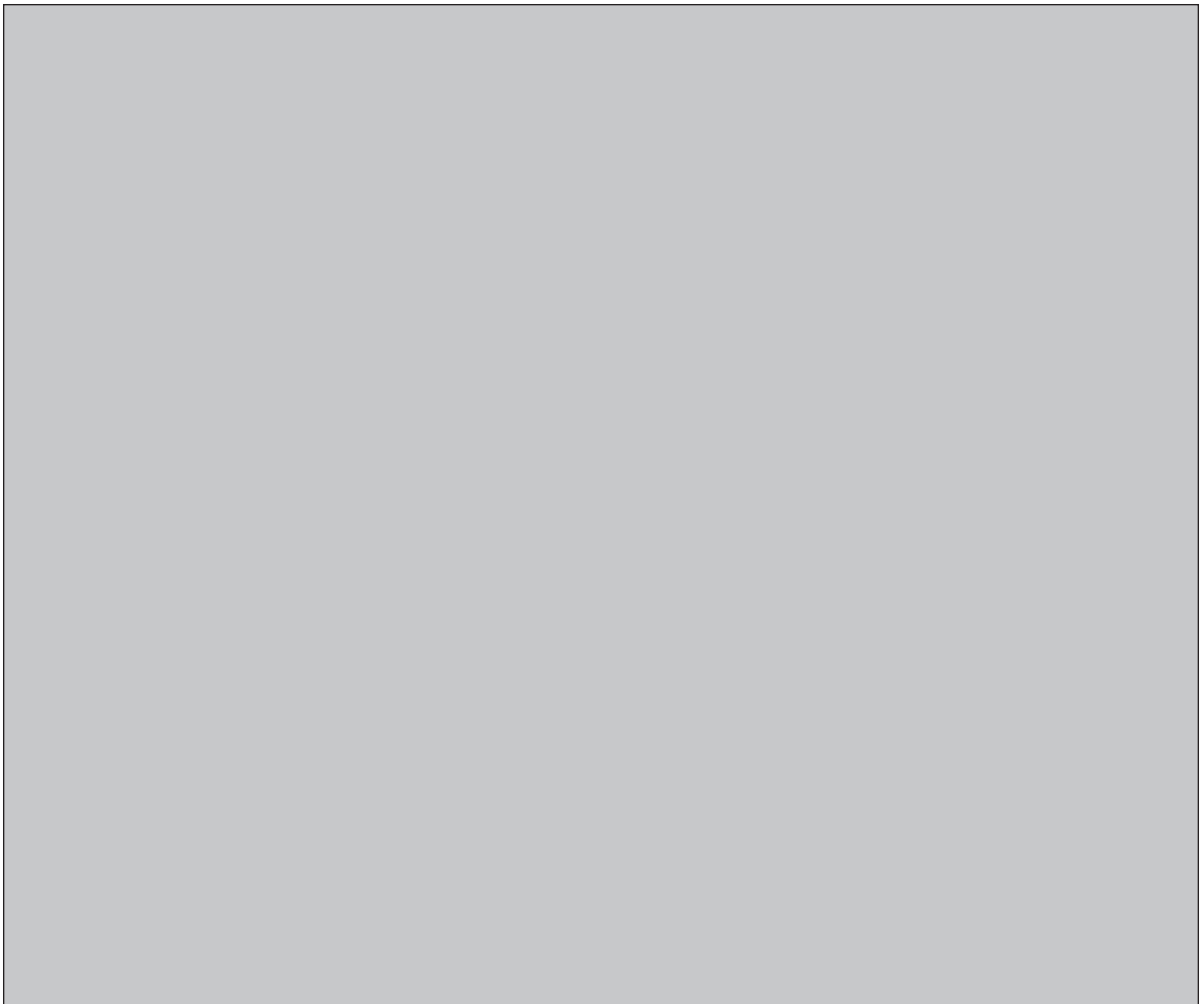


NWMO BACKGROUND PAPERS
2. SOCIAL AND ETHICAL DIMENSIONS

**2-5 OVERVIEW OF EUROPEAN INITIATIVES: TOWARDS A FRAMEWORK TO
INCORPORATE CITIZEN VALUES AND SOCIAL CONSIDERATIONS IN
DECISION-MAKING**

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NWMO Background Papers

NWMO has commissioned a series of background papers which present concepts and contextual information about the state of our knowledge on important topics related to the management of radioactive waste. The intent of these background papers is to provide input to defining possible approaches for the long-term management of used nuclear fuel and to contribute to an informed dialogue with the public and other stakeholders. The papers currently available are posted on NWMO's web site. Additional papers may be commissioned.

