SKI Report 2003:32

Research

Design and Evaluation of Public Hearings for Swedish Site Selection

A Report from the RISCOM II Project

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Foreword: RISCOM II project overview

RISCOM II is a project within EC's 5:th framework programme. The RISCOM model for transparency was created earlier in the context of a Pilot Project funded by SKI and SSI and has been further developed within RISCOM II. RISCOM II is a three-year project, which started in November 2000.

Objectives

The overall objective is to support transparency of decision-making processes in the nuclear waste programmes of the participating organisations, and also of the European Union, by means of a greater degree of public participation. Although the focus has been on nuclear waste, findings are expected to be relevant for decision-making in complex policy issues in a much wider context.

Description of the work

RISCOM II has six Work Packages (WPs). WP 1 has undertaken a study of issues raised in performance assessment to better understand how factual elements relate to value-laden issues. There has also been an analysis of statements made by implementers, regulators, municipalities and interest groups in actual Environmental Impact Assessment (EIA) and review processes within Europe. In WP 2 an organisation model (the Viable System Model) and a method (VIPLAN) have been used to diagnose structural issues affecting transparency in the French, British and Swedish systems. In WP 3 a special meeting format (Team Syntegrity) has been used to promote the development of consensus and a "European approach" to public participation.

In WP 4, a range of public participation processes have been analysed and a few have been used in experimental testing. A schools' web site has been tested with the aim of understanding how information technology can be utilised to engage citizens in decision-making. In WP 5 a hearing format has been developed, that allows the public to evaluate stakeholders' and experts' arguments and authenticity, without creating an adversarial situation. To facilitate integration of the project results and to provide forums for European added value, two topical workshops and a final workshop have been included in the course of the project (WP 6).

This report

Public hearings were held in the Swedish municipalities of Östhammar, Tierp and Älvkarleby, Hultsfred and Oskarshamn and in Nyköping in February of 2001. The municipalities had taken part in feasibility studies, conducted by the Swedish Nuclear Fuel and Waste Management Co. (SKB), in the previous years. The hearings were organised by the Swedish regulatory authorities, i.e. the Swedish Nuclear Power Inspectorate (SKI) and the Swedish Radiation Protection Authority (SSI) and aimed at

complementing the authorities' reviews of SKB's work and plans. Central themes of the hearings were SKB's choice of municipalities for the next phase of the program to build a spent nuclear fuel repository, and their choice of method for this work.

Representatives of the municipalities participated in the planning of the hearings, which were guided by the RISCOM model.

This report presents a background to the hearings, a brief introduction to the RISCOM model and how it was used to design the hearings. The report also contains an analysis of the hearing context. Finally, success factors are identified as well as suggestions for the design of future hearings in the Swedish nuclear waste management programme.

Participants in RISCOM II

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Swedish Radiation Protection Authority, SSI, Sweden
Swedish Nuclear Fuel and Waste Management Co., SKB, Sweden
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Posiva Oy, Finland
Nuclear Research Institute, Czech Republic
Syncho Ltd, UK (sub-contractor)
Diskurssi Oy, Finland (sub-contractor)

Project information

The European Community under the Euratom 5:th framework programme supports the RISCOM II project, contract number FIKW-CT-2000-00045.

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1. Introduction

Public hearings were held in the Swedish municipalities of Östhammar, Tierp and Älvkarleby (in Norduppland), Hultsfred and Oskarshamn (in Småland) and in Nyköping (Södermanland) in February of 2001. The municipalities had taken part in feasibility studies, conducted by the Swedish Nuclear Fuel and Waste Management Co (SKB), in the previous years. The hearings were organised by the Swedish regulatory authorities, i.e. the Swedish Nuclear Power Inspectorate (SKI) and the Swedish Radiation Protection Authority (SSI), and aimed at complementing the authorities' reviews of SKB's work and plans, called FUD-K [1]. Central themes of the hearings were SKB's choice of municipalities for the next phase of the programme to build a spent nuclear fuel repository, and their choice of method for this work. Representatives of the municipalities participated in the planning of the hearings, which were guided by the RISCOM Model.

In this report we give a background to the hearings, we introduce the RISCOM Model and how it was used to design the hearings, we then analyse the hearing context with a systems analysis approach. Finally, we describe the hearing agenda and evaluate the results with respect to transparency.

2. Hearings as part of the regulatory review

In general, Sweden has not a long history of using hearings in decision-making. In the area of nuclear waste management and disposal hearings have so far been rarely used. In 1997 and 1998 two public hearings were arranged by SKI in conjunction with the licensing of the enlargement of the Central Interim Storage for Spent Nuclear Fuel, CLAB. These hearings showed that hearings could improve the decision-making process. This conclusion was also supported by the results of the RISCOM Pilot Project, jointly launched by SKI and SSI in 1996 [2].

