EUROPEAN COMMISSION

Community Research

ARGONA

Arenas for Risk Governance

(Contract Number: FP6-036413)

Evaluation, testing and application of participatory approaches in the Czech Republic

Deliverable D21

Guidelines on approaches to siting a deep repository

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Date of issue of this report: 29/10/2009

Start date of project: 01/11/2006
Duration: 36 Months

Lead contractor for this deliverable: Nuclear Research Institute Rez plc
Revision: FINAL

Project co-funded by the European Commission under the Euratom Research and Training Programme on Nuclear Energy within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	X
RE	Restricted to a group specified by the partners of the ARGONA project	
CO	Confidential, only for partners of the ARGONA project	

Introduction

Based on the review of experiences in SEA and EIA in the Czech Republic summarized in Deliverable No.3 and the testing of novel participatory and dialogue approaches summarized in Deliverables No.7, 11 and 12 in this report a model for the siting process specifically in the Czech Republic, that takes into account the need for transparency and interaction with the public, within the framework of legal requirements is outlined. Lessons learnt are summarised and a road map specified.

The guidelines / recommendations in this report are proposed based on mapping the situation in the Czech Republic and experience gained in connection with the testing and application of novel participatory approaches and dialogue, but many of them are of general validity and can be applied in other countries outside the Czech Republic.

This reports links directly to Work package 6, where general guidelines for participation and transparency, reflecting institutional and cultural differences, are given – Deliverable No.22.

Guidelines based on review of SEA and EIA experiences

In the Czech Republic, provisions for EIA process (plans assessment) and SEA process (conceptions assessment) at the policy level were well established in the first EIA Act No. 244/1992 Coll. of the Czech National Council. Article 14 of this Act laid down the basic provisions for environmental assessment of 'development concepts' that are submitted to or approved by central administrative authorities in the sectors of energy, transport, agriculture, waste management, mining and processing of minerals, recreation and tourism. The EIA Act identified the National Water Management Plan and regional land use plans as belonging to the "concepts" that needed to undergo assessment. Otherwise, the generic term "concept" was neither defined in this Act nor in any other generally applicable legislation, although it was widely understood to refer to strategies, policies, plans or programmes.

There are increasing attempts to apply direct democracy in the area of the environment; this entails participation of individuals in decision-making processes (participation in administrative procedures, holding of a referendum, SEA and EIA). Decision-making should be moved as close as possible to those who are directly affected by the intended activity (the principle of subsidiarity). Therefore major groups of citizens were identified. These groups are as follows: NGOs, women, children and youth, minorities, local and regional governments, employees and their organisations, entrepreneurs, trade and industry, the academic community and farmers.

However, it is necessary to state that effective decision-making presumes a certain minimum qualification and must be rational. This is also connected with the development of human resources in the area of protection of the environment, which means not only preparation of professionals and administrators, but also broad environmental education and public awareness. This necessitates broad access of the public to information related to the environment and human health. This approach is frequently unacceptably limited with reference to business secrecy, etc.

The project of the deep geological repository will have to be assessed according to the Czech EIA Act. The basic guidelines stemming from review of SEA and EIA can be divided into several basic groups:

- a citizen as beneficiary of the outcomes of activities generating RAW
- a citizen as an object of RAW negative impacts on the environment
- a citizen as a participant in decisions concerning the RAW management

The general public could and can participate on the Concept and accomplishment of the individual subsequent steps in compliance with the valid legislation as follows:

a) at the level of political decisions by means of the democratic system of his representatives
b) at the level of the *Concept* and *Assessment* evaluation by participating according to the Act No. 244/1992 Coll.
c) at the level of the execution of selected constructions (particularly of the deep repository) by participating in the assessment of the environmental impacts of these constructions according to the Act No. 100/2001 Coll. (the EIA process).
d) at the level of the preparation of the territorial plans and within the framework of the land-use and building procedures according to the Construction Act.

Guidelines from testing of novel participatory and dialogue approaches

Testing and implementation of novel participation and dialogue approaches is an important part of the ARGONA project. The objective of this work package (WP5) is to demonstrate how a structured framework for transparency and participation can be designed for a real process (e.g., the deep repository site selection) by transferring the theoretical principles explored in other work packages to practical working arrangements. Within WP 5 of the following approaches were tested:

- **Focused science shops**

  The focused science shop was held on the theme: "Radioactive waste management and radiation risk in comparison with other hazardous waste and risks".

