hoped they would retain of the local oversight committee. He judged that "CLIS 1" associated with the URL had been active and productive. The "CLIS 2" created by the 2006 Planning Act is still in a phase of adaptation. A programme of training and visits will help bring all members, including those from newly included areas up to speed. Working parties are selecting their topics and are eager to get to work.

Mr. **Uichiro Yoshimura** on behalf of the NEA thanked Andra and the CLIS for their unstinting contributions to the Forum on Stakeholder Confidence workshop. He recognised the presence and participation of mayors and local representatives from France, Canada, Hungary and Sweden, as well as university professors, safety regulators, policy makers and waste managers from 13 countries in all.

Mr. **Roland Corrier** of the CLIS highlighted the Committee's obligation to be constantly vigilant as both actor and witness of the decision-making process, and to act as mediators with the local population. He expressed the hope that transparency and continuing engagement would not be sacrificed to the area's economic development and benefits.

Finally, Mrs. **Janet Kotra**, FSC Chair, thanked the French stakeholders for speaking their views during the workshop. Like the six FSC workshops preceding it, this meeting gave members a new prism to look at collaborative learning and decision making, and provided international delegates with new understanding and motivation to collaborate with their own partners. Mrs. Kotra expressed gratitude for the warm welcome found in Bar-le-Duc and the communities of the Meuse and Haute-Marne, and thanked Andra for their sponsorship and aid in organising the workshop. She ended by acknowledging the NEA.

INTERNATIONAL PERSPECTIVE

NEA Secretariat

The Bar-le-Duc workshop was the seventh FSC workshop in a national context. It allowed international participants and French elected officials, local citizens, and interested parties to exchange experience in an atmosphere of co-operation and mutual learning.

The meeting took place at a particular time in the French process when a new start was perhaps needed. The Local Information and Oversight Committee (CLIS) was in transition: after many months without official leadership, the CLIS had a Chair, but he was about to leave this position;[12] the dialogue with the implementer was waiting to be re-started after the promulgation of the June 2006 Law identifying the reference area for a disposal facility for high-level and medium-level long-lived waste; the parallel search by Andra of a new national site to locate a disposal facility for low-level, long-lived waste had strained relationships in the region. Demonstrators at the opening of the FSC workshop highlighted the delicate issues at play.[13] All in all it was a good time for people to find a neutral ground on which to sit together and talk, and the participants took full advantage of the opportunities for dialogue and exchange of experience that a FSC workshop offers. Lessons were learnt both by the international and the national participants and, most importantly, the dialogue was re-started between the CLIS members and the Andra personnel. The dialogue is continuing past the workshop date.

Compared to many other countries, France has a highly centralised and complex politico-administrative system. In such a context, authorities that operate at an intermediate level between the national and the local authorities may have a role to play in radioactive waste management. In a general manner, the FSC designates as "regional" any administrative territorial unit[14] that incorporates the few communities more closely situated to a facility and perhaps hosting it. The "regional" territorial unit may be significantly larger and may cover a wider range of geographic, economic and demographic characteristics than does the local unit. The administrators of the regional territorial unit will typically interact with both the national and the local level, and will represent/administer interests that may not be always consistent those of either the national or local level. It may be recalled for instance that, in many instances across the world, failure in siting a waste repository is traceable, in the end, to opposition at the regional level.

12. A new Chair was named only in October 2009.
13 For the record, a few journalists as well as a small group of opponents to the national French disposal project were awaiting the delegates at the start of the workshop. The opponents tried to obstruct the delegates' entering into the meeting place, but the police intervened. The opponents were offered an opportunity to explain their position at the opening session of the workshop, but they refused. The journalists attended the opening session and interviewed the FSC Chair and the Secretariat. The next day, an article in the daily paper Est Républicain (8 April 2009, Meuse page) reported on the workshop, on the FSC and on the demonstration. The FSC received later and accepted a proposal from one of the demonstrators to address the workshop, but finally this local elected official, a member of the CLIS, was unable to attend.
14. In France, such intermediate territorial units include the "département" (district) and the larger "région" (region).