In 1999 SKI and SSI decided to include hearings as a component in the review of the implementing organisation's (SKB) proposal of candidate sites for a spent nuclear fuel repository.

As hearings are not mandatory in the Swedish legal framework, it was necessary to develop a format for the hearings which could be beneficial to the authorities, municipalities, SKB and, to the extent possible, also to other interested parties. In the year 2000 SKI and SSI started a research project for developing a suitable hearing format, and engaged in dialogue with SKB and the municipalities for that purpose [3].

The primary target group for the hearings was the municipalities since they, at a later stage, were to decide whether to participate in site investigations or not. All municipalities engaged in the siting process had formed reference groups for monitoring and reviewing SKB's studies, and for building local competence and for preparing municipal decisions. Typically, the reference groups consisted of politicians, representatives from the local administration and various interest groups (e.g. labour unions, local trade and industry, and environmental groups). The municipalities were thus well prepared and had the knowledge necessary to adjust the hearings to local needs.

All municipalities were represented in SKI's and SSI's reference group for planning the hearings.

3. Critique to public hearings

Public hearings and Public inquiries are a formal part of decision-making processes in several countries, e.g. the US, Canada and Great Britain, are they are perhaps the cheapest, easiest and most common form of participation. They are also one of the oldest participative procedures. According to Renn et. al. [4] the earliest record dates to London in the year 1403 [5].

Although Renn ET. Al. do not include public hearings in their review of different participatory processes, they refer to a number of critical comments [4, page 24]:

> *- To regulatory officials, experts, and project sponsors, the public hearing hall is a battle zone [6].*
>
> *- The EPA Community Relations Handbook notes: "The public hearing can easily become an adversarial confrontation" [7]. This is probably due to both the structure of discourse within the public hearing process and the timing of their use in the decision making process.*
>
> *- Hearings have been criticized for being unfair. Hadden [8] notes several failures. First, they are usually held late in the process when public impact can be, at best, minimal.*
>
> *- Only a very small proportion of the population has an opportunity to speak at the hearing.*
>
> *- The structure of the event reveals its implicit communicative bias as experts stand on a stage above the citizens.*
>
> *- Hearings are held primarily to satisfy legal requirements, rather than really promote public input. Checkoway [9] found that low rates of public participation were due to weak pre-hearing procedures, poor and overly technical presentations of information, a bias of outcomes favouring participants with economic stakes, and minimal evidence that participation affects policy.*
>
> *- In recent experience, citizens commonly used the public hearing forum to embarrass their opponents, to issue symbolic messages, and to make a show of power.*

Renn et.al. also present arguments in favour of public hearings [4, page 25]:

> *"They do offer citizens an opportunity to get first hand information about government and project proponents' intentions. They also offer administrators an opportunity to hear about contending interpretations and interests directly from the people. As forums held to strict legal requirements, hearings provide an excellent setting for citizens to get hard answers from the project sponsor, developer, or regulatory agency."*

Others have similar critical comments on public hearings, as they are used in the U.S. In a report by Resources for the Future [10] it is concluded that hearings are not suitable to meet a number of basic requirements for good public involvement. For example they seem to encourage participants to take extreme positions and therefore they do not reduce conflict, they involve organised interests rather than members of concerned public, and they are sometimes used to defend agency decisions rather than for involving the public.

The RISCOM Pilot study compared the Swedish and UK systems for decision-making in controversial matters. A problem with the inquiry approach as concluded in the final report [2], see also [11], is that the adversarial situation does not favour openness and dialogue between stakeholders, because they may not be willing to give away positions (in order to "win the case").

Public hearings and inquiries as discussed so far are legalistic, and convened by government under legal statute. In our case, however the situation was different. There were no legal requirements on public hearings in the review stage of FUD-K, and consequently there were no requirements on how they should be set up. In the design of a suitable hearing format for this situation, we could learn from the critique but also from positive elements in a hearing situation. Potential problems that had to be dealt with were adversary conflict, unfairness in agenda and rule setting and dominance by strong actors. Positive elements to take care of were the questioning of all actors (essentially a test of authenticity), opportunity for hard test of arguments, publicity and openness for citizens, and opportunity for the citizens to express their concerns.

4. Requirements on transparency

The core of the RISCOM Model developed by Espejo and Wene (see references below) is that transparency requires communicative action. To understand the meaning of communicative action, its relation to decision processes and the requirements on such processes, the model rests on achievements within two research disciplines [see 2, 12 and 13]:

- *Theory of Communicative Action* [14]. The work of Habermas is used to clarify the meaning of communicative action for a democratic, participative decision process and also provides a framework for discussing such processes. The theory fulfils an important normative role in the RISCOM Model by distinguishing transparency from strategic or instrumental action.
- *Cybernetic Theory of Recursive Organisations* [15-16]. Cybernetic theory provides understanding of the network of interactions which produce an organisation and the role of these interactions in the participative decision process. The theory also fulfils an important normative role by identifying organisational requirements for participative processes.