  The main goal of the focused science shop was to increase awareness amongst the public of actual and potential effects of radioactive and toxic wastes and to prioritise questions/uncertainties that people might have in this field. The following topics were discussed:

  – Differences in the general perception of nuclear waste in comparison with other toxic wastes;
  – General public awareness of the issue of nuclear waste management and other toxic wastes management;

- Management and ultimate disposal of radioactive waste and other toxic waste in terms of the technology employed;
- NIMBY effect.

A broader audience was selected with a suitable mixture of specialists and interested technical and non-technical peers including representatives from NRI, universities, Ministry of Industry and Trade, Ministry of Environment, State Office for Nuclear Safety and Radioactive Waste Repository Authority, representatives of communities and NGOs, and waste producers such as CEZ plc, etc.

- **Consensus panel**

The consensus panel was held on topic "Spent nuclear fuel management alternatives". The main goals of this consensus panel were as follows:

1. Identification of the main criteria relevant to the assessment of the existing alternatives and determination their importance (weight) from the perspective of all stakeholders;
2. Achieving at least a partial consensus on selecting the most suitable alternative (management of radioactive waste and spent nuclear fuel).

Similarly to the previous meeting (focused science shop), a broader audience was selected including representatives of NRI, universities, Ministry of Industry and Trade, Ministry of the Environment, State Office for Nuclear Safety and Radioactive Waste Repository Authority, representatives of communities and NGOs, and waste producers such as CEZ plc, etc. The action was held with the participation of foreign observers from Sweden, UK and Finland.

- **Interaction panel**

The interaction panel was held on the theme: "The Siting and Safety Case". The main goals of the interaction panel were to get participants input to the research in the Czech Republic for the development of a safety case (for final repository for high-level radioactive waste) and to learn the participants ideas that should be included in the safety assessment for the geological repository siting in the Czech Republic. The following issues were discussed:

1) Involvement of stakeholders in the process of formulating the safety case
2) Kind of information and arguments of primary importance for performance assessment

For this purpose a narrower audience was selected consisting mainly of experts that are involved in formulating the performance assessment and strategy for deep geological

repository siting (representatives from NRI, universities, Ministry of Industry and Trade, Ministry of the Environment, State Office for Nuclear Safety and Radioactive Waste Repository Authority and NGOs, and waste producers such as CEZ plc).

- **Application of the RISCOM model**

The RISCOM model was implemented in the Czech nuclear waste management mainly in the problems of deep geological repository siting.

In the first phase of the RISCOM model application (*Pre-understanding*), the RISCOM Reference group was established with the participation of all main stakeholders in the Czech nuclear waste management process. In addition to the nuclear industry and government bodies it includes representatives of potential siting communities and NGOs, sociology scientist and foreign experts from Sweden from Karita Research and Wenergy, who have experience with the implementation of this communication model in their country.

The role of the Reference Group was crucial for pre-understanding the learning process in the first phase of the RISCOM process. It is entitled and takes responsibilities for decision especially in the following areas:

- Search of methods for inciting an interest of the general public and responsible organizations
- Identification of levels and topics for meaningful dialogue
- Decision on format of dialogues and establishment of information channels.

The role of this reference group was crucial for preparation of a public hearing.

In the second phase of the RISCOM model application in connection with learning process, the first public hearing in the Czech Republic on the topic "Siting repository and recommencement of the siting investigation of the particular sites for deep geological repository" was organised. The following topics were discussed:

1) Why the Czech Republic and its inhabitants need the geological repository of HLW and SNF? What process of selecting the repository site shall guarantee the fairness and protection of rights of the affected communities?
2) What is the present situation of the geological repository siting process? What activities should proceed in the selected localities, what should their time schedule be, and what effect they will exhibit on the life in these localities (particularly in the period of survey and in the period of the actual building of the geological repository)?
3) What are the apprehensions and expectations of the representatives of the localities?