The France workshop allowed FSC delegates to understand that, in such decision-making environments, RWM decision making needs organisation so that the different levels (national, regional, and local) can be appropriately involved. For instance, although Andra has been present in the Bure/Saudron area for over ten years, and local mayors may see the agency as a natural partner for direct discussions about local economic development, the law sets up Public Interest Groups (GIP) to handle funding, industry investment and development orientations on a district-wide basis. There is thus a sense that a durable relationship must be built with the districts that will serve the nation by hosting a RWM facility. International observers will be interested to follow the results of this search for balance in France. In an effort to bring about this balance:

- France's legislated approach tends to rely most naturally on the district unit. In upcoming steps, prior to the definitive siting of the repository footprint, the National Commission on Public Debate will conduct an official consultation in the two districts of Meuse and Haute-Marne.
- The composition of the CLIS includes mayors and other representatives from the two districts touched by the underground research laboratory. In this context, there may be a concern that the most directly-affected communities are insufficiently empowered in this legal context. Thus, the town halls of the small local communities receive only some €400 per capita per year, which hardly allows a tiny village to undertake projects at the level of their ambitions, whereas much larger sums are spent farther away from the siting area in the overall "region".
- Over its years of operation CLIS members – which represent communities all over the affected districts – have developed special insight regarding quality of life, development and public issues in the territory directly surrounding the laboratory installation. Their expertise could allow them to play an important role in helping to foster sustainability of the local host communities. However, while composed of mayors from throughout the region, the CLIS and the GIPs have no official link and it is the GIPs' task to distribute funding and to support development projects across the districts. The Chair of each GIP represents even wider territorial interests, as that seat is filled by each district's General Council President. It appears at this time that the larger institutions (the elected General Councils, the nuclear industry that owns the waste, and others) are aware of the need to empower the small communities and are taking action to rectify the situation (e.g., providing seed money so that villages can leverage European matching contributions, etc.).
- The notion of "service rendered to the nation" may at times be obscured behind regional "business as usual" when development projects are announced without clarifying that the GIP is the source of the funding. In this way, the positive impacts of the RWM activity are not brought to the attention of citizens throughout the region. The fact that beneficiaries of the funding do not always reveal its source poses questions about the effective integration of the RWM activity and the actual culture of thought in the villages. The recent requirement that aided projects must display the GIP logo will begin to affect this culture, but underlying motivations and concerns should perhaps be brought to light and addressed.

Another important lesson that the FSC takes home is that the many years of involvement of the CLIS, and moreover members' personal dedication, pay off in terms of competence. The CLIS participated in the workshop in a serious and impressive way, offering six presentations and with individual members (and former members) contributing insight to the roundtables. Delegates saw the library and public reading room stocked by CLIS members and staff over the years with documentation collected through their participation in national and international visits, collaborations, colloquia and projects. The CLIS has been able to function in self-organisation during the time that no Chairperson was nominated. At the workshop and on the public scene, the CLIS has repeatedly shown

itself to be a credible “sparring partner” and actor in the RWM system, even if this body has little actual power of decision making. This competence is a valuable resource for the long-term management of radioactive waste, and ways of sustaining it could be examined.

Lessons were learnt as well about how relationships among waste management stakeholders are fostered and the different ways in which these can be made durable. The FSC visit to the region, and observation of ANDRA and local stakeholder relations, revealed an interesting mix of formality and informality. Delegates gained some insight into the long dialogue that has taken place between institutional actors, local elected people and community leaders over the past ten years, and the importance of “behind the scenes” negotiation when it respects the role and constraints of local mayors.

Developments in France highlight how the need for organised stakeholder bodies may change and adapt when RWM programmes move into a new phase. Delegates observed that new mandates and new practices are being born in the context framed by the new 2006 laws, and the dynamics among stakeholders may change as well. The CLIS is forming new working groups to consider issues, like reversibility and retrievability, that come into view as the date nears for an effective repository to be constructed. The former research organisation Andra takes on the profile of industrial operator, while needing to stay distinct in the public eye from the familiar nuclear industry actors. In this context, dialogue among actors becomes even more important. A sign of Andra’s investment in dialogue is that they are sending more agents to be present in the field and become involved in discussions with the CLIS, the GIP and the Regional and General Councils. As in all dialogue, it is likely that each partner’s understanding and perspective will evolve.