The RISCOM Model for transparency includes three basic elements: technical/scientific issues, normative issues and authenticity. In the old view, transparency meant explaining technical solutions to the stakeholders and the public. The task was to convince them that solutions proposed by implementers and accepted by regulators were safe. From this point
of view, transparency was a matter of packaging technical information. However, major decisions on complex issues involve both technical/scientific and value-laden elements. The decisions will improve in quality if it is made clear to the public and the decision-makers
how the two elements interact.

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, such as nuclear waste management, value-laden issues are often not openly explored. Instead they are discussed "under the surface", often hidden in expert investigation.

Authenticity is what builds trust; it has to do with consistency between the actions of a person (or an organisation) and who the person (or organisation) is, or the role in the decision-making context. If a stakeholder considers an organisation 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 in which decision-makers and the public can validate claims of truth, legitimacy and authenticity.

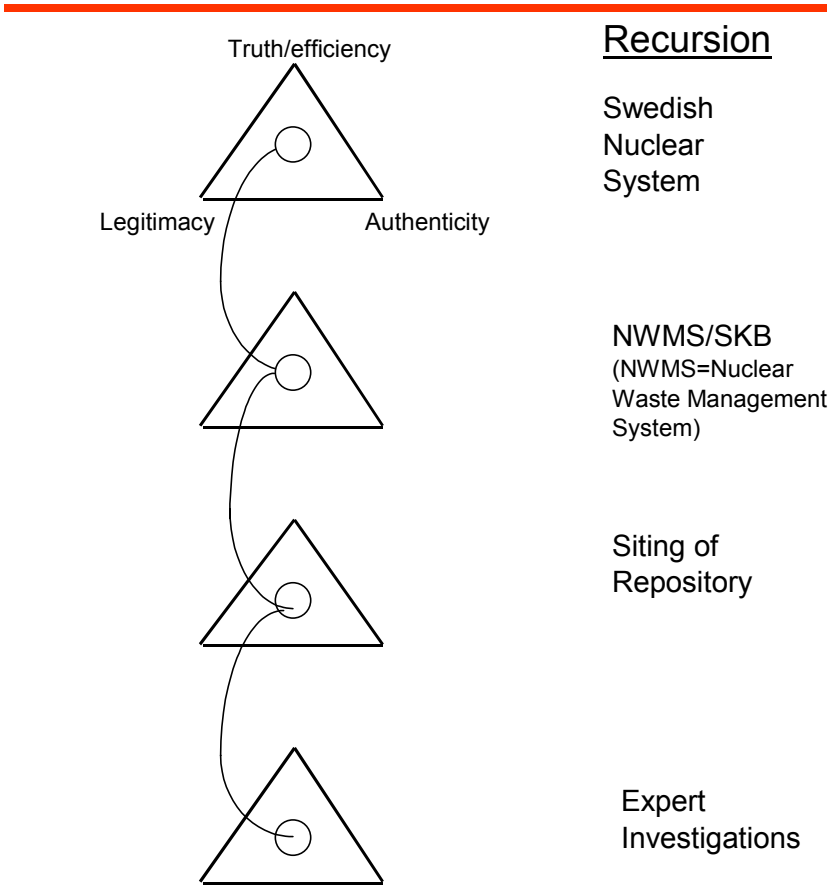
Transparency is strongly linked with public participation. Transparency needs public involvement – and meaningful public involvement cannot take place without transparent procedures. This is a learning process that requires activities both among the stakeholders and within the implementer. We can summarize those activities in the expressions “common sense” (called “wisdom of the people“in [13] and “stretching the implementer” [2 and 17]). The first activity refers to the way the stakeholders observe the day-to-day actions of the implementer and from them assess his authenticity and identify issues to be clarified.

The concept of "stretching" means that procedures have to be developed to ensure that the environment of the implementer (of a proposed project) and the authorities is sufficiently demanding and that critical questions are raised from different perspectives. Stretching refers to the amount by which the discussions with the stakeholders challenge the internal dialogues on policies and actions within the implementer’s organisation and lead to rethinking about goals and means.

In the RISCOM Model, transparency is the outcome of ongoing learning processes building on communicative action. The processes take place at different levels, which are interconnected but autonomous in assessing and judging the truth and legitimacy in the claims made by the implementer as well as the authenticity of the implementer and other major interveners in the process. The levels identified for the Swedish Nuclear Waste Management System in the RISCOM Pilot Project [2, 12] are shown in Figure 1. The dialogues on the different levels thus serves to clarify claims of truth, legitimacy and authenticity. It may not be possible to separate those claims, that is a claim to truth may rest on assumptions on the correctness of certain values and norms. One important outcome from the process is the identification of such value-laden issues which are hidden in seemingly pure expert investigations. The dialogues between experts, stakeholders and implementer on these issues raise huge complexity and the identification of meaningful and autonomous levels for discussion is necessary to handle this complexity.