The basic guidelines stemming from testing and application of novel participatory approaches are as follows:

Stakeholders

The problems of the geological repository siting involve many branches – along to the safety criterion, on which the greatest emphasis is placed, also the sociological and economic aspects should be taken into consideration. Along to the technical experts and geologists also philosophers, sociologists, etc., who are able to prognosticate the development of the society from a long-term point of view, not only from the point of view of the period between the elections, should be integrated into the discussion.

Trust

To increase the activities of relevant state institutions in communication with the public in the field of nuclear waste management and enhance public confidence in the state institutions.

For any governance process, for any deliberative or transparency arena to be legitimate it needs to have a certain degree of trust among those affected, those participating and citizens at large. If a stakeholder does not trust the organization of a particular deliberative or transparency setting he will not take part and immediately it will lose legitimacy.

Political responsibility

To strengthen the political responsibility - a long-lasting consistent and clear political attitude of the government and government parties concerning the problems of the final disposal of spent fuel is lacking in the Czech Republic. The general public misses the necessary long-term guarantees.

To encourage participation of representatives of state institution such Ministry of Environment and Ministry of Industry and Trade, also representatives of government parties. This is one of the most important prerequisites in order that discussion would be relevant and meaningful and the conclusions obtained could be applied practically.

Increasing of public awareness

How and to whom to offer the relevant information required for the decision-making process in this field:

- Openly provide an objective and truthful information

- It is necessary to improve the communication between RAWRA and the communities and to make it more intense even though the situation already improved in a certain degree and those who wish can find any information
- Establishment of the public confidence to experts, surveillance bodies, and also to the political representatives – as it has been already stated any public confidence to experts and responsible administration institutions is lacking and in a certain degree there is a fear of corruption. For instance, the general public has a certain worry concerning the given installation safety and the methods for the execution of individual works connected with its construction.
- The experts should strive to provide the information in such form that it will be comprehensible to the general public.
- In the provision of information not to concentrate only to the selected localities but to address the general public as a whole.
- To give larger space to these problems in the public media with a high impact effects to the general public.
- An attempt to provide an open and meaningful communication on all levels and between all stakeholders, for instance by the application of the RISCOM communication model.

Faction leaders – Methods for affecting the public opinion from inside should be more applied, also by means of the so-called faction leaders – i.e., of a group of trustworthy representatives elected by the citizens of the given communities. The dialogue will be held between the experts and this group of trustworthy citizens. These representatives will then transmit the acquired experience and knowledge to their fellow citizens.

Mediation by demonstration – for instance, the mediation of scientific information to the general public by means of excursions to nuclear facilities as nuclear power plants, institutions with research reactors, radioactive waste repositories, underground laboratories, demonstration of models of developed facilities, etc.

Communication

It is necessary to define a suitable communication process - to create a structured dialogue between individual stakeholders. Selection appropriate topics with clearly formulated questions to ensure a successful course of the discussion - at each stage of the dialogue may be discussed various topics and various issues (other issues can be discussed

within the scientific community and others in the wider discussion with the public participation).

The selected format of communication should be flexible enough to enable a gradual unblocking of positions and attitudes of individuals with strong opinions who have a tendency to keep their opinions away from the arguments of the opposition.

For a meaningful dialogue is necessary:

- to provide a „safe space“ for discussion in the meaning of a process, or an arena, where all interested parties can move forward together to increase their understanding of the issues and also of their respective views without being committed to find common solutions. The RISCOM model provides such a safe space as the participating stakeholders together form events, such as hearings, on the basis of agreed principles. Other dialogue processes can be formed as “safe spaces” as well.
- Understandable language - necessity of a simple and for laymen understandable language for providing the professional information to the general public (e.g. understandable formulations of measures necessary for securing safety of and ways for its realization).

Mediator dialogue

Using a mediator dialogue (as an impartial and independent person managing the whole course of the discussion) to facilitate communication among interested parties during the discussion. This applies mainly in the discussions on contentious issues such as selection of appropriate nuclear waste management alternative or the deep repository siting.