On the thematic level, the workshop highlighted some issues of high importance to elected leaders, which require careful consideration. An example was given by the Mayor of Bar-le-Duc, who voiced concern over the long-term governance of a waste management facility. Specifically, she asked what institutional controls will be in place in the long term to ensure health and safety? She asked whether the central government might not in future delegate responsibility for site monitoring and management to local governments, and if so, would local governments have the necessary funds and capability to meet these responsibilities? These questions pose the problem of how to build, from early on, societal assurances into a system dealing with timescales of centuries and longer.

Transversal insight was gained at the workshop regarding differing national views on the need for or importance of waste retrievability. In some contexts its application is viewed as socially responsible, while in others, it may be viewed as a form of indecision or mistrust of the management system and, because of that, not needed. The rich discussion at round tables indicated that international elaboration can be a source of inspiration and of information from which to draw.

Appendix 1

FSC WORKSHOP PROGRAMME
ON REPOSITORIES AND HOST REGIONS:
ENVISAGING THE FUTURE TOGETHER

7-9 April 2009
Bar-le-Duc, France

With the assistance of
the Comité Local d'Information et de Suivi du Laboratoire de Bure
and the support of Agence nationale pour la gestion des déchets radioactifs (ANDRA)

TUESDAY 7 APRIL 2009

Session I: The Historical and National Context
Chair: Peter Ormai, FSC and PURAM

Official opening statements
- Uichiro Yoshimura, Deputy Director for Safety and Regulation, NEA
- Nelly Jaquet, Mayor of Bar-le-Duc
- Michel Jubert, President, CCI of the Meuse
- Pierre-Lionel Forbes, Director of the Meuse/Haute-Marne Laboratory
- Janet Kotra, FSC Chair

The Historical Background of the French Programme
Bernard Faucher, International Affairs, Andra

The French Institutional Framework and the Main Actors
Gérald Ouzounian, General Delegate, International Affairs, Andra

The Status of the Geological Disposal Project
Jean-Marie Krieguer, Chef du Service Projet Déchets HAVL, Andra

The CLIS
Jean Coudry, CGC Representative, CLIS

The Territories
Eric Chagneau, Director of the GIP-Meuse
Jean Masson, Director of the GIP-Haute-Marne

Discussion

Session II: Local Public Information
Chair: Janet Kotra, FSC Chair

Presentation of the "Methodology" of the workshop
Janet Kotra, FSC Chair

The CLIS Public Information Programme and the Survey by the CLIS on the Population's Expectations
Laëtitia Colon, Scientific Secretary, CLIS

Consideration of other Actors, Organised and Non-organised
Roland Corrier, Conseiller général of the Meuse

Andra Public Information Programme
Sébastien Farin, PIC Co-ordinator, Andra

Presentation of questions for the roundtables:

- What information is key to the local population for informing their discussions and decisions?
- What sources of information do stakeholders use, and are the sources trusted and sufficient?
- What are the expectations on the provision of information by international institutions?
- How to deal with different levels of understanding and interests amongst the participants in the process?

Discussion in small roundtable groups.

Feedback from the roundtables.

WEDNESDAY 8 APRIL 2009

Session III: Reversibility: Expectations and Motivations
Chair: Elizabeth Atherton, FSC Vice-president

The Historical and Political Interpretation
Jean-Michel Hoorelbeke, Deputy Director for Projects, Andra

The Vision of the CNE
Pierre Bérest, CNE

NEA Working Group on Reversibility
Claudio Pescatore, Deputy Head of Division, NEA

CLIS: What Are the Expectations and Motivations for Reversibility?
Jean-Marie Malingreau, CFTC Representative, CLIS

Reversibility: Provisions and Potential Implications, the Views of Andra
Jean-Noël Dumont, HAMAVL Reversibility Project Correspondant, Andra

Presentation of the questions to be considered by the roundtables

- What are the different actors. objectives for reversibility? How can their different expectations be accommodated?
- What are the limits/implications of reversibility? How can society help define them?
- Is there recognition that reversibility objectives and expectations may evolve with time?

Discussion in small roundtable groups.

Feedback from the roundtables.

Local Visit: Economic Support and Regional Development

Underground Laboratory
Welcome introduction
Pierre-Lionel Forbes, Laboratory Director

Presentation of the underground research laboratory's public relations. Visit of the public access building and the site model
Marc-Antoine Martin, Chef du service communication

Tour of the zone with visits to the CTe (technological experimental centre) (Saudron), the archives and town of Ecurey.