A constraint on the debate about value-laden issues may be that the area historically has been defined as a specific type of problem, for instance, fact-finding within a scientific discipline, improvements in scenario methodology or mathematical modelling. Within such “frames” questions on legitimacy and authenticity may appear as irrelevant. Nuclear waste management was early framed as an expert area and value-laden issues have often been hidden in seemingly objective expert investigations. Most of the hearing participants had this framing. Extra efforts were therefore needed for the re-framing of issues. One could say that it is a purpose of the learning processes to reframe nuclear waste management to make it accessible to a participative decision. Such a reframing is necessary for transparency. The RISCOM Model points to two important features of such reframing, namely the need to find levels of meaningful discussion and the need to clarify claims of truth, legitimacy and authenticity for issues identified on these levels.

Figure 1: Levels for Meaningful Dialogue or "Unfolding Complexity" -The Swedish Example



5. Application of the RISCOM Model

The RISCOM Model identifies several important features for a hearing process, which should contribute to transparency. The process should provide for levels of meaningful dialogue. On each level, the procedures for the hearing should open the stage for the "common sense" and provide for discussions to clarify claims of truth, legitimacy and authenticity.

Ideally, the levels of meaningful dialogue should be determined through dialogues between all involved which have a stake in the decision. In a real situation, available time and resources reduce the possibilities for consultations. The effect of these constraints should, however, not be exaggerated. The hearing appears in a historical situation and has been preceded by earlier discussions and decisions, which are reflected in regulatory frameworks. Levels of meaningful dialogues have emerged through the step-wise approach taken to resolve the nuclear waste issue in most countries. In the Swedish case, the step-wise process shows a clear continuity and stretches over three decades. One may regret the lack of transparency in the historical process, however, in order to make the hearing manageable it seems necessary to accept its results.

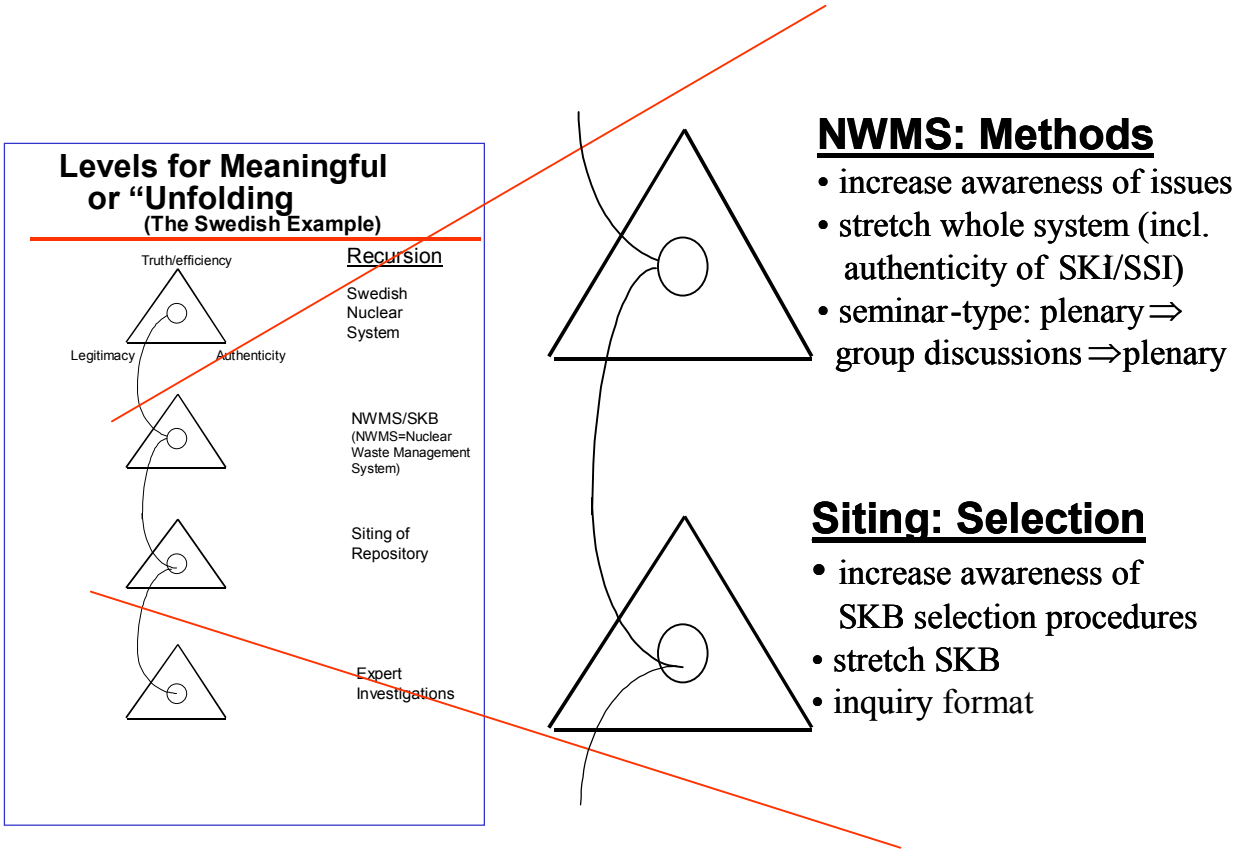
To prepare the hearings the following procedures were used:

The hearings were prepared by a Working Group lead by the SKI and SSI. It included representatives from the Ministry of the Environment and from SKB and two consultants to SKI. The proposals from the group were discussed in a Reference Group consisting of politicians and civil servants from the municipalities proposed by SKB as candidates for detailed investigations for a final repository for high level nuclear waste. This Reference Group thus contained representatives for stakeholders in the municipalities and the discussions in the group provided consultations on the set up of the hearings. The final decisions on process and procedures for the hearings were taken jointly by SKI and SSI.

It was agreed that the hearings should take place on two levels: the nuclear waste management system (the selection of method), and the site selection system. It was crucial that these levels were separated because otherwise there could be a serious collapse of the entire hearing in terms of transparency. There can be different means to make this happen, e.g. 1) different hearing places for the two levels, 2) different timing, and 3) different formats, maybe group discussions for the waste management level and a more traditional hearing format for the site selection level. In our practical case all these methods were used.

The levels for meaningful dialogues were discussed in the Reference Group and found adequate. The Reference Group thus confirmed the interpretation made by the Working Group of the historical process crystallising these levels. The layout of the hearing was also presented and discussed at a public town meeting for the three northern municipalities a month before the actual hearings. The remit to SKI from the Swedish Government focused on siting and methods to acquire a safe repository and the decision

Figure 2: Two Recursions



was taken by SKI to set up two-day hearings in the communities with one day dedicated to methods and one day to siting, as indicated in Figure 2.

6. The need for trust and fairness

It was believed that success of the hearings was dependent on trust in the overall process among the involved stakeholders and municipality citizens. Renn et.al. [4] suggest that trust is promoted when:

- there is a high likelihood that the participants will meet again in a similar setting
- interaction takes place face-to-face in regular meetings over a reasonable period of time and people have a chance to get to know each other
- participants are able to secure independent expert advice
- participants are free to question the sincerity of the involved parties
- citizens are involved early on in the decision-making process
- all available information is made freely accessible to all involved
- the process of selecting options based on preferences is logical and transparent
- the decision-making body seriously considers or endorses the outcome of the participation process; and
- citizens are given some control of the format of the discourse (agenda, rules, moderation, and decision-making procedure)

Clearly the first two conditions could not be met if we see the hearing as a single event. However, they should be seen as part of a long-term process with Environmental Impact Assessment (EIA), reviews of SKB's RD&D-programmes, various meetings in the communities in which SKB and the authorities take part etc. This context of the hearings must therefore be emphasized.

The third condition has been met to considerable extent in the Swedish system with the funding of the municipalities taking part in the feasibility studies. This funding has made it possible for the municipalities to involve e.g. NGOs as groups in opposition to nuclear power and the siting programme. The extent to which NGOs had taken part in municipality activities had varied though.

The last two conditions are important for the success of the hearings. The authorities need to be sincere in their actions to seriously consider issues raised in the hearings. The last condition is a requirement for a fair process. Renn et. Al. discuss this in terms of fairness in
1) agenda setting, 2) rule setting and 3) discussion.

Considering theses factors of trust, it was important to make clear how the hearings were embedded in the FUD-K review but, maybe even more important, in the long term decision process, which includes public participation and regulator visibility in the local arenas.

Fairness requires the actors to be able to have real possibility to influence the rules and the agenda for the hearings. This was the main reason for having a reference group with municipality participants to discuss these issues well in advance of the hearings.

7. Systems analysis of hearing functions

7.1 A methodology for naming the system (TASCOI)

The starting point was that we had a common shared "world view" within the Reference Group. The shared world view regards the need for transparency in a democratic decision process and ideas on how this transparency can be achieved. These ideas are expressed by Andersson et al. in Chapter 6 of [2] and is further explicated by Wene and Espejo in [12].

During the project there were occasions to discuss the world view with its definition of transparency, both to clarify these ideas further among ourselves and maybe to modify them. However, we saw no need now to start a discussion on identifying the system for transparency by problematising our definition. Rather the task was to name the consequences of our shared ideas and thus make explicit our grounded ideas on the properties of the system needed to provide transparency.