- Primarily, mediator should be a “facilitator”. His role is to make the communication between all stakeholders with usually highly opposing opinions much easier. His only aim is to lead the participants to the meeting objective in spite of all pitfalls in the mutual communication between the stakeholders, in spite of all misunderstandings and uncertainties.
- Mediator does not take part in the discussion itself; he does not assess the ideas of the group members. He only endeavours to keep the speakers' presentations at the given topic and to provide the same possibility for every discussant to express his opinion. He incites the activity of the participants, focuses the energy of the group to the given issue and makes thus the meeting more effective. For preserving his own neutrality the mediator should be personally neither interested in the dispute nor involved due to his professional position. It means, he should not be a defendant or consultant of the stakeholders.

Public participation on decision-making process

A greater involvement of general public in the dialogue of all stakeholders and in the decision-making process using the following means:

- Participation of the general public by means of a comprehensive open communication and full information – a well understandable language is a prerequisite.
- Participation on the check-up of the geological repository siting process by means of independent experts chosen by the communities – RAWRA already offered this method of participation to the communities.
- To behave to the communities as to the partners – to respect the opinions of inhabitants, to ensure the right of the communities to withdraw from the process in any of its stages – one of the main NGO requirements.

A good participation process would be based on:

- shared language and understanding, in favour of collective learning
- the way how to respect and value the expression of different perspectives
- ensuring a regular feedback mechanism to those who contributed

Early public involvement brings big benefits. First it is matter of fairness, as it makes possible for all stakeholders to influence the process and to contribute with their perspectives at a stage when they still can be incorporated. Secondly, it provides not only an early warning system for potential conflict situations but also a chance to solve problems early. Thirdly, it can prevent, or at least decrease the likelihood of, narrow early framing which later shows up to be insufficient. In that way early involvement provides perspectives that could make the entire process more effective saving financial resources and time.

Example of early involvement of the public could be the process of selection criterias for the assessment of the alternatives of SNF and HLW management based on dialogue and consensus among all stakeholders. For already 10 to 15 years there exists an intense attempt among the European countries to launch a meaningful discussion and cooperation among all participants that are denoted by the term stakeholders. All those who are meant by this expression should cooperate on the formation of the basic body formulating these criteria. At present this is accomplished, e.g., under the auspices of OECD in close cooperation with ICRP. If the general public is a co-author of these criteria, it will also share on the responsibility. In other words, if the general public accepts these criteria and if all criteria contained in this apparatus are fulfilled, then the problem assessed in this process and the broad public should accept conclusions following from this assessment. This is true also for the field of the SNF and HLW management. In this process a set of criteria can be formed,

which could be accepted by the broad public. No argument will exist for the general public to take up a negative attitude provided that these criteria are fulfilled.

Media

To encourage media participation in events. It might be one of the methods for drawing attention to the issues relating NWM and to ensure greater interest and participation of general public and the responsible state organizations and, last but not least, of NGOs in these actions such as seminars, science shops or public hearings.

NIMBY effect

NIMBY effect ("Not in My Backyard") is an important common factor influence nuclear waste management. However, it is not possible to conclude that all the opposition of the public against the construction of a deep geological repository (approx. 90% of the localities' residents) in their territory or in its vicinity can be explained by means of this effect - it is not possible to over generalize the NIMBY factor. This would be too simplistic and a somewhat problematic attitude towards opposition. This may result in a dismissive view of opposition as such and its degradation in the eyes of proponents of the construction of a deep geological repository. There are various motives and reasons for the residents' refusal of the construction of a deep geological repository in their locality. The past events (seminars in the localities, public hearing) as well as public opinion surveys have shown that there are great differences among the attitudes of individual localities as well as among the citizens within these localities. Some representatives of the municipalities express the opinion that they will – under certain conditions – agree with the geological survey in their territory, other say strictly NO. However, the residents of those municipalities whose representatives are saying a strict No often have diverse opinions, motivation or incentives, which may be further developed. This provides space for further discussions and negotiations. It is necessary to analyse these incentives and to hold further dialogue and negotiations on the basis of these findings.

Motivation programs

It is also crucial to focus on the development of motivation programs – compensation of the negative impacts of the selection and construction processes of the geological repository into the community and region lives. It is important to prepare clearly defined

motivational programs, which will have support in appropriate legislation - they shall be embedded in the Atomic Act.