The topics of the background papers can be classified under the following broad headings:

1. Guiding Concepts – describe key concepts which can help guide an informed dialogue with the public and other stakeholders on the topic of radioactive waste management. They include perspectives on risk, security, the precautionary approach, adaptive management, traditional knowledge and sustainable development.
2. Social and Ethical Dimensions - provide perspectives on the social and ethical dimensions of radioactive waste management. They include background papers prepared for roundtable discussions.
3. Health and Safety – provide information on the status of relevant research, technologies, standards and procedures to reduce radiation and security risk associated with radioactive waste management.
4. Science and Environment – provide information on the current status of relevant research on ecosystem processes and environmental management issues. They include descriptions of the current efforts, as well as the status of research into our understanding of the biosphere and geosphere.
5. Economic Factors - provide insight into the economic factors and financial requirements for the long-term management of used nuclear fuel.
6. Technical Methods - provide general descriptions of the three methods for the long-term management of used nuclear fuel as defined in the NFWA, as well as other possible methods and related system requirements.
7. Institutions and Governance - outline the current relevant legal, administrative and institutional requirements that may be applicable to the long-term management of spent nuclear fuel in Canada, including legislation, regulations, guidelines, protocols, directives, policies and procedures of various jurisdictions.

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Overview of European Initiatives: Towards a framework to incorporate citizen values and social considerations in decision-making

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Ideally, radioactive waste management (rwm) develops through different phases from basic research to more focussed applied research and development and finally to the design and siting of proposed solutions. Experiences from the European programmes vary, however, and countries are at different stages of developing long-term solutions to their waste problems. There are examples of significant progress all the way to the siting of a final repository. For high level waste, one site has been selected in Finland, and in Sweden two sites are currently being investigated in detail, with the approval of the host municipalities. As in Canada, there are also in Europe examples of countries where the rwm programmes initially made good progress but where they have been forced to take several steps back due to local resistance or otherwise for social reasons.

This paper gives first an overview in section 1 of setbacks of rwm in certain European countries. In section 2 we turn to programmes where initiatives have been taken to take citizen values more into account in order to build more acceptable and stable rwm programmes. Some examples are mentioned where the problems mentioned in section 1 have resulted in a re-evaluation of the programmes, and we also go more into detail of the cases of Finland and Sweden. Section 2 also describes some initiatives of research character that have been taken in the European Union and otherwise on the international arena. Section 3 then tries to summarise key findings from the national and international activities and section 4 focuses on what I believe could be lessons learned of special interest to Canada and the NWMO study.

1. Setbacks of nuclear waste management programmes in Europe

The siting of radioactive waste installations has met public opposition in several countries. In the UK, the Government decided in 1997 to refuse the Nirex application to build a Rock Characterisation Facility (RCF) near Sellafield. In France the efforts to find a second site for an underground laboratory has been stopped. In Germany, the Gorleben investigations were also stopped due to distrust in officials and a lack of participation. In Switzerland, there have been negative cantonal referenda on the Wellenberg site in 1995 and 2002.

The UK Sellafield planning inquiry

The focus in UK is on intermediate level waste from nuclear power plants and from reprocessing at Sellafield, rather than high level waste and spent fuel. For high level waste, the UK policy has been to store the waste for at least 50 years before seeking a permanent solution. Developments in recent years, however, seem to indicate that more active measures will come also in this area.

For intermediate level waste, Nirex presented in 1987 the report "The Way Forward" (Nirex, 1987), which gave the policy of Nirex for a site selection process. A number of geological characteristics were considered. In 1989 Nirex had moved further with progressive steps in the site selection process to two main UK nuclear sites. In 1995 Nirex sought planning permission for a Rock Characterisation Facility (RCF) near Sellafield, West Cumbria. The Cumbria County Council, however, refused this application. Nirex appealed against the refusal, which forced a Planning Inquiry to take place.