Espejo et al [16, p 219] propose six questions whose answers "name" or identify a system. The participants in the Reference Group needed to provide common answers to these six questions in order to make explicit their shared view of the system for transparency. Answering these questions sets up a basic frame of reference for further work and should guide the design of procedures for the hearings. The six questions can be summarized in the mnemonic TASCOI (Transformation, Actors, Suppliers, Customers, Owners, and Interveners) and are as follows:

- Transformation: What inputs are transformed into what outputs?
- Actors: Who carries out the activities entailed by the transformation?
- Suppliers: Who are, or would be, the suppliers of inputs to make possible the transformation?
- Customers: Who are, or would be, the immediate customers for the outputs of this transformation?
- Owners: Who have or would have an overview of the transformation?
- Interveners: Who define or would define the context for the transformation?

The outcome of discussions within the Working Group and the Reference Group should provide the shared answers to these questions. In fact the analysis needs to be first for the reference group and then for the hearing itself. To start this discourse we suggested some preliminary answers in the following.

7.2 Creating a fair framework for the hearing

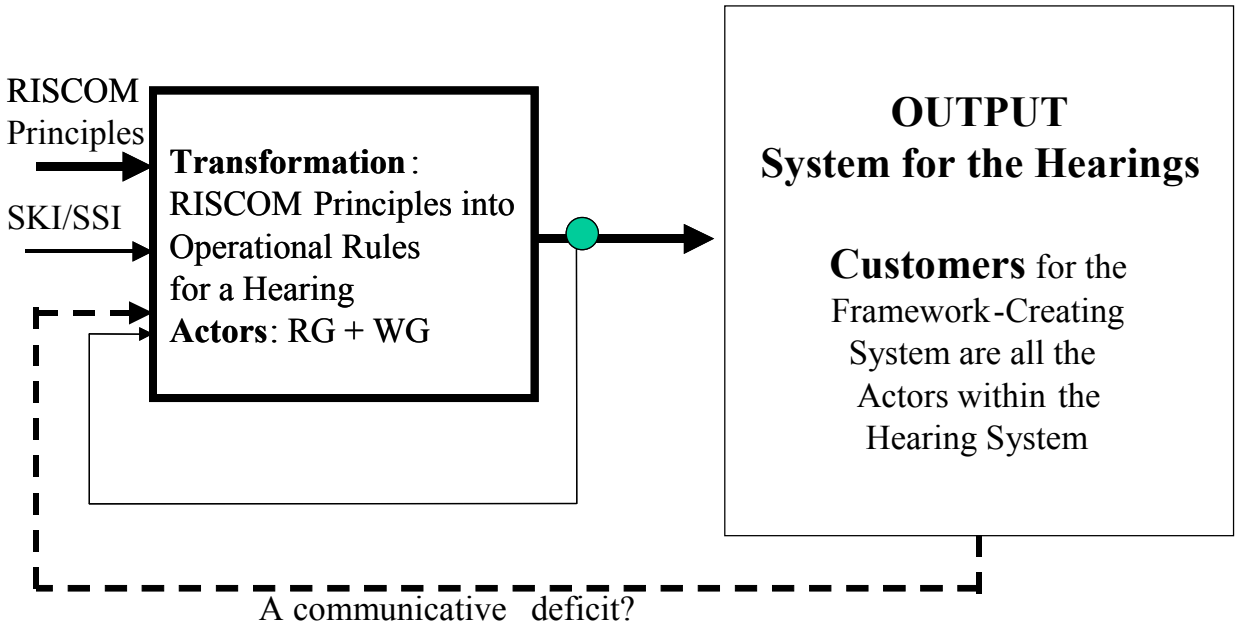
The Reference Group and the Working Group were charged with the task to set up the system for the hearing - they had to create the system for "performing the public hearings to provide transparency to decisions on siting of a repository for spent nuclear fuel". We will refer to this system as the RISCOM System. According to the RISCOM principles, a major part of the work within this system is to unfold the complexity of the total system for managing the spent nuclear fuel, find the proper recursion for the

hearing within the communities from this unfolding and then develop the agenda based on this unfolding. Ideally, this process should proceed in the same way as the hearings; however, resources were not available to perform a "hearing to set up a hearing".

This means that the Reference/Working Group must not only act as guardian for the process within the Hearing System, but must also provide substance to the content within this system, primarily in the form of agenda and distribution of roles within the Hearing System. It is important that the work to provide this substance is well documented. It is crucial for the integrity of the Hearing System and its claim to transparency, that the processes within the RISCOM System are easily explainable and accessible.

We should start by making a TASCOI also for this system.