The so-called motivation programs are another way how to incite the public interest and to positively influence their attitude towards the radioactive waste disposal, siting of the geological repository, and nuclear power production in general. Investments into the infrastructure of individual communities in the localities selected for the geological repository siting and also of the communities in the vicinity of the already existing nuclear facilities, financial contributions to the budgets of the given communities, sponsoring of various cultural and sport events, adoption of lower prices of electric power for the inhabitants of the given localities, etc., could be included into the motivation tools. Some of these tools have already been used, e.g., in the case of building the spent nuclear fuel store in the NPP Dukovany.

Legislation framework

To change to respective legislation:

- To include the possibility to draw financial means from the nuclear account for the payment of financial compensations in the connection with the geological survey and construction of the geological repository.
- Greater public involvement in decision-making process - to consider the possibility of introducing a right of veto, as required by municipal representatives and NGOs *(According to the local administration representatives and NGOs the confidence atmosphere will be enhanced if the communities would have the right of veto in the decision-making process of the geological repository siting. The citizens would be assured that – be their decision of any kind – their decision would be respected)*.

Government Concept of handling with radioactive waste and spent nuclear fuel

To reconsider the Government Concept of handling with radioactive waste and spent nuclear fuel – to incorporate into it the principles mentioned above.

It is necessary to create a long-term conception with clearly defined rules and requirements concerning the process of selecting the locality for a deep geological repository. These conceptual materials should be prepared on the basis of a dialogue and agreement of all parties involved. The conception should have support in legislation so that it may not be easily interfered in, as it would be binding on individual governments changing with

individual electoral terms. A clearly defined strategy for getting the public involved in the process of deep geological repository siting should be part of the conception as well.

Utilization of the RISCOM model as suitable methodology for discussion among NWM stakeholders

The Reference Group as well as the Working Group were formed and functioned within the ARGONA project of EC as a test of the RISCOM communication model. Their activities were based on voluntary and non-committal membership of stakeholders' representatives. Thus it has been specified in the cooperation agreement signed by all members of the Reference Group. Even though individual members were delegated by their organizations, it was not always possible to consider their statements or attitudes as a binding declaration and an official standpoint of the ministry or organization in question. However, this did not have the same significance for the purposes of testing the RISCOM communication model, as it will have for prospective continuation of the activities of the Reference Group. The practical impact of adopted conclusions and recommendations would be thus very limited.

It is necessary to establish the RISCOM Reference and Working Groups as part of the process of selecting the location for the deep geological repository. All delegated members should be authorized to express the official standpoints of their organizations and to propose possible solutions, which would be subsequently discussed at higher levels. At least the Working Group should be legalized/institutionalised; it should be provided with a certain institutional background, e.g. by means of an organization such as RAWRA or the Ministry of Industry and Trade or the Ministry of the Environment. The Reference Group could then remain on the basis of a voluntary association of representatives of individual parties involved.

Proceeding step by step and set smaller goals

Proceeding step by step and set smaller goals - The current situation in the field of NWM in the Czech Republic makes it impossible to achieve consensus among all stakeholders on controversial issues, such as the siting of the deep repository or selecting the appropriate alternative to nuclear waste management. Therefore in the present stage it is important to ensure a space for open and meaningful dialogue about these issues, exchange views and explain the positions among all stakeholders rather than to try to achieve consensus upon any terms.

Financial resources

Many of the good examples of public participation have been developed and used entirely without new laws or conventions. However, important to point out in this optimistic context is that the opportunities to form new initiatives are dependent on resources. The access to and regulations around resources is vital for the outcome of the processes of participation and transparency. Sufficient financial resources must be also provided for research and development programmes, which should clearly demonstrate to public that the best available technologies are applied for disposal of radioactive wastes and that health of people and the environment is protected for the whole time of hazard coming from radioactive wastes.

Abbreviations used:

SNF – Spent nuclear fuel

HLW – High-level waste

NPP Dukovany – Nuclear Power Plant Dukovany

RAWRA – Radioactive Waste Repository Authority

OECD - Organisation for Economic Cooperation and Development

ICRP - International Commission on Radiological Protection