THURSDAY 9 APRIL 2009

Session IV: Environmental Monitoring and the Issue of Memory
Chair: Mariano Molina, FSC Vice-president

Environmental Monitoring and Its Review on Behalf of the CLIS
Benoît Jaquet, CLIS Secretary

A Tool in the Service of the CLI, the Independent Review. The Example of the CLI LLW Disposal Site of the Aube
Philippe Dallemagne, Mayor of Soulaines-Dhuys, Vice-President of the CLI (Aube Disposal Centre), President of the Community of Communes of Soulaines

The Memory of the Repository
Patrick Charton, Deputy Director forRisk Management, Andra

Presentation of the questions to be considered by the roundtables
1. What are the local expectations for monitoring the environment?
2. How can the local community contribute to this monitoring?
3. How can the local community contribute to maintaining the memory of the repository?

Discussion in small roundtable groups. Feedback from the roundtable

Session V: External Rapporteur:
Observations and Lessons to be Learned

John Walls, Durham University, United Kingdom

Discussion

Session VI: Closure

Christian Bataille, Deputy, President of the CLIS

Final statement by FSC Chair and the NEA

Appendix 2

LIST OF PARTICIPANTS

Belgium	M. Ludo JADOUL	FANC
Canada	Ms. Ann AIKENS	Mayor, Deep River
	Ms. Marcia BLANCHETTE	Natural Resources Canada
	Jo-Ann FACELLA	Nuclear Waste Management Organization
	Mr. Ron JAMIESON	NWMO
Czech	Ms. Ivana ŠKVOROVÁ	RAWRA
Republic	Ms. Lucie STEINEROVÁ	RAWRA
Finland	Mr. Timo SEPPÄLÄ	Posiva Oy
France	Mr. Luis APARICIO	Andra
	Mr. Laurent AUBRY	CLIS
	Mr. Michel BABEL	ASN
	Mr. Albert BARDY	Osne le Val
	Mr. Pierre BÉREST	CNE
	Mr. Frédéric CARTÉGNIE	Andra
	Mr. Eric CHAGNEAU	GIP Meuse
	Mr. Patrick CHARTON	Andra
	Ms. Laetitia COLON	CLIS
	Mr. Roland CORRIER	CLIS
	Mr. Jean COUDRY	CLIS
	Mr. Philippe DALLEMAGNE	Centre du Stockage de l'Aube
	Mr. Jean-Noël DUMONT	Andra
	Mr. Sébastien FARIN	Andra
	Mr. Bernard FAUCHER	Andra
	Mr. Pierre-Lionel FORBES	Andra
	Mr. Arnaud FOUCAULT	Montreuil sur Thonnance
	Mr. Gilles GAULUET	Codecom du Val d'Ornois
	Ms. Marielle GIRARD	Andra
	Mr. François-Michel GONNOT	Andra
	Mr. Jean-Michel HOORELBEKE	Andra
	Mr. Benoît JAQUET	CLIS
	Mrs. Nelly JAQUET	Mairie Bar-Le-Duc
	Mr. Michel JUBERT	CNP
	Dr. Claire KERBOUL	CEA
	Mr. Jean-Marie KRIEGUER	Andra
	Mr. Maurice LABAT	CLIS
	Mr. Nicolas LANGLOIS	Mairie de St Amand sur Ornain
	Mr. Jean-Marie MALINGREAU	CLIS
	Mr. Marc-Antoine MARTIN	Andra
	Mr. Jean MASSON	GIP Haute-Marne
	Ms. Sophie MOURLON	DREAL, Champagne-Ardenne
	Mr. Jean-Pierre OBLETTE	ENERGIC
	Mr. Gerald OUZOUNIAN	Andra