The Inquiry was held, according to normal UK procedure, with an adversary format with Nirex, Cumbria County Council and others as opponents. The inquiry covered a large range of issues including the site selection process and "the safety case". The Inspector who led the proceedings reported in March 1997 to the Secretary of State for the Environment. Based on the report the Government decided to refuse the Nirex application for the RCF (Government Office for the North West, 1997).

There are probably many possible explanations to the Nirex failure in Sellafield. One procedural argument of the Cumbria County Council was that Nirex had entered a site selection process in fact without allowing the public to be involved and without any regulatory approval. Formally, the application from Nirex was to build an underground research laboratory at Sellafield, which did not require a licensing approval from the nuclear safety authorities. The RCF, however, was designed to add to Nirex's information about a possible repository site in advance of the company deciding to apply for development authorisation. Therefore, it was in fact a major step in selection of a site for a repository and not just for a laboratory, as was the formal ("material") argument by Nirex.

Furthermore, for the site selection, Nirex had used multi-attribute decision analysis (MADA) which is a quantitative decision analysis method that arrives at a preferred decision among a number of alternatives based on the importance and values of different factors. The weighting attributes were put into MADA with procedure and with weights that had been negotiated by an expert panel drawn together by Nirex. It was clear though, that the weighting of attributes, including transport costs, geology, post-closure safety and local experience, was a matter of value judgement more than science. If geologic attributes (especially the geological predictability) had been given higher values, Sellafield would have scored low in comparison with other sites. The County Council could thus argue that Nirex had followed an indefensible site selection process that involved the loss of sites with the most promising geology. The MADA exercise is a beautiful example of a method which looked very scientific but was applied with more or less hidden value-laden assumptions (Andersson et.al., 1998).

The French site selection programme

In France a period of successive problems resulted, in 1991, in a law that instituted a new approach to waste management in general, and site selection in particular, with responsibility,

transparency and democracy as lead principles (OECD, 2003, p 24). The new approach to site selection looked for consensus with, and involved actively, responsible territorial communities. A mediation mission by Mr. Christian Bataille, Member of Parliament, led successively to the appointment of one site for an underground laboratory, although the intention was that there should have been a second one in granite. Furthermore, the legislation stipulates three alternative research options (deep disposal, transmutation and sub-surface long-term storage) coupled to a coming decision in Parliament 2006. This fact together with the fact at least two alternative sites were looked for, had a high trust potential. However, now people start to perceive the one research site in Bure as an “operation to be” and the two research axes of transmutation and sub-surface long-term storage much less viable and less advanced than geological disposal (Westerlind et.al., 2003).

The Law institutes a local Information and Oversight Committee (CLIS) to be chaired by the

programme at the planning stage and to increase the transparency of decision-making. Although it is too early to evaluate, the new approach has received initial positive response.

In Sweden, initiatives towards a more communicative approach were taken by SKI about 1990 with the Dialogue Project (Andersson et.al., 1993). This was at a time when the SKB site selection programme had not yet taken form, however, it was evident that the nuclear waste experts within just a few years would have to deal with new “customers”, most notably potential host communities for a final repository. The core of the Dialogue project was a simulated licensing process which gave the participants a great deal of pre-understanding of procedures and arguments in a real decision-making process. The project also resulted in a recommendation to the government that NGO’s should be given economical support for their empowerment.

After the Dialogue project it was clear that transparency and public participation would be core issues for research and development for years to come. SKI and SSI thus launched the RISCOP Pilot Project (Andersson, Espejo and Wene, 1998) which was followed by the EU RISCOP II project (Westerlind, et.al. 2003). Within these projects the RISCOP Model for transparency, to which we will return later, was developed and tested.

In 1992, SKB announced Oskarshamn as the preferred site for an encapsulation plant for spent nuclear fuel and in 1995, SKB sent a request for a feasibility study for final disposal which was approved by the municipality. Now Oskarshamn is one of the two municipalities where SKB is conducting deep drilling to find a suitable site. Just after the 1992 announcement by SKB, the municipality leadership took the decision to be an active part in the program demanding a completely open process with full participation and influence of the municipality and the public. Independent funding for the municipality participation was a pre-condition to participate and funding was established by the government in 1994.

