

Nuclear Waste Management in Sweden in Comparison with other European Countries - NGO Experiences of the COWAM Process

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1. Introduction

This paper describes opinions on nuclear waste management from the viewpoint of the local NGOs in Sweden co-operating in The Waste Network (Avfallskedjan). These opinions have been encouraged and developed by active participation in the COWAM process. The COWAM process has shown both the similarities and the differences in the nuclear waste management in several European countries. However the similarities dominate concerning the key issues of decision-making and the fundamentals of the relations between operators and regulators on one side and local citizens at proposed repository sites on the other side.

2. The Nuclear Waste Problem

Nuclear power and nuclear weapons activities create nuclear wastes. These nuclear wastes are more or less highly radioactive and dangerous for a very long time. Most of the timescale is beyond the normal limits for human understanding. Based on present knowledge nuclear waste management must include long term storage of some kind. Therefore it is not amazing that proposals for storage methods and storage sites have been met by scepticism and resistance by the people affected in all countries. So far no final storage for high level nuclear wastes have been constructed in anywhere due to this resistance. Further more the decision process has been stopped more or less definitely in several countries. Thus, most actors are aware, that the basic conditions for a decision process must be revised.

The mistrust between different actors is a fundamental reason for the failure to make progress in the nuclear waste management. Normally it is argued that ordinary people and NGOs distrust established operators, agencies and governments. But there is also an obvious distrust for citizens' groups and NGOs by the operators. At least, this is the opinion of the NGO groups in Sweden.

However, all agree that the nuclear wastes have to be taken care of. The experiences up to now generally show that solutions can not be found based on

normal procedures for establishing disturbing or environmentally harmful activities. If the solution should have a chance to be accepted widely it has to be worked out in a more careful, extensive and wider process of cooperation based on fair conditions for all actors. The first steps should create the fundamentals of this process and establish some basic confidence for the process.

The Swedish debate shows that the choice of technical solution is a smaller problem, if several options are presented and evaluated in a credible way. Most people in Sweden seem to have the opinion that they accept a given method and site if it has been chosen in a credible way and if it has been convincingly shown that this is the best possible option.

3. Nuclear waste management in Sweden

The NGO viewpoints on nuclear waste management in Sweden were described in a paper presented by the author at the first VALDOR conference 1999 [1]. The management of nuclear waste in Sweden is characterised by the early fixing of method to final disposal in canisters at a depth of about 500 meters in crystalline bedrock. For more than 25 years the efforts of the nuclear industry and the operator SKB has concentrated on finding a suitable site for this repository. However, no clear and coherent process for choosing method and site have been presented.

Step by step SKB has moved from looking for a suitable site where the rocks should have limited fissures to generally volunteering municipalities and then to municipalities hosting nuclear facilities. As an adoption to this change of site-finding strategy SKB claims that nearly all Swedish bedrock is suitable. Consequently the two test drilling sites chosen recently are located practically inside the fences around the nuclear plants in Oskarshamn and Östhammar. Thus, acceptance and practicalities have very clearly replaced considerations of environment and safety as the determining siting conditions. Sundqvist describes the Swedish nuclear waste management in a similar way much more comprehensively in the book "The Bedrock of opinion" [2].

Thus, at a closer look, the situation in Sweden is not so favourable as it might appear from the outside. The process has from the viewpoint of the nuclear industry successfully proceeded up to detailed site investigations. However, the way to get there has not been based on matter-of-factness, rather on an opportunistic use of unclear rules and regulations, interpreted by weak authorities and governments not willing to interfere. The relatively new Swedish environmental code now demands clearly defined and evaluated alternatives and a clear motivation that the chosen method and site are the best regarding to the environmental impact. It will probably become difficult to fulfil these demands based on the management up to now.

The Swedish operator SKB has accused NGO representatives for disturbing the management process and the decision making in the municipalities. This was recently expressed by the managing director of SKB in a contribution to the debate in a local newspaper before the decision on test drillings in the municipality of Tierp [3]. By this, in the eyes of the NGOs, SKB is trying to prevent normal ways

of expressing citizens opinions. Thus, there are for the moment no constructive relations between the NGOs and SKB.