Figure 3: TASCOI
System to create a fair framework for the hearings



Transformation

There are two important inputs to the RISCOM System that have to be transformed:

- The RISCOM principles: These principles need to be transformed into operational rules for setting up a hearing

- The option to set up a hearing should be realised in a hearing following the RISCOM principles

Actors

The actor was the Reference Group. Further engagement of persons within the communities as actors improved transparency.

Suppliers

SKI and SSI

Customers

Prime customers are the actors within the Hearing System

Owners

SKI and SSI, but also the municipalities

Interveners

The actors and owners will decide on who will be allowed to intervene in the transformation. However, it is in the interest of the Hearing System that the set of interveners is as wide as possible.

7.3 The hearing

Transformation

Transformation is initially the most important question, because it defines the substance with which the system is working, and what it makes to happen in the real world. The point of departure should be the RISCOM definition of transparency. This definition stipulates that three things should happen in the real world:

- Stakeholders' awareness should increase
- The implementer should be stretched
- Claims to truth/efficiency, legitimacy and authenticity should be clarified

For all of this to happen, communication channels should be open and explored. There seems therefore to be three main inputs to the system that has to be transformed: Stakeholders, Implementer and Claims. For transparency, and ongoing transparency during the further process all these three transformations seem equally important. There is a distinction between the two first inputs and the third, however. The two first inputs

consist of individuals and organisations, or in systems jargon, "Human Activity Systems (HAS)". Our system for transparency should challenge these individuals and organisations to increase their awareness and stretch them to respond to stakeholders demands. The two first transformations thus indicate that the system is a **learning system** for stakeholders and implementer.

The third input and its transformation are more abstract, although from the point of view of the owners of the system, and from the legal-institutional point of view, it is the reason for setting up the system. However, it is impossible to see this input and its transformation as independent from the other inputs and transformations. At the start of the process, the implementer is claiming that his proposed repository will be safe, that his siting procedures are legitimate and that he is authentic. A wanted output from the system is that stakeholders and implementer agree that these claims have been clarified through open and free communications. This will not happen unless stakeholders and implementer are transformed.

The transformations in the systems must thus happen on two levels which must interact with each other: the need to clarify the claims guides the actions of stakeholders and implementer, and the clarification is achieved through stretching and increased awareness of implementer and stakeholders. The system is thus not only a learning system, the third output also makes it into **a decision-supporting system**, which is of course what owners are willing to pay for. With reference to the three decision models proposed by Habermas [18] and discussed by Wene and Espejo [12], it is, however, a very specific decision-supporting system. It does not lend itself to the decisionistic or technocratic models, but is a tool for the pragmatistic model for decisions.

Actors

Human Activity Systems have the capacity to reflect over their own purpose and behaviour and to change them, that is, they can learn. It is in their learning capacity that stakeholders and implementers become major actors, providing the activities that make the transformation happen. Other important actors are the reference and working groups, experts called to witness, moderators and rapporteurs of the hearing, and media in so far as they really actively engage themselves in the process (otherwise they just become interveners).

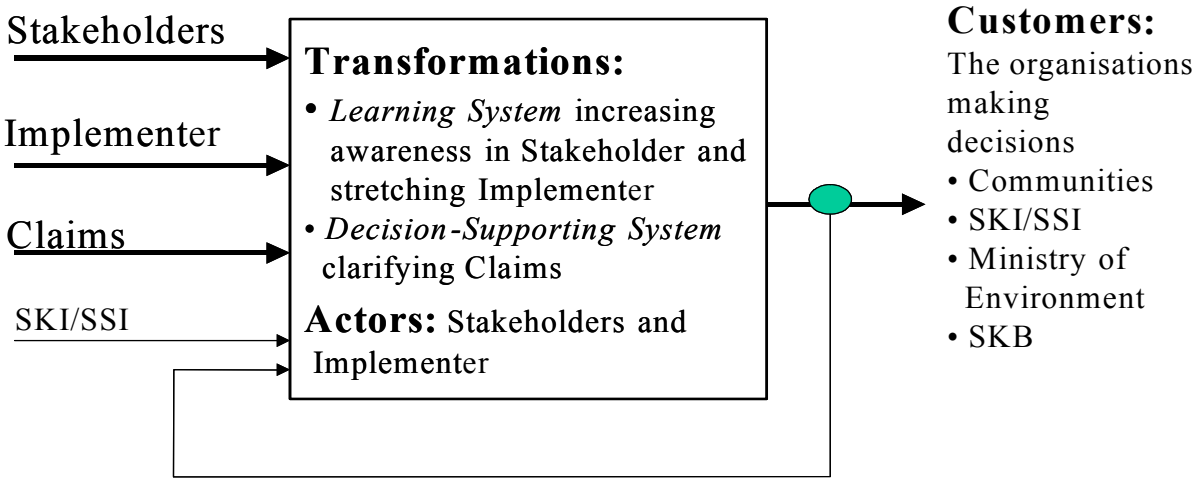
Suppliers

SKB is of course a major supplier for the third input. However, notice that following our analysis of transformations, nothing will happen unless SKB and stakeholders also supply *themselves* as inputs for the transformations. Universities, research institutions etc may be suppliers of auxiliary inputs.