The very active engagement of the municipality has been summarized in what has been called the Oskarshamn Model (Carlsson et.al., 2001) with seven points: total openness and participation, the EIA best principles as framework, municipality council as the local client, the public as a resource, the regulatory authorities as “our experts”, the environmental groups as a resource, and stretching SKB and the regulators for clear answers. Early in the process an

empowerment comes in late introduces uncertainties about the relation between the national and the local processes.

In Finland, in December 2000, the Government on the basis of the application of Posiva, made a favourable policy decision, later ratified

part of the regulatory review in a critical phase of the site selection programme for a spent nuclear fuel repository. The project also evaluated how the hearing worked with respect to transparency (Andersson, Wene, Drottz Sjöberg and Westerlind, 2003). In this case the RISCUM Model was directly applied in the decision-making context.

COWAM (COWAM, web site)Ts27

communication and a systematic and comparative basis for the selection of risk management strategies. Risk management approaches like this can help increase the awareness about different aspects of complex risk issues provided they there are suitable societal structures in place that can use them for this purpose. If such structures are not in place the use of structured and broad but still technical tools will stay within the circles of expertise.

Governments increasingly recognise their reliance upon the active contribution of citizens in making better decisions and achieving policy objectives. Within the OECD, a programme of work has been undertaken under the auspices of the **PUMA (Public Management Project) Working Group on Strengthening Government-Citizen Connections** during 1999-2000 (OECD/PUMA, 2001). Two comparative surveys were conducted among 23 OECD member

where this is not the case, participatory technology assessment may play the role of the umbrella process.

3. Key Findings

Broadly speaking there is an overwhelming consensus among government agencies, policy

generally applicable to decision processes on technically complex issues with uncertain but potentially large and unfavourable consequences. The model was first developed in the RISCOP Pilot Study (Andersson et al. 1998), and has been used, further developed and tested in the RISCOP II project (Westerlind et al. 2003).

The model includes three basic elements: technical/scientific issues, normative issues and authenticity. *Technical/scientific issues* can be clarified with scientific methods. They relate to questions like "Is this true?" or "Are we doing things right?" *Normative issues* reflect what is considered fair and acceptable in society, what is legitimate. In an expert dominated area value-laden issues are often not openly explored. Instead they are discussed "under the surface", often hidden in expert investigation.

Authenticity is needed for trust; it has to do with consistency between the actions of a person (or an organization) and who the person (or organization) is, or the role in the decision-making context. If a stakeholder considers an organization to be authentic, he is more likely to trust its views and decisions, thus reducing his demands for technical details.

To achieve transparency there must be appropriate procedures (*transparency channels*) in which decision-makers and the public can validate claims of truth, legitimacy and authenticity. The procedures should allow *stretching*, which means that the environment of the implementer (of a proposed project), the authorities and key stakeholders is sufficiently demanding and that critical questions are raised from different perspectives.

As was shown by Swedish hearings on site selection in 2001 (Andersson, Wene, Drottz Sjöberg and Westerlind, 2003), the RISCOP Model can be used to support public events and decision processes for the sake of transparency. The hearing format that was developed was successful in many aspects such as a high level of involvement, the mental separation of levels of discussion and stretching without a too adversarial set-up. The methodology used for designing the hearings included active involvement of the hearing actors at the preparatory stage – an element that contributed to the fairness of the entire process. The methodology is available for use in any situation where a new step in a country's radioactive waste management programme is to be taken to enhance transparency.

Regulators role

It is important to have an independent regulator, with the capability of reviewing the safety assessment of the implementer, but experiences have shown that there is also a need to bring in the regulator early in the process (e.g. for site selection) and to maintain this involvement. There is strong connection between the regulator's role and the needs of the communities. In Sweden, communities want the authorities to be involved and they see the regulator's experts as the people's experts that should advise and help the people and the politicians. SKI and SSI have been involved from an early stage. They participate in the EIA group and play an active role in providing information on a community level.

Furthermore, as regulatory standards and criteria set the framework for performance assessment, it is important to open them up for public input. Efforts of the SSI in Sweden to establish a dialogue with citizens in potential host communities for a high level waste repository about regulatory guidelines were therefore made part of RISCOP II.

Communicating performance assessment

One of the core issues addressed in the RISCOT study has been how performance assessment (PA) can be made more transparent and what needs to be done to make it more accessible to the general public. To incorporate the value judgements of stakeholders into PA

and frameworks for comparing processes thus needs to take not just the characteristics of the processes themselves into account but also the contexts in which they are supposed to work.