4. The Waste Network

The Waste Network co-ordinates groups of citizens at places which have been considered as sites for nuclear waste management. The Waste Network was created in 1981 as a consequence of test drillings that were planned or executed at a number of sites. The aim of the network is foremost to promote exchange of knowledge and experience between local groups and to co-ordinate common actions as review of reports and dialogues with politicians and government agencies. Together, the Waste Network groups represent a unique and extensive civic experience in Sweden of citizens involved in the nuclear waste issue. On the other hand, most of the groups within the Waste Network have never had any resources except voluntary work. Based on the conditions in Sweden the opinions of the Waste Network can be summarised in the following points:

- The management of the nuclear waste is not solved. As a consequence, in order to minimise the amount of waste, the further operation of nuclear reactors should be restricted to as limited time as possible.
- The choice of method should be made before the choice of site. The deadlock to the KBS method must come to an end. The choice of method must be reconsidered based on clearly expressed functional conditions formulated in advance.
- The siting must be based on considerations on environment and security, not political acceptance. A clear and understandable sieving process at a national scale should be performed to find the best possible site.
- An independent authority must control and supervise the EIA process instead of the nuclear industry. A well performed EIA process is the necessary condition to give the choice of method and site enough legitimacy and acceptance in the eyes of ordinary citizens.
- Environmental organisations being the representatives of the public must be given reasonable conditions and resources to take part in the EIA process to choose method and site. These resources should include the possibility to engage independent experts.

5. The COWAM Project

COWAM means "Communities and Nuclear Waste Management" or more completely: "Comparison of Decision-making Processes at the Local and Regional Community Level in Nuclear Waste Facility Siting". COWAM presents itself in the following way on the Home page [4]:

"COWAM is a European Concerted Action supported by The European Commission DG RTD. The general objective of the COWAM concerted action is to

develop practicable recommendations in order to improve the decision-making process related to nuclear waste management facility siting and operation at the local and regional levels while taking into account the specificity of national, cultural and historical contexts of European member states. In the trend of risk perception research, studies have provided a first picture of the public resistance as regards disposal. A specificity of COWAM is to approach this problem at first from the point of view of the local and regional communities currently or potentially concerned by the siting and the operation of the nuclear waste management facilities. The participants of COWAM are:

- Elected local and regional councils*
- Local NGOs*
- Administration of local and regional councils (including Chambers of commerce, industry and agriculture)*
- Local Trade Unions.*
- Regulators*
- Operators*
- Experts.*

The most important COWAM activities take place at four seminars where case studies are presented and discussed. At the first seminar in Oskarshamn, Sweden in September 2001 three case studies were presented: Oskarshamn and Tierp in Sweden and Sellafield in the United Kingdom. The second seminar in February/March 2002 was held in Verdun, France and treated Gorleben in Germany and Bure in France. The third seminar in September 2002 in Fürigen, Switzerland treated Wellenberg in Switzerland. The fourth seminar is to be held in Cordoba, Spain in March 2003 and will treat the management in Spain and Mona and Stola in Belgium.

At the seminars the case studies are discussed in groups of different composition and in plenary sessions. In Verdun Recommendation groups were created to draw conclusions. Eight groups should address two of the following four topics:

- Local democracy
- Site selection process
- Expertise in the local decision-making process
- Influence of the local actors on the national nuclear management framework.

The outcome of COWAM is expected to comprise final conclusions on:

- *A comparative analysis of waste facility siting decision-making processes, stressing the common characteristics as well as the key differences, according to the contexts, among the types of waste facility siting, examined in the case studies.*
- *An analysis of the criteria and conditions of a good and possibly successful decision-making process for nuclear waste management facility siting and operating, notably high level and long term nuclear wastes.*

- *Recommendations & concrete and practicable guidelines to assist policy formulation when necessary and, taking into account the specificity of the national contexts of Europe Member States.*

In the draft proposal for a project continuation the general outcome of COWAM so far is described as follows:

"A pluralistic and interdisciplinary COWAM network has been created in 2000 involving key local and regional actors from European countries, in dialogue with a panel of implementers, regulators and experts in the field. This project carries out a collective and pluralistic reflection on the way to improve the decision-making processes related to radioactive waste management facility siting and operation at the local and regional levels while taking into account the specificity of national, cultural and historical contexts of Europe member states.

Among the concerns shared by the participants of COWAM is the necessity to properly address the issue of radioactive waste management in a safe and responsible way, creating the conditions for the implementation of sustainable options which are acceptable both for present and future generations."

6. Conclusions of the COWAM Process

The following conclusions can be drawn from the COWAM process based on the viewpoints of the Waste Network.