Customers

The bodies preparing decision and making the decisions will be major customers. This includes SKI, SSI, communities and Ministry of Environment.

Figure 4: TASCOI
System for the Hearings



Owners

SKI and SSI are the major owners of the system. However, the communities also have ownerships.

Interveners

Concerned groups are certainly the major interveners.

8. The hearing programme

As described above, the hearing format was derived by the Reference Group in active dialogue with a Working Group that communicated the RISCOM Model and the systems analysis approach.

Each hearing lasted for two days, with late afternoon and evening sessions to encourage the public's participation. The programme did not require "continous" presence but was divided into fairly independent sessions.

The two main topics for the hearings (disposal method and site selection) are quite different in nature (two levels of recursion). Consequently it was decided to have different approaches for the two topics. The first day was dedicated to the disposal method and consisted of three parts:

- a short seminar with presentations from the authorities and SKB
- working groups to prepare questions for the actual hearings (neither SKB nor the authorities took part)
- hearings of SKB and the authorities based on the questions prepared in the working groups and with questions from the moderator.

The second day was focussed on the site selection and was more like a traditional hearing. SKB shortly presented the rationale for selecting the three sites, and the moderators asked questions and invited the audience's questions.

Three hearings were held in February 2001 with a total of about 200 participants (not counting representatives from SKI, SSI and SKB), which is considered quite successful.

In total about 170 questions were formulated in the working groups and followed by a number of questions from the moderators and the audience. All written questions have been answered, either at the hearings or in writing afterwards, e.g. answers have been published on SKI's web site.

9. Conclusions and recommendations on the hearing format

The conduct of the hearing was reviewed with questionnaires and interviews. The results of this review are reported in a special SKI report by Drottz Sjöberg [19].

The participants were overall content with the outcomes of the hearings even though they seldom changed the basic views they had brought with them. The strategy of openness, based on the concept of transparency, had played a central role in the realisation of the hearings, and enhanced the results from the questioning and dialogue that took place. The discussion in the Drottz Sjöberg report focuses on the potential conflict between transparency and stakeholder interests, and the role of transparency in a democratic society. It is concluded that transparency is a necessary although not sufficient factor in the decision-making process related to controversial and complex issues.

The results show an overall positive reaction to the hearing idea and the arrangements. Positive factors were e.g. that all central actors participated, the structure of the hearings, a stringent moderator and the group discussions. There were also negative responses concerning practical matters (e.g. time available, the meetings rooms), behaviour of the actors (too vague answers) and issues of a more fundamental character (e.g. mostly well informed people in the public, similar views among the actors).

Some of the keys to the success were:

- Unbiased and skilled moderators with capacity to treat all types of questions equal, non-judgemental interest
- Working groups to formulate questions gave the participants time for reflection and discussions without dominance by e.g. the implementer or the authorities. It is likely that many participants appreciated the possibility to be anonymous and channel questions through the moderators
- Well defined scope of the hearings developed in dialogue with the municipalities
- It was clear that the authorities were the owners of the hearings and that the outcome would be included their review of SKB's programme
- The early involvement of the municipalities in the planning process was essential since the hearings were held in the areas proposed for site investigations

It is clear from the evaluation that the majority did not change their opinion during the hearings about acting organisations and authorities, the little change there was, however was positive. In Norduppland, more than in Oskarshamn, there was a tendency to lump SKI /SSI and SKB as together "establishment".

Also, from the point of view of the RISCOM Model, the hearing format was quite successful in several respects such as the separation of levels and stretching without too much of adversarial situations. Still, though, the values inherent in the problems were more implicit than explicitly expressed.

In the further development of hearings in the Swedish nuclear waste programme a number of issues will have to be considered. The now completed hearings were

essentially based on the public's questions and concerns. In the future it may be considered to also arrange hearings on an "expert level". It should however be kept in mind that the municipalities are experts on local circumstances and must be involved since the immediate impact of a repository is local.

It could also be advantageous to have hearings in two phases. The first phase should then be focussed on the implementer, e.g. on material submitted to the authorities for review. In this phase the authorities should present e.g. criteria for the review. Following this hearing the authorities should review the implementer's material and present a preliminary review report. The second phase of hearings should then focus on the authorities' review report and possible supplementing submissions from the implementer. It is believed that this could be particular relevant in situations where important municipal decisions are to be made[1].

[1] In fact, the municipality of Oskarshamn arranged a hearing of the authorities about six months later. At that stage SKI and SSI had taken their decision on the FUD-K report, which means that they were in focus. This was the last single main event before Oskarshamn entered the final stage of its decision process.

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