Monitoring and retrievability

On the international arena, the concept of retrievability has been given much attention during recent years, and in several countries, like France, retrievability is considered important for public acceptance of a repository. However, experiences in the Swedish communities do not support the conclusion that the public sees retrievability as a safeguard against possible shortcomings in the disposal method. Citizens want, instead, clear statements from the regulators and the government that the proposed disposal method is safe, which indeed may not be consistent with the idea of retrievability. The experiences and perceptions on retrievability thus differ between countries. Again, taking the perspective of transparency, we should openly discuss the pros and cons of longer-term monitoring, reversibility and retrievability taking both factual and ethical aspects into account.

4. Lessons learned of potential interest to Canada and the NWMO study

Based on lessons learned from the diverse amount of European experiences, this section focuses on a few points that could be of special interest to the NWMO study in forming the future of Canadian nuclear waste management.

Narrow framing should be avoided

Often, early narrow framing of a complex issue like radioactive waste management leads to a decision-making basis not sufficient, or even relevant, for the final decisions. There will be frustration and inability to solve important societal problems. In an open discussion, the participants identify several particular issues as central to the problem at hand. People must hear each other out on these issues to achieve a common understanding that there are a variety of legitimate perspectives to consider. Most often narrow framing is referred to as a result of expert culture (technology, natural sciences), however, in there can also be social narrow framing. One way to avoid this is to find ways to uncover values that form assumptions and prioritise questions being addressed in expert investigations (which is what should take place when applying the RISCUM Model).

Vaccination against fragmentation

A re-defined expert role

The experts often have a role in framing the problem to be more or less a matter of science and technology, which in the end is not sufficient. The expert role should thus be redefined. In today's society we mostly operate within a technocratic model, which could be called the "experts-agenda paradigm". In a paper in 2001 I argued that for the sake of democracy we need to change to a new approach, which can be called the "values-first paradigm" (Andersson, VALDOR 2001). Instead of letting the expert community decide which questions are important, we must set the values on top of the agenda. However, we must also realize that the technical and scientific system of nuclear waste management must maintain its identity, otherwise safety might be in danger.

Often experts hesitate to break mental barriers and engage in active dialogue, but citizens often want access to the real experts rather than information departments. The willingness of experts to give up some of their control over the process and to include stakeholders' issues of concern in their assessments is a key to success both in the dialogue as such and in building a comprehensive and relevant basis for decisions.

Using technical tools for social issues

There is a danger that the widening of technical tools for risk assessment to include also social de

The importance of a process guardian

Ideally, communicative action, as compared to strategic action, of all parties would be to the benefit of radioactive waste management. However, the implementer (or any other stakeholder with control over the decision-making process) could use a seemingly communicative approach for concealed strategic action. This is why there needs to be a guardian of the process, having the task to maintain dialogue and transparency. Obviously this must be someone having authenticity and societal trust. Who can that be? In our exploration of European programmes, we have found no country where this is set in place in a perfect way. Experiences indicate that a court system is not the way to do it. One reason is that it creates a polarized situation in which all stakeholders act strategically to “win its case”, which may mean that certain pieces of information are not handled openly until the court process opens.

In Sweden, in practice it has been the regulatory authorities and (in the case of Oskarshamn) the municipality that have taken this role also with a great deal of trust from the public. One can argue that this is not an ideal situation since the authorities, and certainly a municipality, are to be considered as stakeholders having an interest in the outcome of the process. How the issue of process guardian can be handled is most probably a matter of tradition and culture and will therefore differ between countries.

Should we expect consensus?

Developing a systematic framework for the description of public participation processes is not a straightforward task. Sometimes there may be unrealistic expectations that public participation should lead to consensus about radioactive waste management solutions. However, the relationship between transparen

important to have clear more near term goals in order to keep the full engagement of both the technical project and involved citizens. This is why the concept of a step-wise process has become so important.

A word of caution

As we have already emphasized, we must not create expectations among citizens that in the end are not fulfilled. As Christian Vergez, Principal Administrator of the OECD Directorate for Public Governance and Territorial Development has expressed it (Vergez, 2003):

“While the benefits of engaging citizens in policy-making may be

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