France	Mr. Eric POIROT	Andra
(Cont'd)	Mr. Richard POISSON	Andra
	Mr. Jean-Francois RENARD	Mairie, Biencourt-sur-Orge
	Mr. Eric SUTRE	Andra
	Mr. Alain THIZON	ASN
	Mr. Hervé VAN DE WALLE	CLIS, 55000 Le Bouchon-sur-Saulx
Germany	Mrs. Beate KALLENBACH-HERBERT	Oeko-Institut
Hungary	Mrs. Julia KISS	PURAM
	Mr. Attila KOVÁCS	Social Instructor
	Mr. Gyözö KOVÁCS	Mayor of Boda
	Dr. Peter ORMAI	PURAM
	Professor Anna VÁRI	Hungarian Academy of Sciences
Japan	Mr. Akira DEGUCHI	NUMO
	Akio TAMURA	NUMO
Spain	Mr. Arturo GONZÁLEZ LÓPEZ	Enresa
	Mr. Mariano MOLINA MARTÍN	Enresa
Sweden	Mr. Bertil ALM	Östhammar Municipality
	Mr. Patrik BORG	Swedish Radiation Safety Authority
	Mrs. Anna CATO	Swedish National Council for Nuclear Waste
	Ms. Elisabeth ENGLUND	Municipality of Oskarhamn
	Ms. Charlotte LILIEMARK	Municipality of Oskarshamn
	Dr. Eva SIMIC	National Council for Nuclear Waste
	Ms. Virpi SJÖBERG LINDFORS	Municipality of Osthammer
	Mr. Carl SOMMERHOLT	SKB
	Ms. Carina WETZEL	Swedish Radiation Safety Authority
Switzerland	Mr. Philip BIRKHÄUSER	NAGRA
	Mr. Thomas FLUELER	ETH Zürich
	Mr. Markus FRITSCHI	NAGRA
	Mr. Stefan JORDI	Swiss Federal Office of Energy
United	Ms. Elizabeth ATHERTON	Nuclear Decommissioning Authority
Kingdom	Mr. Mike DAVIDSON	Allerdale Borough Council
	Ms. Elizabeth GRAY	Scottish Government, Envtal Quality Dir.
	Mr. Charles HOLMES	Allerdale Borough Council
	Ms. Jay REDGROVE	Nuclear Decommissioning Authority
	Dr. John WALLS	Durham University
United States	Ms. Janet KOTRA	US Nuclear Regulatory Commission
EC	Mrs. Christina NECHEVA	European Commission, DG
NEA	Mr. Dong-Shan LIU	RPRWM
	Ms. Claire MAYS	RPRWM
	Mr. Claudio PESCATORE	RPRWM
	Mr. Uichiro YOSHIMURA	SRAN

ACRONYMS

ACRO	Association pour le Contrôle de la Radioactivité de l'Ouest – Association for the Control of Radioactivity in the West
ANCLI	Association Nationale des Commissions Locales d'Information des activités nucléaires – National Federation of CLIs
Andra	Agence nationale pour la gestion des déchets radioactifs – National Agency for the Management of Radioactive Waste
AOC	Appellation d'origine contrôlée – Guarantee of origin
ASN	Autorité de sûreté nucléaire – Nuclear Safety Authority
ASME	American Society for Mechanical Engineers
CCI	Chambre de commerce et d'industrie – Chamber of Commerce and Industry
CEA	Commissariat à l'énergie atomique – Atomic Energy Commission
CFTC	Confédération française des travailleurs chrétiens – French Confederation of Christian Workers
CGC	Confédération générale des cadres – General Confederation of Managers
CLI	Commission locale d'information – Local Information Commission
CLIS	Comité local d'information et de suivi du laboratoire de Bure – Local Information and Oversight Committee of the Bure Laboratory
CNE	Commission nationale d'évaluation relative aux recherches sur la gestion des déchets radioactifs – National Review Board on research on the management of radioactive waste
CNDP	Commission nationale du débat public – National Commission on Public Debate
CRIIRAD	Commission de recherche et d'information indépendantes sur la radioactivité – Commission for Independent Research and Information on Radioactivity
DRIRE	Direction régionale de l'industrie, de recherche et de l'environnement – Regional Directorate for Industry, Research and Environment
EdF	Electricité de France – Electricity of France
FSC	Forum on Stakeholder Confidence
GIP	Groupement d'intérêt public – Public Interest Groups
HLW	High-level waste
IRSN	Institut de radioprotection et de sûreté nucléaire – Institute for radiation protection and nuclear safety
OECD	Organisation for Economic Co-operation and Development

NEA	OECD Nuclear Energy Agency
NPP	Nuclear Power Plant
PIC	Programme d'information et de concertation – Programme for information and consultation
SIVU	Syndicat intercommunal à vocation unique – Public establishment of inter-communal co-operation
URL	Underground research laboratory
ZIRA	Zone d'intérêt pour la reconnaissance approfondie – Zone of interest for detailed investigation