- There are apparent similarities between COWAM and the Swedish "Dialog" project in the beginning of the 1990s. The purpose of the Dialog project was to investigate how a participatory process on nuclear waste management might be accomplished in Sweden. Authorities, municipalities and NGOs participated in the project. One starting-point was the expectation on an EIA process, which at that time recently had been introduced into the Swedish environmental legislation. The participants agreed on some fundamental points, e. g. an independent EIA actor and reasonable resources for NGOs [5] but the advices of the project were not realised. It should be noted that the operator SKB was invited but refused to participate in the Dialog project.
- The nuclear waste management is at least a national issue. However, the siting in Sweden has never been more than a local question when concerning the involvement of citizens outside the experts, the nuclear companies, the regulators etc. The basic reason for this is the fundamental process for choice of method and site having not been a matter of broader debate, only a technical matter for experts. This is very probably the main reason for the strong local resistance to test drillings and other siting considerations. Obviously this is even more the case in other countries in Europe as the United Kingdom and Germany.
- It is important to allow citizens groups and NGOs to participate in the process in a real way, not only as "democratic decorations" on the limited conditions decided by the establishment. This demands the access to economic means and

the possibility to engage independent experts. Sundqvist [2] describes this in the following way:

"From the perspective of democracy, a narrow focus on the public's acceptance or rejection of an HLNW repository is not adequate. Public involvement must include the possibility to participate in and influence the decisions in a more substantial way. Very few would equate democracy with surveying public opinion. So then, why talk about acceptance at all? More properly, we should talk about participation, influence and legitimate decision-making."

- The label NIMBY is often used to out-define or exclude local people as credible critics of proposed sites. It is much better to accept that NIMBY is always a constituent of objections to some proposed action which consequences are experienced as being negative. Who would not oppose deterioration of his near environment or safety?
- Accept that actors have motives of different kinds for engagement in the process. Examples are considerations based on NIMBY, attitudes to nuclear power (positive or negative), career possibilities, economic factors as value of property etc.
- The credibility of the actors is very important. The nuclear industry wants to promote the operation of nuclear facilities and thus has obvious motives to eliminate the waste problem as an obstacle. Based on the Swedish experiences the Waste Network promotes leaving the overall responsibility of the process to some independent body.
- Probably, it is difficult to adopt exactly the same process or methodology for the decision-making process in all countries due to culture, organisation, legislation etc, even if the basic problems seem to be rather similar.

7. Expectations on a Continuation of COWAM

- The COWAM process 2000-2003 seems to turn out successfully. Therefore in May 2003 a proposal for a COWAM 2 project most probably will be handed to the EC Commission within the sixth Framework Programme for Research (FP6). The following points express some expectations of the Waste Network on a continuation of COWAM:
- The issue of long-term governance of nuclear waste is fundamental. However, this has not been debated very much within NGOs in Sweden so far, but the discussion has started. Up to the last years most people in the Swedish NGOs have shared the earlier official standpoint that the nuclear wastes should be buried relatively fast and out of reach for humans now and in the future. The reasons for this standpoint have been ethical - we should not leave this to future generations - and fear that the wastes could be taken up again and used for producing bombs.

As the official standpoint has changed to promote a more or less retrievable storage also the standpoints within the NGOs to some extent have changed to a more "wait and see" attitude. This attitude is also based on a growing negative view on geological disposal as such, motivated by the protection of groundwater (in Sweden almost any geological disposal must be located in fissured rocks containing groundwater).

- There is an EC proposal for a directive on radioactive waste [6]. This proposal gives priority to geologic burial of waste as the safest method of disposal known at present. The member states of EU should according to the proposal decide on burial sites for highly radioactive wastes by 2008 at the latest to have the sites operational at latest by 2018.

This proposal is totally unacceptable for Swedish NGOs. The management of nuclear waste must be based on a process to achieve consensus as far as possible and that process must be given time without limitations. The continuation of COWAM will probably facilitate such a process. On the other hand a possible EC directive including short time limits could add to the present blocking in several countries.

- The Waste Network has long and deep experiences of the Swedish nuclear waste treatment, but quite limited knowledge on the conditions in other parts of the world due to the small resources. Thus, the continuation of COWAM is a chance for The Waste Network to exchange knowledge and experiences. This might hopefully be valuable both for the Swedish nuclear waste management process and for the activities in other countries.
- Generally in my view the step from COWAM 1 to COWAM 2 means going from agreed problem identification to agreed proposals on actions within an agreed decision process.
- In my view it is important that COWAM 2 gets to as concrete conclusions or recommendations as possible on processes and procedures without taking standpoint on the exact choice of methods and sites. However, that should not exclude that methods are discussed without limitations as a basis for considerations on processes and procedures.
- Considering the strong antagonism between different actors on the nuclear waste management a reasonable starting-point should be the identification of agreed opinions. If such a "consensus basis" is created from the "bottom", then the process can proceed to identify agreed ways of performing the decisions process.
- In the view of The Waste Network handling of nuclear wastes can not be discussed without connecting to the energy issue generally and the problems of nuclear technology in specific. North Korea now shows the constantly obvious connection between civil and military nuclear techniques.

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